

Ethical UX

[slide - villa la rotunda]

The sixteenth-century Villa La Rotunda is the masterwork of the architect Palladio, who changed the way we think about architecture. He used all of his knowledge of architecture to design this space for his client, the priest Paolo Almerico. With this design, Palladio reached back to ancient Rome and embraced the way the Romans built their buildings to embody the virtues and ideals important to their society. The proportions, the scale, the materials, all related in some way to the values that Palladio thought were important. And just in case you hadn't taken a course in architecture and didn't know, he covered the Villa with statuary embodying particular virtues and ideals. He had the goddess of wisdom, the goddess of justice, and others. So when you're out for a stroll, not only does the building embody these virtues, but you see them standing before you.

[slide - frontispiece]

For Palladio, the idea of embedding values into his work was so integral to his approach to architecture, that even hundreds of years after his death, his influential book, *The Four Books of Architecture*, was still printed with a frontispiece depicting the maidens of architecture bowing before the Queen of Virtue. The image was to give you an idea of what the book was about, in case you thought it would just be about how to design a functional building. Instead, it was a book about values, a book about ethics. Incidentally, it is also a book about architecture.

Palladio was very intentional about explicitly building values into his buildings. But this is not a unique thing, using one's values to help shape a building. Many architects and designers intentionally build their values into their work.

[slide - speer's pavilion]

This is Albert Speer's German Pavilion for the 1937 World's Fair, representing Germany's fascist government. It is a monstrous, imposing, threatening tower of might. The building itself represents those values, it instills fear in those who stand below its towering stone edifice. In case the solid, impenetrable fortress doesn't get the message across, Speer also added some statuary that embodies those values in the form of an enormous, menacing eagle peering over the top edge.

I think we can best see the values built into Speer's building by comparing it to the German Pavilion done 21 years later.

[slide - Eiermann's pavilion]

Egon Eiermann built this pavilion for the 1958 World's Fair. It is a three story, flat, horizontal building. It feels tranquil and calm. It is all glass, representing transparency and democracy. The World's Fair is a place where you represent what you believe is right in the things you make. So these were very intentional choices by the architects, to encode these values into their buildings.

[slide - alain de botton]

And this is not unusual. When we build things, we want them to be expressions of us. When we build things, we want to help people feel cared for, supported, or intimidated, depending on our values. To understand Speer's values and Eiermann's values, we can look to the history of Germany over these two decades, before and after World War II. But even without that context, we can see a different vision of the world in the facades of these two buildings, a different way for Germany to present itself to the world. Speer challenges the world with the image of might, while Eiermann lays Germany open before the world, ensuring no secrets are hidden within.

[slide - gerrymandering chart]

But values not only encoded in buildings. Gerrymandering, for instance, is also a design that reflects the values of its creators. This graphic is an example of how the redrawing of political boundaries works.

If you have, for instance, 100 voting precincts, and 60 of them vote for a liberal candidate, and 40 vote for the conservative candidate, split into equal districts, you will have 5 districts sending liberal representatives to Congress. That's not representative of the population, so you'll want to find a way to better represent conservative voters. One option would be to redraw those districts and put as many liberal voters as you can into two of those districts, and then you can send 3 conservative candidates to Congress even though they are outnumbered by 20%.

This is a design, and it represents the values of the people who created it.

[slide - North Carolina's 12th congressional district]

If you want to see what this design looks like in real life, above is North Carolina's 12th Congressional District. Doesn't it seem like a really obvious shape for a congressional district? The District has three cities in it, that tend to vote Democratic. The party that was in control, the Republicans, redrew this district to load it up with the opposition party, potentially thwarting the will of the people, with design.

[slide - Paul Goodman]

The late Social Critic Paul Goodman wrote that "Technology is a branch of moral philosophy, not of science." And when he spoke of technology, he was speaking broadly. By technology, he meant knowledge applied to practical means, rather than the simple definition we often gravitate towards, like gizmos and gadgets.

We take what we know, and we make something with it. That's technology.

