TOUCHING ON TOUCHY SUBJECTS
Approaches to Combatting Stigmas

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Approaches to Combatting Stigmas

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Stigmas perpetuate negative attitudes held towards specific groups of people robbing them of agency and voice. This disempowerment contributes to low self-esteem, depressive symptoms, and an overall lower quality of life for those who are stigmatized. Although pervasive, stigmas should be considered problematic to progressive, heterogeneous societies because they aid in the creation of in-groups and out-groups. Things can become radicalized between groups leading to horrible atrocities when one group decides to eradicate the other. Conflicts over stigmas may present themselves in subtle, less hostile ways but people’s lives are negatively impacted regardless.

To combat a stigma, its accompanying stereotypes much be challenged. New, more accurate or nuanced mental models need to replace old offensive ones. But to get to a point where people are willing to learn and adopt a new mental model, work needs to be done to engage them in the topic. Simply broadcasting a new message of tolerance will not create lasting change for a critical mass. This won’t be enough to overturn an ingrained societal value. Instead, work needs to be done to create engaging and relevant information that presents a new mental model. Engagement must come before education because if the audience isn’t curious or interested in learning, the message will fall on deaf ears. This thesis focuses on the first steps in combatting stigmas—engagement and education—in an effort to establish a solid framework for the design of communication pieces that ultimately challenge the infrastructure of stigmas.
INTRODUCTION

Stigma is “the phenomenon whereby an individual with an attribute is deeply discredited by his/her society is rejected as a result of the attribute.”

Erving Goffman
What are stigmas and how do they function?

Erving Goffman in his seminal work *Stigma* describes a social stigma as “an attribute that is deeply discrediting.” Those “discrediting” attributes often lead to a heavy social burden for the stigmatized that can be experienced through disapproval, discrimination, loss of social status, rejection and dismissal. Goffman argues that societies establish categories for people and ways of behaving. He says, “The routines of social intercourse in established settings allow us to deal with anticipated others without special attention or thought....We lean on these anticipations that we have, transforming them into normative expectations, into righteously presented demands.” It is only when we come into contact with a person or situation that challenges these assumptions that we become aware of the demands we place on people and the tendency to label their character or social identity as tainted, other, or lesser.

Goffman’s work also identifies three actors within a social stigma: the own, the normal, and the wise. The own are those who are stigmatized and may provide support to others in coping with the stigma. The normals are those not personally affected by the stigma and who act differently towards the own, typically in a manner of social distance, discrimination and devaluation. The wise, like the normals, are also not personally affected by the stigma but are different from the normals because they accept and are sympathetic towards the stigmatized people.

Rachel Smith’s research is the first known empirical test of Goffman’s categories of people: the own (stigmatized), the wise (those who sympathize with the stigmatized), and the normals (stigmatizer). Smith’s findings uphold Goffman’s typology but split the wise into passive and active roles depending on their willingness to educate the stigmatizer and challenge stigmas.
It’s important to realize that the four actors identified by Goffman and Smith act within a larger societal context. Societies perpetuate stereotypes as a way to create groups of insiders and outsiders, a practice commonly observed among social species. Societies create and reinforce stigmas and stereotypes because they act as convenient mental shortcuts allowing us to anticipate how someone will act. Those who defy expectations can become stigmatized. The outsider’s social identity will be replaced with a “socialized, simplified, standardized image of the disgrace of a particular social group.” These actors are taking instructions from society on who to exclude, how to exclude them and why to exclude them. For this reason, the mental model of social stigma that I present adds the societal context that encompasses the practice of stigma.

Why should designers care about stigmas?

