



Information Design Dissected

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10:45 - 11:30 PM

JENN VISOCKY O'GRADY: Thank you for saying we're popular. Maybe someone could write that down for my mom. We're here as practicing designers and design educators. Most recently, I feel like we're design advocates and we try and spend a lot of time thinking about why design works and how we can explain and advocate for the profession. I think a lot of what we cover today – raise your hand if you're a designer. Okay, I'm talking to my people. I think it's all about how we phrase things and talk about the importance of what we do for a living. So Ken and I were noticing, we've been through the Clear Print guidelines, and I think it's really awesome that we're in CNIB's headquarters and RGD, as an organization, and CNIB are coming together to have this conversation. I think that kind of collaboration is really important. But as we looked through those Clear Print guidelines, we were wondering what design team they worked with to come up with that? I recognized that a lot of research went into that but I also think that there's a lot that design can offer as a profession to help augment those guidelines and come up with a range to offer us the most creative freedom and individuality to represent whatever message you're trying to put out there, whether they're socially driven or commercially driven.

KEN VISOCKY O'GRADY: I think that we also feel that those guidelines are a really great set of tools. But I also think it's really im-

portant to look at it from a typographic and cognitive standpoint to understand why those guidelines work, what we can learn from them and how we can expand on things. Because you know, I hear, someone mention in the questions, well you know, if we can only use black type, Arial, on white background, what does that do for me as a designer? It doesn't really allow me to organize information or explore content in a meaningful way or help create meaning in design. So I think there are some things that we can learn from that.

JENN: And so when Ken and I were putting together this presentations, we were thinking about how to augment it. We were thinking about designers as passionate people. I don't think anyone goes into this profession because they think they're going to land a great job and make a lot of money. I think its one of those lifestyle professions, right? You really like communicating, you are artistic, and you fell into design.

KEN: And designers happen to very passionate about typography.

JENN: So, when you tell a pack of designers that you can use Arial and Verdana, well, it may cause a little bit of tension. And that's probably because the folks recommending Arial and Verdana, don't really know the back-story on those typefaces. By the way, the tattoos, with the hope love; that's actually from one of my students this semester. Extra credit.

KEN: Speaking of Verdana, I don't know how many of you guys are following this in the design press but our friends over at Brand New made a joke about Verdana and IKEA has switched it's typeface from Futura to Verdana. It has made it into Time Magazine and there is now an online petition, with 3000 signatures, to get IKEA to switch back to Futura. And it also made The New York Times, The Guardian, Businessweek, as well as being covered extensively in the design press.

JENN: And we joke around about this but the history of it is that

Verdana was designed to be read more easily online. And so, using it on a website is great. Using it in print might not be the best idea but without being the design police, we wanted to bring up that you all have typefaces that you feel passionate about. You should be able to explain how and why they work and when you can use them wisely and I think this idea of accessibility can often touch on providing content on multiple levels so that all sorts of things are covered.

KEN: By the way, IKEA's decision wasn't that it was more accessible or easier to read. It was that they just felt it was going to be cheaper to streamline all of their communications because they were using Verdana online and they figured, well, we'll just use it in all the catalogues and stuff like that too.

JENN: And we should, in honor of fairness, disclose that we have a cat named Helvetica.

So, we're going to start covering aesthetic principles and this will cover a lot of the same things that the Clear Print guidelines cover but talk about why they work from a design standpoint.

The first thing we want to discuss is legibility and readability.

KEN: From a typographic standpoint. Legibility: when we talk about typography and letter forms, really what we're talking about are the traits that affect our ability to recognize individual letters or words, right? We're talking about the form of the letter. People read whole words. We don't read letter by letter. We read groups of words and we scan across it and read those chunks.

JENN: And that's what gives you the ability to read words quickly. So when you are a child and you're learning how to read, you start putting sounds together. And even now when they're teaching phonics, a lot of times they teach letter pairings. But then as adults, as you gain that ability to read, you're reading letter pairs and groups of words. And so, you're scanning all of that and when it's in upper

and lower case, it helps you read it more quickly because you see the shapes of them and when it's in a block form, it's harder to read.

KEN: Right. So statements in all caps are harder to read. What we're doing is taking the word away from the way we most commonly see it.

JENN: And that doesn't necessarily mean you can never use all caps, it just means you wouldn't want to typeset a whole book in that, right?