[slide - design is a branch of ethics]

The process of making technology is called design. It's not just architecture, it's not just gerrymandering, all of these are created through design. And design is a branch of ethics, because every decision we make as we create something is going to limit and constrain the possibilities for the people who use our tools, our services, and our designs.

[slide - Andreas Orphanides]

North Carolina State University Library's Andreas Orphanides says in his talk *Architecture is Politics* that all of our designs reflect our values and the culture that we are in. This is true when we are intentional about encoding our values into our designs, like Speer and Eiermann. This is also true when we're intentional about designing something like a user interface or a poster, whether we think about our values at all. But it is also true when we design something without being intentional about the design or our values. All systems that we design, everything that we create, including our policies, our workflows, our buildings, our websites, and our services, reflect our values.

[slide - what are our values?]

So, what are our values? As librarians, we could all go to our professional organization's website and download a handy PDF of our code of professional ethics. Then we could point to it and say, here you go! Access, privacy, equity, our values are all here in black and white.

When was the last time you taped your organization's code of ethics to your wall, or made them explicit in a project? That's okay, we don't necessarily have to have it visible all the time to know what our values are, right?

[slide - Primo]

In our tools, if someone searches for "children's literature" and our discovery layer suggests that they might be interested in "children's sex literature," what values do those reflect? Access?

Do we value our users more than the appearance of convenience?

[slide - brooklyn public library]

This is the Brooklyn Public Library's online library card application. You don't have to go in and fill out a paper form.

[slide - bpl form gender question]

But this is one of the questions they ask: gender. And they give exactly two options: Male, or Female.

If I'm a transgender woman and I encounter this question, how do I answer it? Do I answer for who I am, or do I answer what it says on my birth certificate? After all, they don't say what they will do with this information, or who will see it. If I haven't come out to my friends and family, do I dare answer this truthfully?

If libraries are supposed to be a safe place, why would we ask this question, and make someone justify themselves just to use our services?

What are our values? Equity? Privacy? Do we value our users more than our fetish for data collection?

[slide - Summon stress in the workplace]

If we search for information about stress in the workplace, and our tools tell us that stress is probably related to women in the workforce, what are our values? Equity?

[~10m]

[slide - Encore]

If our tools will only work on the newest technology, what are our values? Access? Equity?

[slide - Illiad]

If our public-facing designs offload the complexity of our bureaucracies onto our users, then what are our values? Access?

[slide - Monterio]

The difference between libraries and Palladio, libraries and Speer, and libraries and Eiremann, is that the great architects intentionally encoded their values into their designs. Your values will be encoded in your work whether you want them to be or not. So be conscious of your values and what you want your work to say.

[slide - Cody Hanson]

In 2016, our friend Cody Hanson (where is Cody?) gave a talk at the Library Technology Conference that I think about a lot. Libraries are changing all the time. According to Cody, when you look at what doesn't change in libraries, the one constant is that our shared values underlie what we do. They are the most important part of libraries.

[slide - Cody Hanson - slide 2]

If we want to make great experiences for our users that embody our values, we have to build those things into our software and services. This is intentionally encoding our values into the things we design.

[slide - blank]

When I hear Cody say that we should be encoding our values into our services,

[slide - ethical design]

I hear him saying that we need ethical design.

But what does that mean, ethical design?

[slide - cennydd]

Ethical design is thinking about what happens in the world if we make this thing. You have to think about how the people who use your design will be affected. Will it affect the way they are able to have face-to-face relationships with other people? How non-users will be affected. Questions like, what will commuting be like if everyone starts using this device while they are driving to work? We need to ask how the earth and its resources will be affected. Is it worth using more electricity every day than Salt Lake City to run the servers that let you like and friend your friends from elementary school? Maybe. But we need to ask. How do the choices we make when creating something help or hinder those who will use it? Do these questions sound familiar to you? This is what user experience design is supposed to be doing.

[slide - Frederic Pohl]

Experience designers think about the experience of the people who use our designs. We have to focus more broadly, to look beyond our creations to see them in use, to see how they affect the quality of life of the people who use (and choose not to use) them. User experience, and ethical design, are about thinking through the impacts of new technologies and designs, not just focusing on the designs themselves.