Looking for embedded social stigmas offers a new way to look at a design problem. For example, John Sullivan, a human resources consultant admits “in the H.R. world, applicants from Monster or other job boards carry a stigma.” Designers at Monster.com who are aware of this perception could work to understand why Human Resources believes Monster.com candidates are “Monster.ugly”. This stigma undermines the value of Monster.com and puts its users at a disadvantage. This presents an opportunity for designers at Monster.com to address or challenge the stigma and provide an alternative view. Microsoft’s “I’m a PC” campaign that followed Apple’s “I’m a Mac” campaign did just this. The Mac ads cast the PC as a boring, stiff guy who never works right. To combat the perception that PCs are for losers, Microsoft commissioned a series of ads focusing on creative individuals using PC technology in innovative and futuristic ways.

Luke Williams’ book *Disrupt: Think the Unthinkable to Spark Transformation* is heralded by entrepreneurs as a “five-step process for identifying disruptive business opportunities and successfully executing them.” Because business leaders struggle to “meaningfully differentiate themselves from everyone else who’s operating in the space,” Williams guides readers into examining the clichés that are present within their industry.
suggests that readers hunt for clichés as a tool for illuminating the spaces where disruption could happen just through a simple inversion of the clichés. Williams instructs readers to “identify the assumptions that seem to influence the way insiders (and often outsiders) think about an industry, segment, or category. In other words, what are the clichés—the widespread, hackneyed beliefs that govern the way people think about and do business in this particular space. If you pay attention, you’ll notice that clichés are everywhere.”

Stigmas operate in the same way as clichés and hunting for them can be a catalyst for new ideas. Designers who combat stigma will be able to bring not just innovative products and services to market, but will also reach previously ignored user groups and audience segments.

**Why did I look at one specific stigma deeply?**

The primary goal of my thesis project was to uncover generalizable knowledge for combatting stigmas that can be applied to any stigma. In order to discover design and communication strategies that are effective in combating stigmas, I found that I needed to first intensely study a single stigma. I set out to discover the roles design can play in combating a particular stigma and then considered how my discovery could be applied to other stigmas.

**What stigma did I research?**

I chose the stigma of Premenstrual Syndrome (PMS) as my subject for my yearlong thesis project because it presented many challenges and opportunities for research.

Premenstrual Syndrome (PMS) is a stigma that needs reframing because women continue to be shamed and dismissed when their actions appear to be influenced by hormones. When a woman is angry, emotional, hungry or cranky, it is common for someone to claim, “She is PMSing.” This labeling of a woman’s feelings as PMS is dismissive, rejecting, and
suggests that she is inferior. Being affected by hormones on a monthly basis implies that women should not be trusted with power and should not be allowed to make life or death decisions. The fear is that a hormonal woman will lose her grip on reality, throw rationality out the window and act upon her hormones in a disastrous way. These attitudes towards PMS can lead to the marginalization and disempowerment of women. Because women know that they are at risk for ridicule, they often conceal any outward indication of PMSing or menstruating.

The information available on the menstrual cycle is not particularly helpful in dispelling this myth. The period guides I reviewed hardly include anything more than a vague mention of what PMS is and what a woman can expect during that time. Science has yet to provide a solid understanding of the biomechanics for PMS but the current theory is that PMS is caused by the rapid decline of the levels of estrogen and progesterone that occur just before a woman's period begins.9

With the threat of social rejection looming and no complete information on PMS available, women are left to wonder if the stigma against women and their hormones is deserved. A woman might admit to herself that she does become irrationally angry at that time of the month, which can legitimize her belief that she shouldn’t be trusted with power and position because she has mood swings. In a worst case scenario, these beliefs may lead her to opt-out of full participation in her life and leaves her with a shaky sense of self-confidence and self esteem.

My research surveys have shown that women mentally divorce themselves from their menstrual cycle and refuse to engage with it beyond just recording, if anything at all, what day of the month the period began. If a woman is unaware of when her period is coming, she also is unaware of her PMS. By remaining ignorant of where she is within her cycle, she can deny any accusation that she is “PMSing” because she honestly doesn’t know if she is or not. If she did know she was PMSing and someone had called her out on her irrational behavior, she would in effect be confirming the stereotype and putting herself at risk for loss of social status, discrimination and dismissal.