KEN: There are some folks –

JENN: Yeah, her name is Natascha Frensch and she's actually someone who suffered with reading disorders and dyslexia her whole life and so she is looking, literally, letter form by letter form as she's learning how to read things. And she designed the typeface called Read Regular. And here you see an example of Read Regular next to Futura. Futura is almost a mirrored image from the D to the B. In Read Regular, you'll notice at the bottom, and I'm not a true typographer, so it that the tail at the bottom?

KEN: Spur.

JENN: Skirt? Spur, thank you, sorry. I knew I was going to do that. But you can see how the b has a different emphasis in its counter. It really differentiates itself from the d so that somebody who is learning what those different shapes are has easier time learning.

KEN: There's a different stress on it as well.

JENN: And so she put Read Regular together and it was actually picked up by a number of children's book publishers in Europe and they found that it was an easier way for beginning readers and anyone with a reading disorder to start to absorb this information.

KEN: If you take a look at the letterforms, you know, if you take a look at the D and the B and the P and the Q, they're all very different distinct shapes, you know. She's not using – it's a unified face

but she's not repeating forms.

JENN: And so again, what I'd like to emphasize is, I hate black and white. I want something to give me a little bit of grey room to move. So I tell you first that you read the shapes of words, and most of you read the shapes of words, but some people actually read each letterform and so when you know your audience you can direct your communication to that audience.

KEN: One of the things we talk about with typography, we talk about legibility, we talk about how we can recognize letterforms, is scale. Scale is one of the most important things we deal with when we're talking about letterforms. This is Mrs. Eaves and Frutiger next to each other. This is the same point size okay. Mrs. Eaves looks a lot smaller because it has a lower x-height. The x-height is from the – sorry, I have a tendency to wander away – from the baseline to the top of the lowercase letters. You know, approximately fifty per cent are half cap height. So it appears smaller, where Frutiger is almost three quarters and so the larger the x-height, the easier it is to recognize the individual letterforms.

JENN: And so does that mean you can never use Mrs. Eaves? Absolutely not. It just means that you need to be aware that eight point Mrs. Eaves looks like six point. You know, it's a lot smaller so you need to use it in larger sizes and you need to think about what you're using it for.

So these are the ADA Guidelines, the much talked about ADA Guidelines. Designers don't speak in weird ratios like this.

KEN: You know when we were doing our research for The Information Design Handbook, we were talking about the ADA Guidelines and thinking about that in terms of typography and I think that – we come from a print design background. And so for us it was really, kind of hard to understand this. You know, we don't talk about typography in terms of its stroke to width ratio or it's width to height

ratio. And so, what did his mean? Because we couldn't find any visual examples of it, we just found written statements because this was written by an engineer, not a designer, not a typographer. And so, what does that really mean? It means that condensed letterforms are harder to read because generally we don't see them very often.

JENN: And so are extended.

KEN: And so are extended. So what this comes down to, you know, if we take a look at it in terms of stroke to width, is that it's really about figure ground relationships; that what we start to see - this is like Design 101 - is that we can't...what do we look at? The positive forms or the negative forms? The spaces in between the letters or the counters?

JENN: So check out that bottom word. I really notice that point, like the triangle between the Y and the P. My eye gets sucked into that probably because it's making a sharp point and I get really distracted by it. And again, I'm not saying you can never use heavy type, I'm talking about noticing where our eyes go, right?

KEN: Now the ADA Guidelines are also designed for signage. So we're looking at these examples in terms of signage and I think that there's probably a lot of people in the room that are thinking to themselves, 'well how do I translate that to print communication because does that mean that I should reset everything in bold text?' Probably not because you know from looking at bold text in paragraph form that it creates a denser field of grey and it's going to be harder to read and it creates those issues that we see with figure ground relationships. So example, is it the chalice or do we see two faces looking at each other? And I thought this was kind of funny because in my research about figure ground relationships there is some controversy over that there are two faces in the Canadian flag that are arguing? Or something like that? It took me a while, I was looking at it. It was like one of those 3-D images that you stare at and all of a sudden it comes to life. But there foreheads are togeth-

er and they're arguing or something.

JENN: Ken and I just see maple sugar candy and good beer.

KEN: That's all I see when I'm here.

JENN: So yes, display fonts. Not the most legible things to set street signs in.

KEN: I think that we've referred to it as fancy type before?