[slide - Papanek]

If you read one book about design in your life, you should read Victor Papanek's Design for the Real World. It's a classic 1970s screed against the state of everything. The first line of the book is "There are professions more harmful than industrial design, but only a few."

Papanek argues that designers need to engage their moral and ethical judgment before creating prototypes, before drawing sketches. He urges us to think about ethics from the beginning.

[slide - Monterio]

Often we get so wrapped up in solving a problem, in being carried along by our enthusiasm (or, honestly, by administrative inertia) that we lose sight of the affect our designs will have on the people who use them.

What kinds of values have we ended up with in library land by not building our values intentionally into the things we purchase, license, and create?

[slide - Analytics]

Let's talk about analytics.

Libraries love analytics! And I'm thinking of analytics broadly. We can include qualitative and quantitative data about our users under the heading of analytics. We love usage data, website data, circulation data, interlibrary loan and course reserve data, bounce rates, and even gate counts for some reason.

[slide - IDEO]

Why do we collect data? Design giant IDEO reminds us that “the goal of design research isn’t to collect data; it’s to synthesize information and provide insight and guidance that leads to action.”

For many libraries, we have to provide a big data report every year to organizations like ACRL and ALA, because these organizations want to know how many people walked through the gates of our library or how many books with LC Call numbers beginning with BM were checked out. It doesn't matter that gate counts offer absolutely no qualitative information or context for how to improve your library or services, the point is that you have a number you can share with these organizations. So we collect the data.

[slide - Galvan]

But data has a particular purpose, which is to guide you as you work through the design process. It's to help inform your design. But that's not how libraries, or the vendors who create the products we buy and license, tend to use it. We mostly seem interested in collecting it, just in case.

[slide - Salo]

How many of you have Google Analytics installed on your websites? How many of you made a conscious choice when installing Google Analytics, fully understanding you were making a trade-off? How many thought what they learned from the data would be so valuable that it would be worth the risk to our users' privacy by sharing their searches with Google? No one here had that conversation.

At GVSU, we didn't have that conversation either. I have 14 different instances of Google Analytics running on all our various web tools. (This is starting to feel like a 12-step meeting: My name is Matthew, and I use Google Analytics.)

But beyond the privacy concerns, I have other real issues with analytics. We love analytics and data so much that often it's the only thing we see.

[slide - Chimero]

But what do you see in a spreadsheet, or a database, or a map? Can you see people behind the rows and rows of data?

We always talk about designing for people. But, if the people are only represented by columns and rows of numbers, it is a bit easier to forget that those are real, complicated people using our libraries. Analytics reassure us that people are predictable, that their behavior will be reasonable and methodical.

[~20m]

How confident are we that analytics tell us enough about our users? How confident are we that collecting data and sharing it with vendors and other third-parties represents our values?

[slide - Gale's analytics]

This is a screenshot from the marketing website of Analytics on Demand from Gale. It's an analytics service that is provided by the company that will give you "household-level data" about your users. That means that instead of anonymous numbers in a row of spreadsheets, you can know the "age, race, and ethnicity" of the people behind those numbers. But what good is that information? Are demographics, our racial backgrounds, our genders, are these factors what cause us to make decisions, to want things, to do searches in the library? How can this information possibly help a library? Is the help worth the privacy trade-off?

Gale also claims they can provide you with voting information about your patrons which, I suppose, can be valuable if you are a public library with an upcoming millage, but if scares the hell out of me. Look at that map: do you see people behind the pin points, highlighting where all of the libraries patrons are?

[slide - chimero and gale]

The way this service works is that you upload all of your own information to their friendly servers, and then they crunch your numbers, combine it with information from data brokers like Experion, and spit out some dehumanizing maps and charts for you as the last vestiges of your patrons' privacy are flushed away. Sorry, the marketing materials wanted me to say "Gale Analytics helps you extract maximum value from your data."

This service provides them with a lot of value, too, of course. They want the data more than they want to provide you with this analytics service.