*PMS is “a convenient catchall for women’s complaints, a way of discounting women’s anger – and their often legitimate concerns – by attributing their dissatisfaction to hormones.”*  
Karen Houpert
This disengagement observed between women and their menstrual cycle helps to perpetuate the stigma around PMS because it allows PMS to remain secretive, misunderstood, and shrouded in shame. PMS is unlike other stereotypes impacting women in that there's nearly a total void of artifacts having to do with confronting this stigma. As of yet, I have not found any communities to help women cope with PMS. Even the scientific community does not yet understand the biological underpinnings of PMS. These signs all point to a deeply ingrained stigma that our society is not willing to combat, yet.

**What is the current state of menstruation education?**

Currently, menstrual education materials are only encountered during two distinct phases in life. Learning occurs at the onset of menstruation called “menarche” and later in life when a woman wants to have a baby.

Girls who are approaching menarche get a dumbed down version of the menstrual cycle that treats the onset of menstruation as a hygienic crisis. These books offer a simplified mental model that focuses on feminine hygiene product usage, anatomy, and eventual pregnancy.

Later in life, if a woman struggles with infertility, she has guidebooks and materials dedicated to her needs. Fertility guides are numerous and present the menstrual cycle in great detail, giving the reader the knowledge necessary to observe her cycle and predict her fertility thus ensuring conception.

**THE SEX ED GAP**

Although I think it is appropriate for young girls to get a less detailed account of the menstrual cycle, the problem is that she will likely never encounter a more detailed version unless she struggles to conceive. This means that women between menarche and
motherhood are operating on a simplified version for most of their adult lives. There is nearly a complete void of relevant, engaging materials meant for this between audience. I call this void of education materials for those between menarche and motherhood the “Sex Ed Gap.”

An additional problem with the current state of menstrual education is that all the available resources take the form of a book or website. This is problematic because passive forms of media require a woman to be motivated to seek out this information. And even then, the information contained within focuses on anatomy and pregnancy, which are not necessarily relevant to the Sex Ed Gap audience.

Because of the Sex Ed Gap, women do not have accurate information on their cycle or their hormones. Men have even less information on the menstrual cycle than women. This creates a situation where adults are misinformed and unmotivated to become informed. Without engaging and relevant education materials, the stigma around menstruation and PMS is allowed to grow and thrive because nothing is challenging it.
The belief that a person who behaves in an irrational fashion is inhabited by demons has by no mens been abandoned in the United States at the beginning of the twenty-first century despite our emphasis on reason.

Gerhard Falk
What is the design opportunity?

How can communication strategies be designed to engage women in learning about stigmatized topics like menstruation and PMS and empower them to use that knowledge to inform their life?

How can communication strategies be designed to combat stigmas?

Scope

My project focused on discovering communication strategies that combat stigmas. Through my thesis investigation, I discovered that strategies must be highly engaging, educational and memorable to challenge existing mental models that support stigmatization. I did not design for behavior change because I realized that I first needed to learn the role communication design plays in helping the individual who is stigmatized. Thus my work is geared towards menstruating women of any age and aims to speak to them on a personal level.

A preferred future of PMS

Envisioning an immediate and extended future for women and society directed the course of my study.

In short term, the preferred state is populated with vibrant confident women whose mood swings don’t generate self-doubt or shame. Instead women know where they are within their cycle everyday and know how hormones will affect their thoughts and feelings. This self-knowledge would give women agency and insight into why they’re feeling the way they do. This gives a level of control over emotions and makes a comment like “You’re just PMSing” less frightening or shaming. Note, I am not suggesting that this knowledge will diminish the mood swings associated with specific times of the month. Instead I see design
as aiding self-awareness and self-care. If a woman knows when her PMS is going to arrive, she can anticipate her mood and plan accordingly. Knowing that her intense feelings will pass in a few days may help her react more appropriately and responsibly. It may inspire her to be kind to herself and cope effectively until her estrogen and progesterone levels begin to rise again. Her changes in behavior will likely be evident, which in turns, effects those her community.