JENN: Yes, fancy type! Does that mean you can never use display fonts? Absolutely not but it may mean that you want some of the information that you've set that way available in a secondary place, like a subheading.

Ken's reading Moby Dick right now.

KEN: Sorry.

JENN: So fonts that we see a little more frequently are easier for us to read.

KEN: This is an example of a typeface called Clearview Highway, which was designed by James Montalbano.

JENN: And Donald Meeker. Terminal Design is the company.

KEN: They wanted to develop a typeface to be used on highway signs. And really what they were trying to do is, there's this experience of halation that when we're driving at night and our headlights hit a sign and the sign is reflected, that the typography becomes blurry and harder to see.

JENN: And you'll notice the older you get, the more tired your eyes are and you start to see those halos around things; that's halation.

KEN: And so what they wanted to do, they wanted to design a typeface that could make reading easier while driving. So they developed this typeface called Clearview Highway. They tried it out in

a couple of different ways. Here's an example of some of the tests they ran at the Pennsylvania Highway Institute where they tried black text on a white background, because studies show that people like to read black text on a white background and it's more readable, as well as white text on a darker background.

JENN: I just want to jump in here for a second. One of the partners in this study, if we talk about collaboration and being inclusive, was 3M. 3M makes reflective tape right? So if you look at the green side, the reflective tape is making the type, and you see white is reflected. So your lights hit, it lights up.

KEN: And what they discovered was that while that may be more visible during the day, at night the halation that was created by the headlights hitting those gigantic reflected fields was almost blinding. It didn't work. So what they did to develop this typeface was they started with interstate design and – it's Highway Gothic.

JENN: You should totally read our book, it's in there.

KEN: You were totally reading it this morning.

It's Highway Gothic and they did an audit of that and what they discovered was that they couldn't really change the typeface too much because if they made the face bigger – if they increased the size of the letters or increased the point size to make it more readable or legible or visible – there would be an exorbitant amount of money spent on more material for the signs.

JENN: Like millions of dollars in the state of Pennsylvania alone.

KEN: It just wasn't practical. So what they had to do was make it more visible in the same space so they made the counters bigger. They made the x-height a little bit taller. They opened up the letter spacing a little bit.

JENN: So again, it was a design team that focused specifically on typography, a manufacturer who makes reflective tape and a state

highway track that worked together to come up with the best solution. How many of you have clients who care about their budgets? Right. So sometimes making it more legible isn't fiscally possible.

KEN: Or just by making it bigger. Making it bigger and bolder isn't the solution. The solution could be within the letterforms themselves.

JENN: And they've actually picked that up and through the United States now they're implementing that as a signage system.

KEN: What they found is that they can increase the visibility of it by eighteen per cent, which translated to, I think, two seconds more in drive time

JENN: You're making that up. I think it's 1.2. It's 45 miles/hour, which is like 70-something km/hr.

KEN: We were trying to translate that into kilometers and meters and we had no idea.

JENN: And then we couldn't figure out what temperature it was outside, it was really weird.

So moving on to readability. And honestly, you guys, legibility and readability, I always have to look back at the definitions because the words sound so the same. This is how I kind of remember it. Here's my loosely working - anything you do as print designers that you do as a character style has something to do with legibility likely and anything you do that's in paragraph style when you're setting up documents has more to do with readability. Because readability affects longer volumes, paragraphs, things like that.

KEN: That's a really nerdy way of remembering it.

JENN: Dude, they're design nerds too.

KEN: There's been kind of a resurgence of eye-tracking software and eye-tracking studies because of the Internet and because of the

way we've been trying to figure out how people look and skim and scan through information online. There's a lot of stuff that we can learn about typography from that as well. When we're reading a set of, a block of text – I know, they can still hear me though, I'm using my teacher voice. I keep having to look at the big screen. Those big dots are fixations. We have fixations, they kind of bounce along the text. The space between those fixations is called a saccade and the whole thing is called a scanpath. And we try to do that in one big, smooth motion. If you remember back to Typography 101 when you were in design school, your professor was probably trying to talk to you about having consistent grade values within blocks of texts and making sure the rags on the right hand side were appropriate and etcetera. And really what that was trying to do was enhance that speed of that scanpath through that group of text.

One of the things that we kind of noticed with some of the recommendations was that there was a recommendation of possibly using monospaced typefaces or typefaces that had equal amounts of space around all of the letters.