It's a honey pot.

I think we have to be very careful with this kind of analytics usage, because we're not thinking up-front about what is right. Our moral judgment has not been invoked before we signed our license agreements.

Let me be clear: I am not condemning analytics. I am not saying we shouldn't use data about how our services are used. (I am coming down strongly against creating a map of where library patrons live.) But we're designing for people, and we need to consider how our design choices and processes affect them, even if it means forgoing some potentially useful number crunching at millage time. It's time to make our design process more rich, and move beyond analytics and data.

[slide - personas]

“But Matt!” you’re saying. “We have personas! They help us take that data, and they humanize it.”

Personas are profiles of make believe users that represent the behaviors of a group or class of users, like “undergraduate science majors” or “tattooed, cat-loving librarians.”

How many people here use personas? They can be a useful tool, especially if you want to communicate patterns of behavior within your organization, or when you are designing, or helping to provide some context for the analytics data you’ve collected. Some people prefer to see a face instead of data, to “trick” themselves into designing for a person that is an amalgamation of behaviors of particular types of users. I use personas in my work, as do many of my colleagues at GVSU.

[slide - Erica]

And we have good intentions, because you need to have a way to design for people who are not you or the other library staff. “You are not the user” is a mantra I drilled into my colleagues for years. Designing for yourself will lead you to make assumptions about your users that simply aren’t true.

So personas are a design tool that help us better understand our users.

[slide - MSU personas 1]

Here are some examples of personas from Montana State University Libraries. They’ve done a terrific job of documenting and researching their personas, and they’ve been useful to me as I created and refined my own.

They have an undergraduate persona, a graduate student persona,

[slide - MSU personas 2]

and they also have faculty, including an adjunct (whose salary is approximately half of what a barista at Starbucks makes.)

But the longer I've used personas, and the more I've talked with others who use them, I've begun to feel uneasy about them as a design tool, at least in the way they are commonly used. Do you see anything strange about the personas above?

Everyone is smiling. Even the adjunct professor is smiling! (I used to be an adjunct at GVSU, and I can tell you that I didn't have time to smile, because I had to work 2 other jobs to pay rent.)

[slide - McGrane]

The question is, when our personas all seem to be happy, perfect individuals, then who are we designing for? We're designing for smiling people, happy people! People who love being at the library! What amazing opportunities they have in the library, and they're so happy about it.

But people aren't really like that. Karen McGrane asks us to remember that we're not designing for the "expert automaton." We're instead designing for real humans. These "patterns" of behavior we've encoded into personas seem like nothing more than the same biases we read into our raw data, but with a smiling, creative-commons licensed portrait tacked on top.

Full disclosure:

[slide - GVSU personas]

here are the smiling people on the GVSU personas. We're not immune from this.

How can we make these design tools and our research reflect the complexity of our users?

[slide - Eric Meyer]

Think about situations that might bring someone to a library. Because, your users might not have a choice about coming to you. They might be in crisis, afraid, numb, bored, angry, sad, or some combination of these things. I know of users who have treated the reference chat service as a suicide hotline. Are we ready to help them when they come?

[slide - Indi]

The designer Indi Young wrote a terrific article on crafting personas without demographics or photos. Indi proposes that instead of leading with demographics, you lead with needs, and use description and narrative instead of “facts”. Demographics aren’t necessary for a persona to be useful, but they might trigger biases about particular groups of people in those who use them to design.

[slide - Algorithms]

Now everyone’s favorite topic, search algorithms.

We interact with algorithms all day, every day. Nearly everything today is powered in part by algorithms: the fitness trackers we wear to track our movements, our smartphones and their voice assistants and GPS, and all of our must-have apps. Algorithms choose what we see when we search, they choose which of our friends’ messages we see, and they recommend our next round of entertainment. They determine how likely we are to default on a loan, what interest rates we deserve, and whether our résumés indicate that we will be a good fit for a job. They have become so pervasive that the author and urbanist Adam Greenfield refers to their ascendancy as “the colonization of everyday life by information technology.”