An idealized future is constituted by an attitude of tolerance and understanding towards PMS. Women’s mood swings would be seen simply as a part of life, just temporary hormonal enhancement that deserves validation and sympathy. In the future I hope that the notion that mood swings were a reason for baring women from full participation would be seen in the same way we see Jim Crow Laws or opponents to women’s suffrage, with embarrassment, shame and a resolve to never return to those dark times.

How can I get women to this idealized future? Research shows that education alone doesn’t work. Without emotional resonance or memorable information, improvements from education efforts are short lived. The information is simply forgotten. Because of this, I have designed artifacts that are emotional, educational and memorable. I hypothesize that these three strategies—emotional engagement, education and making it stick—will combat stigmas.

Creating highly memorable information

Early in my review of literature and artifacts related to the topic of stigmas I discovered that the most successful efforts were empathetic, emotionally engaging, and educational. A good example of highly memorable information is a recent Scottish PSA on breast cancer awareness. In it, an older woman stands topless in front of the camera and holds large photos of other women’s breasts in front of her own. The photos show bare breasts with dimples, skin like oranges or turned-in nipples, all indications of breast cancer. To begin she says, “Hello Ladies. Now as you know breasts come in all shapes and sizes.” As she

Seeing that [women] are on the whole more emotional than men, their presence in political life will increase the bitterness of political life.”

David Dalrymple, 1894
says this she flips through the photos in her arms. Already she has engaged the audience by extending the greeting of “Hello Ladies” and using “you” in her introduction. Plus, it is visually arresting to see an old, half-naked lady holding up life-size photos of breasts. By showing photos of breasts with signs of cancer, viewers learn what to look out for in the mirror after a shower. This video generates awareness by making the information engaging, applicable and educational. This is the first step in any campaign, political movement or attempt at combatting stigma.

Pulling from a mass of literature reviews, I identified three works as seminal and used them to guide my investigation into creating engaging, memorable information. These readings provided user-centered design principles that foster engagement and educational strategies that make learning stick. By combining them I hoped to generate enough audience interest and awareness to begin to combat stigmas.

CREATE EMOTIONAL ENGAGEMENT

Donald Norman’s book *Emotional Design Why We Love (Or Hate) Everyday Things* heavily influenced my work in terms of creating appealing, engaging and relevant artifacts.

In it, he discusses three levels of emotional design: visceral, behavioral and reflective. Visceral design is the appeal of an object at a base emotional level. He says that humans are “exquisitely tuned to receive powerful emotional signals from the environment that get interpreted automatically at the visceral level. It can be thought of as a consistent gut reaction to an object’s beauty that carries across people and cultures. When visceral design is done well the response is, ‘I want it.’”

Behavioral design answers the question, “How will I use it?” This is where performance, function, and usability come into focus. Norman says, “the first step in good behavioral design is to understand just how people will use a product.”
Reflective design looks at the personal meaning assigned to an artifact. Does the artifact resonate with the person’s identity or personal memories? Does the artifact appeal to their self-image or does it repulse them? These are questions designers must consider when working on emotional design for their audience.

Norman’s framework helped me design artifacts that touch upon all three levels of emotional design to ensure engagement. I also used his framework to test engagement during the prototype-testing phase.

_**Donald Norman’s Framework for Emotional Design**_

**VISCERAL**
This level of design deals with the first glance and gut reaction to an artifact. To test this aspect of my design I asked users to order the six artifacts from favorite to least favorite and explain their preference.

**BEHAVIORAL**
Behavioral design looks at how the user imagines using the artifact and in what context.

**REFLECTIVE**
Reflective design looks at evoking meaning, emotion and memories in users. I asked users which artifacts resonated and why. Their answers revealed specific elements in the designs that spoke to their identity, preferences and existing schemas.
CREATE CONCRETE AND ACTIVE LEARNING MATERIALS
Bernice McCarthy’s 4MAT cycle was instrumental in highlighting the educational breakdown of existing menstrual cycle guides. McCarthy’s 4MAT cycle is a framework for how people perceive and process new information. Her cycle demonstrates four distinct stages of learning culminating in mastery of the new knowledge.