JENN: Is that bottom one making anyone a little bit twitchy?

KEN: The kerning between the P and the E is making it a little bit twitchy. It's bad.

And so we run into that with monospaced typefaces, that the kerning pairs are just, you know, they just kind of open them up and they create these weird gaps. When you see it in a block of text... look at that.

JENN: It creates those same rivers of white that justified text does. So here we are augmented rivers. But that's a monospaced text. Now, in Clear Print guidelines defense here, here's Garamond. That's a little tough to read on quick scan too because it's really tight so when they're saying use a monospaced font, they're saying we need some room to breathe to see those shapes. So take a look at this.

Ahh. You mean I can use my typeface friends if I'm smart about it? Just a little bit of tracking. And I think you have to look at every typeface. Every typeface is different and then I think the software we're using does things differently. I think that Quark did a better job with the tracking.

KEN: Don't say it.

JENN: I know but you know I'm InDesign's friend now. But I think you have to pay attention as you use different fonts. Here's Helvetica with that little bit of tracking. I think the thinner Helvetica gets, the tighter it reads and you have to give it a bit more room.

Paragraph alignment is a really simple thing right. One of the things is we read left to right and so, it's really hard for us to find that first line when something is set centre-axis. Doesn't mean you can't ever set centre-axis but boy, would it strain our eyes to read a bunch of text that way. Justified text, same thing. I've got those rivers of white created again and they really create this spiney-ness that really slows down my scanpath.

KEN: Flush right, you know, since we're accustomed to reading in Western-speaking countries, we start on the left and go to the right and we're always looking for the same spot on the left, pick that line up. When we use flush-right copy, again, it's something we don't see all the time so it becomes harder to read.

JENN: And again, it's a know-your audience-thing. What if you're working with someone whose reading things differently? Then you might consider how your paragraph alignment affects things.

This is another case study that's in our book and I don't know that we've got the greatest slide to show you here but this is a font called Lucerna. This is another example of this readability, legibility idea in use. A friend of ours named Brian Sooy in Cleveland, he's own Sooy + Co, was hired by a bible publisher and the bible publisher wanted to attract a thirty to fifty year old audience. They

wanted the text to be clearly readable on that aging eye and they wanted to save some money because their print production costs had gone through the roof. So what he was charged with was, make it easier for me to read, make it feel kind of historic, biblical in it's typesetting and make it so that I get the message and don't have to look through the typeface and save me a bunch of money. No problem, right?

KEN: Because they wanted to cut down on paper costs. They wanted to put the same amount of content in a smaller book with less pages.

JENN: But make it easier for me to see, right? So he did all of the same things we've been talking about. He ended up raising the axis height so that it was a little bit easier to see. He opened up some of the counters, even though at the same time, he was creating a slightly narrower letterforms. And then he did this thing where he thought, okay, seems like it should be a serif thing, right, I don't know it's the bible, it seems like it wants serif. Somehow that feels more historic. But he cut all the serifs off on one of the sides of the letterforms he was working with and started, on the right side, he shortened them. And so by doing that, he ended up saving a bunch of room. In the end, the book was ten per cent cheaper in paper costs and they had worked in twenty per cent more readers questions in the back so that people could use them for study groups. So it ended up saving millions of dollars for the company creating this and still reaching all those legibility and readability guidelines.

When it comes to legibility colour is another big thing that affects you. And I know that CNIB and their Clear Print guidelines have given some suggestions on that so just to augment on that. We know that one in twenty individuals have some sort of colour-vision deficiency and this seems to happen more frequently in white males. There's a really great website that we found when we were researching for the book called vischeck.com and [vischeck](http://vischeck.com)

has a simulator so you can upload any image that you're using and you can run it through their simulator and see how it's going to be viewed by people with different eyesight problems. We also learned when we were researching that the military tends to hire sharp shooters who are colour blind because they can see through camouflage better.

KEN: It's through pattern. They start to recognize things through pattern and not through colour.

JENN: So your eyes find the pattern, right? You may not be able to see those colour differentiations but your body finds a way to find other differentiators. So it's kind of interesting. If you know your audience may have more of these leanings or if you're designing public signage, such as airport signage, you need to think about how that would work for all sorts of people.

KEN: A real simple thing too, that you can do, is just on your laptop or on your Macintosh, you can just go to that accessibility guide in your system preferences and you can change your screen to grey scale. You go from looking at things in colour to looking at things in grey scale so you can look at value. And that's just a really simple tool that you can use.