The library is no exception. Of course, we’re ahead of the game. Before we had computers the library ran on algorithms. An algorithm is a series of choices often based on conditions, like a Choose your own adventure novel or the steps to catalog a book. (Impress your friends by referring to AACR2 or RDA as algorithms about semi-colon placement.)

[~30m]

We think of algorithms as neutral, objective systems that we build into computers. And so, if the computer is doing the choosing or the recommending, then there can’t be a problem of bias or discrimination.

[slide - Andreas]

But all of those algorithms were written by people, with ideas and opinions and biases they might not even know they have. Virginia Eubanks, a professor at SUNY Albany, recounted how designers of an algorithmic system to help manage Indiana’s welfare recipients was based entirely on stereotypes of those who use public assistance: that they are lazy, that

they will file fraudulent claims, and that they will do anything to take advantage of the system. To assume that an algorithm can be written by someone with opinions and biases that magically disappear once a computer gets involved is disingenuous.

[slide - Gillespie]

Relevance is another problem with search algorithms, although one that usually gets a pass. Libraries don't even have a clear idea of what relevance is anymore. Yet, we base many of our decisions on the effectiveness of one set of relevancy algorithms over another.

But what is relevance? How many people here have a particular search you do when you encounter a new library search tool? (I once built a small social network called This is My Search at the Sheraton bar after the Library Technology Conference. The site allowed librarians to simultaneously share “their search” while testing it on a random, new system, so I know you all have one.)

My search is “batman,” which gives you a nice mix of medieval special collections material as well as contemporary books and media from both adult and juvenile collections. My friend Matt Borg uses “ethical tourism.” John Chapman of OCLC told me years ago that his was “Space law.” And my colleague Jeff uses “Stress in the workplace,” since you can see how well a tool uses word proximity by looking for engineering articles.

But we like to use the same search across different tools because we think we’re also evaluating the relevance algorithm of a tool. We might say, upon seeing a strange set of results in a new system, “I don’t like the relevance ranking of this system.”

But what is the assumption behind that statement? Is relevance actually a property of a list of items? Or is relevance actually a property of the relationship between the items and the person who needs information? There has to be a “for whom” for something to actually be relevant.

If two different patrons search for “fetal cell research” in your discovery tool, you may get varying reports as to the relevance of the results. Imagine the first user is a second-year college student writing a research paper, while another is a late-career academic that was just diagnosed with cancer and was told that these experimental fetal cell treatments would be her only hope of survival. These two people will have wildly different ideas of what results are relevant for the search ‘fetal cell research.’

[slide - results screen]

When search tools make the claim that their results are all “relevant,” we end up with some problematic situations like this one. Here is a known item search for a book on the information needs of LGBTQ youth, and Summon returned exactly 2 results: the item and a compendium on “mental illness.” How are we to interpret these two items being seen as relevant to a search about LGBTQ people? Are we comfortable with this idea of “relevance”?

[slide - heart attack]

The Topic Explorer used to be one of my favorite features of Summon, the discovery layer we use at GVSU. It is designed to give contextual information about broad searches (or what we often call crummy searches, 1–2 words at most). In the example given with Summon’s marketing material, searching for “heart attack” will expand the search and bring in an encyclopedia article about myocardial infarction, which is the medical term for heart attacks. Because medial literature is going to use this terminology, the user gets more academic materials and learns the proper terminology for their field of research.

I did an analysis of the Topic Explorer in 2016, because I wanted to help make it better. 93% of the time, the result was at least roughly on the same topic as the user’s search. That’s pretty good success for an algorithm.

But the more important question isn’t about the tool’s success, but what happens when it fails. What about the other 7% of the time, when it is wrong?

[slide - Barack Obama]

In early 2018, Ruth Tillman of Penn State University Libraries sent me an email about some inaccuracies she had found with Summon’s Topic Explorer, like this one. This screen shot was taken on January 9, 2019, and it shows a Wikipedia article claiming that Barack Obama is the “44th and current President of the United States.”

[slide - Donald Trump]

A search for Donald Trump shows that he is a reality TV star and a real estate developer. No mention of his political career. I began digging, and found an entry for the cartoonist Chris Ware that was edited on Wikipedia on February 20, 2013, but the edits were not in the Topic Explorer entry. I realized that Ex Libris developer had made the decision to inject Wikipedia's entries into their own index, and then had never updated them. Summon 2.0 was announced in March of 2013, at least a month after the Wikipedia content was added.

They made an infrastructure choice that played on Wikipedia's reputation for up-to-date information, and removed the one thing that Wikipedia has that print encyclopedias do not have: recency. Ruth and I approached Ex Libris in May of 2018. In February, I published a short note on my blog about why GVSU had decided to turn off the Topic Explorer, which was the first time we had shared these inaccurate results publicly. Suddenly, Ex Libris was interested in fixing the issue!

[slide - Osama bin Laden]

Of course, this isn't just limited to Wikipedia and infrastructure choices. The nature of the way that licensed reference collections work is such that they are not always up-to-date. Here is an entry for Osama bin Laden from Credo Reference that says he is still alive. This entry was written in 2002. Either Credo or our subscription had not been updated since then.

Did the developers understand how reference collections work? Do they understand that content will not magically update itself?

Keep in mind that we are *paying* for this content. We are *paying* for a system that cannot even tell our users who the correct president is. That's the first question amnesiacs on TV are asked! Who is the president. Summon can't even get that right.

What were the values the developers encoded into this system?

[slide - virginity]

We don't know exactly how the Topic Explorer works, because the algorithm is proprietary. So we don't know what makes it decide to choose one topic over another. We don't know, for instance, what makes it choose "Sexual abstinence" if you are searching for virginity. These are not synonyms, as you can be sexually abstinent and not be a virgin. There are, in

fact, strong religious and political connotations to those two terms, and conflating them in this way makes it appear that Ex Libris, and for the purposes of our users, the library, is making a religious and political stance.

This goes beyond a factual inaccuracy, and crosses into an area that starts to feel more and more like bias. In my study of Summon's Topic Explorer, fully 1% of all results were biased against women, people of color, Muslims, the LGBTQ community, or the mentally ill.

One in 100 results will be biased against an already marginalized group.

What are our values again?

No one sat down and consciously connected sexual abstinence and virginity together at Ex Libris, so how did they get matched? What happened?

Some of the next few slides contain results that may be triggering or upsetting.

[slide - Primo]

What happened in Primo to connect a search for “new york city waste” to “new york city women”?

[slide - women in film]

Why does Summon assume that the only women in films are in a exploitation genres like prison films? (Just in case you miss the encyclopedia entry, a related topic to women in film is Sex in film.)

[~40m]

[slide - EDS racism]

How did a search for racism in EBSCO Discovery Service lead me to an encyclopedia article on “scientific racism,” a bankrupt 19th century racist theory? If you click in to the entry to learn more, you will see the problems with “scientific racism,” but how many users will do that? How many will just see the word “scientific” in front of racism and draw their own conclusions?

[slide - sexual harassment]

Who made the decision to automatically illustrate entries with photographs from related topics? Will younger students understand that Supreme Court Justice Clarence Thomas is here because he of Anita Hill confronted him during his confirmation hearings nearly 30 years ago about the sexual harassment she endured? Or do they just see an African American man next to the definition of sexual harassment?

[slide - rape in the us]

What happened in Summon to connect the idea of rape with hearsay testimony? How did an algorithm make this connection between unverified claims and sexual assault?

[slide - rape myths]

What happened in EDS to make the claim that the most relevant rape myth is “rape culture?”

[slide - annany]

It's not a coincidence that the problems we find in our tools reflect the same biases we fight outside the library in our larger society every day.

None of these were intentionally added to these systems. We have to be very careful when we provide complex tools and services to complex people. Because if we lose sight of the fact that we are dealing with real people, not smiling, 2-dimensional buckets of data, we can do real harm.