JENN: Do me a favour right now, take a look at that middle row of type going horizontally. Squint your eyes at it. See how when you squint, you lose the type completely? If you put your monitor to grey scale and that's what happens to your design, you don't have enough value contrast. We think of colours in terms of hue a lot of the time but we should also be thinking of it in terms of value. At the top, the top horizontal line, that's trying to simulate (and I apologize, things alter a little bit when projected) simultaneous contrast. So when you take two opposites on a colour wheel and you put them in at the same value, they sort of vibrate, it drives my eyes crazy. If you want to agitate me, you know, if you're doing some teenage ad for, I don't know, t-shirts that have swear words on them,

agitate the heck out of me.

KEN: Cause that's what the kids like these days. T-shirts with swear words on them.

JENN: I'm old. But it's hard on our eyes, it really strains our eyes, so it's not the greatest thing for signage that has to get us to where we want to go. Likewise, if you don't have enough value contrast, as in that middle line, it makes it really difficult for us. It's straining our eyes in a different way that's really risking that people won't be able to see what you're talking about. So, at the bottom, sort of pulled from this ADA suggestion, they suggest a seventy per cent difference. They're not telling you yellow and blue necessarily, they don't care what colour pairings we're using, but they suggest a seventy per cent value contrast between the background and the typography.

KEN: Generally, if you look at all these usability studies, because a lot of this comes from user experience or sites of organizations such as the CNIB – you know, you read one study and then you read another study and it contradicts the study before. Generally, people have a tendency to like, or find reading dark text on a lighter background easier. But that doesn't necessarily mean that that is always the case because for example, pulling or walking up here today, there were these signs outside that said 'drop-off zone' that were attached to the building. The text is dark, its on a white background, the sign that they're on is the same colour as the pillar that they're on and it just disappears because there's not enough value contrast between the sign itself and the pillar its on. So, in a case like that, a darker sign so that it's more noticeable – darker sign, lighter text might be more appropriate.

JENN: Oops, I think I was supposed to have those arrows pointing throughout my smart conversation.

Okay so, that's the aesthetic end, that's the kind of stuff you learned

in design school. We were trying to figure out a little bit more about how people processed information so we could figure out how our audience was using things. So we studied communication principles and some cognitive principles as well so we're going to review some of those for you next, shortly.

The first one is the principle of least effort. You all do this. The principle of least effort says, regardless of expertise and your experience, users gravitate to the easiest and most familiar tools, right? Even if the resulting yield is poor. And this was a librarian doing this study and he was an angry librarian that was mad that no one liked libraries anymore so he was kind of bitching about the Internet and he was saying, 'even great researchers use the Internet all the time now,' which brings us to our next awesome visual example.

On the left is what our students think of. It's like we ask them to use a time machine if we ask them to go to a library.

KEN: Right, they have to drive 88.8 miles/hour there in a DeLorean.

JENN: But it's true, right? You go to what's the easiest for you. So knowing that, how can we translate that into some design knowledge? What can we do to deliver information to people via the routes that they're more likely to be comfortable with? If you're doing something that's targeted at octogenarians and you want to make sure it's accessible, spending a lot of time on a website might not be the best idea because they may not be as comfortable using the website and in that case, maybe a printed piece would be a better idea. Likewise, if you're trying to target teenagers, I think you'd absolutely have to have a web presence right now. So just thinking about artifacts might help.

KEN: It also reflects the way we think about typography. You know that Times New Roman is one of the most readable typefaces ever created...or maybe we just have a lot of exposure to it.

JENN: I also blame Microsoft for that.

KEN: The same is true for the way we talk about typography. You know, that flush left is a little bit more readable because that's how we're accustomed to seeing it. You know, if we follow these things that we're most accustomed to seeing instead of trying to change it, it might be easier for people to see.

JENN: The next is another literacy idea and it's this idea of semiotics; that we don't all speak the same language and increasingly society is getting more and more global and so symbols are something that were going to use. And today, I think you're really lucky - Mies, where are you? At the back. Okay, he is going to rock later on because he knows more about this than anyone I know. So we're going to cover this really briefly because he's going to do a much better job. But I wanted to talk to you a bit about semiotics: studying signs and symbols as elements of our language and identifying their meaning. We need to think about senders and receivers. We need to think about the context of how we're delivering this and we really need to think a lot about culture and that's where some ethnographic research can really help you out as a designer.