But what happens when a student struggling with their sexual identity sees a result that equates being gay with mental illness? What happens when a rape victim is told in a supposedly objective, neutral, academic setting that her experience is a myth, or that it's just hearsay evidence, just gossip?

What happens when a young man struggling to understand his racial identity searches in a search engine and finds white supremacist manifestos, that convince him to hate people of color? That's the story Dylann Roof told, about going to Google to search for “black on

white crime.” The websites he found contributed to his decision to murder 9 people in a South Carolina church.

[slide - what can we do?]

Getting this right matters.

So what can we do?

[slide - undermine the objectivity of systems]

The most important thing we can do right now is to undermine the ridiculous claims of objectivity we have been making about these systems. Stop telling people that “library search is better than Google,” stop telling people that you don’t have to worry about whether something in your library search is true, because the library only has facts for search results! (These are all actual claims from actual LibGuides and other training materials.)

We can also use our designs to undermine these objectivity claims while maintaining some trust in our systems. For a while in the Topic Explorer, I added a few things below each entry to help contextualize why this entry had appeared, and also a way to report an inappropriate or incorrect result. Just suggesting that the result might not be accurate and might be inappropriate helps to poke a hole in those claims of objectivity.

Remember, we tell people that Google can be a valuable tool, but they need to evaluate the resources before they put their trust in them. The same thing is true of library search tools.

[slide - ethnography]

Second, we need to better understand our users, and looking at gate counts and focus groups isn’t going to help. We need to engage in continuous ethnographic projects, learning from our users how they work and learn, and how we can best serve them. Only by understanding our users on this deeper level will we be able to fully evaluate licensed and purchased software to ensure that it meets their needs, and also to design our own systems and services to be tailored to the way our users work.

[slide - design]

Too often we get focused on the object or website or service we are designing, and we forget to see it in a holistic light. The MIT researchers Bonnie Nardi and Vicki O'Day wrote about discarding the tool metaphor we use for technology, and instead to see technology as an "information ecology."¹ They use a library as their flagship example of an information ecology, where you have librarians, users, computers, databases, printed material, microfilm, newspapers, magazines, reference interviews, and coffee all interacting together. So designing for the ecologies where our users and library systems and services interact will get us prepared to start asking the kinds of questions that will help us see the effects of our design choices.

One way we might better pull values into our designs is to make our values explicit in the design process. Value Sensitive Design is a framework where values are spelled out like other design goals and deliverables. To do it, you need to have a more holistic view of your design process than just focusing on the end product of your design, though. You need to see the library as an ecology, to see how all the parts fit together.

[slide - teaching]

We aren't going to get perfect algorithms, so we have to prepare our users to deal with search engines that may not work the way we hope. When we work with our users in reference interviews or classes, we need to emphasize that library software systems are not magic. They can and will make mistakes. They are made by people, people will marketable skills that anyone can learn. These systems might at times return biased, offensive results. But giving our users strategies for how to evaluate scholarly sources in the same way we teach strategies for evaluating general purpose search engine results will better prepare them for doing their own research.

[slide - diversity]

The library world is overwhelmingly white, 88% white. Those making software for libraries are also overwhelmingly white and male.

This lack of diversity is a user experience issue! Who builds our software is a user experience issue! Who you hire to develop services is a user experience issue! Who you hire to work your desk is a user experience issue! Who you hire to choose the collections is a

user experience issue! Who gets a voice in your staff meetings is a user experience issue! These all affect your users' experience of the library, and must be treated accordingly, with your moral judgment in play from the beginning.

[slide - book props]

Later this year, Library Juice Press will be publishing my book Masked by Trust: Bias in Library Discovery, if you want to learn more about the problems with our systems and what we can do about it. I'm happy to share other resources as well, like Safiya Noble's book Algorithms of Oppression.

[~50m]

[slide - library is people]

For all the focus on workflows, systems, services, and tools, deep down, the library is about people.

Look, I believe that this is the best profession to be in. Because our mission is genuinely to help people.

But we need to keep in mind the whole humanity of those we are designing for. And that might mean some changes to the way we do things. But our users will thank us for it.

[slide - thank you]

Thank you.