KEN: Because this idea of accessibility, we keep talking about making something so that everyone can see it and understand it, but I think that we also have some cultural things we need to think about as well. It's not just about vision or being hearing impaired or mobility impaired, but also about where you're from and who you are.

JENN: And so, when you talk about semiotics: icons, symbols and indexes are the way we talk about these things. Icons are very literal interpretations. Like I need a taxi somewhere and that looks like a car with a sign on it so I know what that is. If something's a little but harder for me to visualize, like biohazard, then we come up with things that are more abstract representations.

KEN: And that looks scary right? We want to stay away from something like that.

JENN: And Mies can tell us why biohazard means a driving wheel with a tribal tattoo on top. Likewise, it may be harder for you to know it's raining but you identify an umbrella as something you see in the rain, so perhaps that's a better usage than just a drop of water.

When we talk about signs and symbols and things like that, we're talking about denotations and connotations. Denotation is the primary culturally accepted meaning. So that may be the first thing everyone thinks of. But connotations are those additional connections that we have to it. And connotations really come from what our own personal backgrounds are and they change all the time. And that's something that I think, as designers, we have to stay on top of and we really have to start working at.

KEN: I actually think that's a really good point. As we're sitting here as a group, we're talking about developing guidelines and best practices, I think it's also important to understand that visual language, like spoken language and written language, evolves. And that what we perceive today as readable and legible and clear, may not have been true ten years ago or fifteen years ago and may not be true ten years from now. Things have to be open enough to allow for communications, and the way that we communicate, to change.

JENN: So, what's that?

AUDIENCE MEMBER: Pirates.

KEN: Pirates. Poison.

JENN: I think skull and crossbones originally meant death. Poison. When pirates had it on a flag it meant, I'm coming to rape and pillage you, not I will be a saucy guy that acts like Johnny Depp.

KEN: You think they're all really that charming?

JENN: Yeah, I don't think so. The guy even looks good with bad teeth.

That's Ken's tie, because he's a pirate-y kind of guy. And that's our daughter Lulu on the corner. We try and work her into all of our presentations. But that's her pirate hat. So when Lulu sees that symbol that means poison to you adults on a bottle of liquid, what do you think it means to a three year old? Pirate juice, exactly! So, is that still a really viable symbol for us to talk about if we need to let everyone know not to go there? And again, I don't know that I have an answer to it, I just want to start talking about it.

What's that? Mine looks like a rectangle. I bet Lulu has no idea what that is.

KEN: You know the original artifact has not been in production since 1983. My daughter will never know what that is. That's like a toaster with a banana on it. It's like, what the hell is that thing? Why is there a big hole in it?

JENN: I think, again, as designers, one of the things that we're custodians of is this visual language. What do we do to make sure we're still staying relevant and that we're communicating across barriers?

Finally some cognitive principles. I'm sorry for rushing through this, I think we've put way more slides in than we have time for.

KEN: I think we've already run over but no one is giving us the time sign so I think we're okay.

JENN: Back to this idea of Big A accessibility. I want everyone to be covered by this. And so one of the things we all need to think about is learning styles. And this comes from K through 12 education, but it's this idea that we all have different ways that we like to experience and interact with to remember and learn information. And every one of you is going to be a little different, no two users are exactly alike.

I can make some broad generalizations about the audience because you all raised your hands and said you were designers and so I'm

guessing a lot of you are visual learners. Like have you had to make a little sketch to yourself about how something would work? Has anyone ever made an illustrator diagram about how they were going to hang pictures on their wall?

KEN: It's okay. Solidarity.

JENN: Or organize your garden plan that way? So you're visual learners. If you need to physically do things to see how they go together you might be kinesthetic. I could never say that word right, so I'm not promising you I just did. But, if you mechanically like to take things apart. Have you ever met someone who can just take apart a lawn mower and put it back together no problem? That's because they're kinesthetic learners and they're good at that. They might not be great at sitting in a classroom and being spoken to by something. Most of education, at least when we went through school, and now things are changing a lot but, I think it was primarily auditory, verbal. A person stands up in front of you and lectures. There was no PowerPoint in my K through twelve experience. There was very little of it in my college experience and through grad school. We had slide projectors, damn it!

But I think now, we have the ability through lots of different kinds of media. And as designers, we should get to know our audiences and see if we can predict a little bit. And one of the things that was an example we found in researching was the food pyramid. In the United States, whatever government office is in charge of trying to make people thinner, found that...yeah I know right, good luck.

KEN: It's a big problem for us.

JENN: They, you know, put posters up in childrens' schools and talk about the food pyramid. What they found is that wasn't really sticking but now they made video games. And getting kids to interact with things helped in the learning process. And then the posters up on the wall, the teacher could refer to, probably aided that and dis-

cussions helped as well.

KEN: I think what's important for us, as designers, to understand is that if we generalize those kinds of learning styles, as in, if you can start touching on the end-user at each one of these points, you're going to create a rounder, richer, more memorable experience for them.

JENN: Ah, perception and discernment: Weber's law. Weber's law of just noticeable difference, I am going to totally use to my own benefit and I will give you that head's up right now, but this is a law about measuring your ability to notice a change in stimuli. So if I'm having you lift weights and I have you lift a five-pound weight and a six-pound weight, you may not notice a difference between the two. We may find for you the difference between a six-pound and an eight-pound is a noticeable difference and then that increment stays the same. It's like two pounds is what you notice.

KEN: It remains constant and it's been proven for lots of different kinds of sensory stimuli.

JENN: Hearing, you know, the levels of decibel changes for you to notice the changes in volume that happen, that sort of thing. So, if we apply this loosely to typography, I think because you work with type everyday and you're trained as typographers, you see all the subtle differences in Meta there. If I show those to my dad without telling him that they're different and I just show two of them next to each other, I think he'll have a very difficult time knowing what the heck I'm talking about. And I especially think if you look at Meta Book and Meta Medium, there's a really subtle change there. As a designer I like having the options of having the typeface that's got a lot of different weights and sizes, but if I'm trying to create a hierarchical structure of information, I want to figure out what that noticeable difference is and so generally, you can skip every other. Go from Thin to Book, Book to Bold to create the maximum contrast.

KEN: It can also apply to point sizes, it can also apply to leading changes, there's all sorts of ways you can manipulate that Weber's law, I'm just noticing for instance, to create typographic structures. And it also touches back on this idea of readability. The readability is really, the things that we do as information designers and graphic designers to manipulate content, the readability and structure, and hierarchical structures in typography is an important component of that.

JENN: And so I will use this and bastardize Weber's law to make my case. What am I looking at? Do you guys have Sesame Street in Canada? One of these things is not like the other.

KEN: What typefaces are these?

JENN: I still won't use Arial, you can't make me! I won't even let my daughter watch The Little Mermaid because of it. But, anyone who tells you to use Arial is probably suggesting you could also use Helvetica and so we probably can all get along if we figure out what it is we're really looking for. Look at the T. The T is always the dead give-away. The lower case T. And then I start looking at it and come up with all these reasons why I still hate Arial but honestly, I probably couldn't pick them out without comparing them like this.

Another thing that I think helps make it easier for your user to receive information is this idea called Miller's Magic Number. George Miller was a Harvard psychology professor working in the fifties, sixties probably and he came up with this whole idea.

KEN: He really wanted to know why is it that I can't remember phone numbers? And he just wanted to understand the limits of his own short-term memory.

JENN: And so what he came up with through lots and lots of studies and testing is that people could only really remember, in their short-term memory, seven chunks of information at a time, plus or minus two. So if you're thinking about designing a webpage, I think

that this can help you with navigation and stuff like that.

KEN: Or any kind of content. As we're organizing content.

JENN: So real quick, memorize that. Duh. Thank you Ladislav Sutnar. Ladislav Sutnar is the one who came up with those brackets around area codes. And all of a sudden, if I live by you and we exchange numbers, you don't even have to tell me the bracketed stuff because it just goes without saying that we're going to have the same ones. And memorizing it in those three chunks instead of memorizing all those numbers together is a whole lot easier. Then there's another trick that we can do. See we prepare when we go out of town. Mnemonics. So Roy G. Biv to remember the colours of the rainbow. Or I don't remember the one about the planets, because I was bad at it in school, but I know there's one of those mnemonic things to help you with that. Can you believe they dissed Pluto like that?

KEN: It's a dwarf planet now.

JENN: But when you think about navigation on the website and how many different tabs for your main navigation, maybe Miller's Magic Number may come in handy.

Okay, last topic we're going to cover is this idea of information overload, which you're probably at right about now. Information overload is something a number of different people are talking about and when we were researching I found that Alvin Toffler, this futurist came up with in the 1970's, and was point on. Check out Future Shock. You can find it at library sales for a quarter. But it's still really, really relevant.

KEN: It's has really, really bad cover design, that has this fancy type, computer generated, like it's coming from the future.

JENN: It's awesome. So it's this idea that we are trying to process so much information at once and we're overwhelmed now with so

many sources of information that we can't assimilate. And there's a guy in Texas, who I can't remember his name right now, he's a professor who studies this and he actually came up with the term 'map shock'. And so when I put that slide up, if I wouldn't talk too much and just listen to your guys, I might've heard you go, "ugh". And he's noticed that people actually make a sound when they're looking at too much information. It's the noise of overwhelmed-ment.

KEN: Alvin Toffler theorized that this would happen. There was a professor that's actually studying it and he's found that people's minds shut off momentarily, they stop thinking, and they try to acclimate themselves of the information.

JENN: This is the best map shock example I've ever found. This is from The New York Times. I have such a giant crush on The New York Times and the people who do design work there are awesome. They did this in 2007 but this is R. Kelly's hip-hop opera series, "Trapped in a Closet" and that marks out all the character relationships for you. Take some time at some point to go through that, it's pretty awesome.

But seriously, as designers, when would this really matter? Because after all, design isn't life or death. Or is it? So, heart attacks: one in five deaths in 2004. Bummer, I know. I just like to bring you down at the end.

KEN: I always love showing that slide because you can tell whose actually reading the presentation. So Phillips developed this defibrillator device. They wanted it to be set up in such a way that all you have to do is pull it out and turn it on, zap, and everything is okay. You didn't need training on it. You could just follow the pictograms and follow the buttons and save somebody's life.

JENN: And this is a place where information overload absolutely cannot happen to you. Imagine yourself in this scenario. You're at a high school basketball game and something happens to someone in

the stands. These are in public places.

KEN: Hockey game.

JENN: Hockey game! They're all over the place, right? You need to be able to act. You're probably terrified. It could be happening to a loved one, you're in panic mode and all of this adrenaline is running through your body. Do you have time to read the instruction manual?

KEN: No, you just need to act.

JENN: And so, they spent a great deal of time coming up with a really simple, three-step method. The last time we were here at DesignThinkers talking about this, we showed this and someone in the audience (and if you're here today, by all means, stand up and admit it) but he said he worked on the Phillips team that designed the guy, the icons, and he said he spent months working on the icons because of the cultural context and that in a lot of different cultures, it's not okay to show a human body naked. But this isn't going to work if you put it over your shirt and so we need to make sure you understand that we have to get down to your chest and so they spent a lot of time making the most neutral form and figure they could and still making it really easy for you to understand what we're acting on.

KEN: So that it wouldn't be offensive.

JENN: And so, here's one of those, "we are the champions my friend," Queen moments where you really could save someone's life with design. And accessibility means a whole lot more than a particular group's agenda. I think we need to think about everyone's needs and do our best to reach out as broadly as possible and to always think about audience.

Alright, I'm sure we ran way over our time so if you want to ask us a question, it's okay if you do it at lunch. Thank you.

LIONEL GADOURY: Thank you so much. That really was wonderful. We are running into lunch right now but if you don't mind, we can take a couple of questions and then maybe you can carry on conversations over your meal.

JENN: Anyone? Remember, we're really popular. Be nice.

AUDIENCE MEMBER: So what I'm hearing you say is that, that really making something accessible, of course always keeping in mind your audience, is about familiarity and setting some kind of standards and adhering to those. Am I right about that?

JENN: I think we should all be discussing best practices and that we want to have an umbrella of best practices so that you've got some movement and I think understanding the audience. And on some projects the audience is really, super broad and so you may be a little but more narrow, but if you know you have a specific target, you can probably work within that umbrella a little differently.

AUDIENCE MEMBER: Okay. You know, I'm just comparing from the first presentation to yours, which of course, makes all of us designers feel more comfortable that we have a bit of flexibility. Are there - like the nutrition guide, that's now become standardized on food packaging - is there a way to take your ADA and what we're hearing here today and coming up with a consistent standard?