*McCarthy’s 4MAT Cycle of Learning*

Using the 4MAT cycle, I charted where existing education materials fall. They all fell within the passive and abstract quadrant, which partially indicates why women remain misinformed about their menstrual cycles. Learning from this quadrant can be hard to relate to and difficult to remember because it emphasizes facts and figures. This information is imparted to a passive audience who is supposed to receive the information from a more informed expert. This is in contrast to active learning where learners are participating in the construction of knowledge through participation and interaction. Because the existing resources for menstrual education were reportedly ineffective
The existing resources for learning about the menstrual cycle that I researched all exist within the passive and abstract quadrant of McCarthy’s 4MAT cycle. Because the information is presented in abstract and passive forms, students may find it hard to remember and irrelevant.

**MY ARTIFACTS**
Because the existing resources for menstrual education are found to be undesirable and ineffective, I knew my prototypes should be concrete. I was unsure whether passive or active prototypes would be more effective so I made some that rest in both quadrants.

**EXISTING ARTIFACTS**

**MY PROTOTYPES**

a. Your 5 Hormone Personalities Finger Puppets  
b. 28 Days of Panites  
c. PMSface.com  
d. As a Matter of Fact I am PMSing: A Memoir  
e. Ovulation Education in the Snow Video  
f. Fool Me Once Video
and unappealing, I hypothesized that in order to combat problems with current communication efforts, my prototypes should capitalize on the learning strengths of the concrete quadrants.

**MAKING IT STICK**

Chip and Dan Heath's book *Made to Stick: Why Some Ideas Thrive and Others Fail* describes the brain as a guessing machine. It looks for patterns. If you design something that fits the pattern, the brain can ignore it because it doesn’t present any new information. A way to get people’s attention is to break the pattern. Doing so makes the brain perk up and pay attention because it wants to add this new data into the guessing machine.

The guideline then for designers and strategists is to find the existing mental model and break it, twist it, invert it, do something to it that challenges the brain’s deeply ingrained pattern expectation. Opening those gaps in knowledge creates a powerful desire, like an itch, to fill the mind with the answer. This is the reason why we stay up late watching bad movies, because we’re dying to know who the murderer is, and if the couple ends up together. Creating or pointing out gaps in people’s knowledge is a powerful tool for getting attention and keeping it long enough to deliver new information.

Combatting stigma requires exactly this, to call the audience’s existing mental model into question, and give them a new, more accurate one that is engaging and memorable.

The authors present a framework for content that “sticks”, which they titled, the “SUCCES” model.

- Keep is SIMPLE.
- Use UNEXPECTED details.
- Use CONCRETE images and facts.
- Make sure the author is CREDIBLE.
- Draw on EMOTION.
- Tell a STORY.
APPROACH AND METHODS
What I Did

EXPLORATORY RESEARCH
In addition to the seminal readings cited, I engaged in exploratory research that informed the direction of my project. I conducted an online survey with sixty-six participants. I also reviewed existing menstrual education artifacts including books, websites, videos and brochures. From these activities I located the breakdown in education that allows the stigma around menstruation and PMS to persist.

Survey
In my survey, I asked questions about women’s attitudes and behaviors and quizzed them on period facts. Sample questions and responses are examined below. From this survey I gained an initial understanding of the audience’s knowledge on female anatomy and the menstrual cycle. I saw how confident they were in their existing knowledge. Finally, I explored their period tracking habits. What I found is that women do think it’s important to know about their cycle but aren’t very confident in their knowledge. Many do record when they get their period but that is all they pay attention to.

It’s important to be informed vs. I consider myself well informed
The vast majority of participants thought that being informed about the menstrual cycle and female anatomy was important. The reasons given concerned general health, avoiding pregnancy and a general responsibility to know and understand one’s own body. However, while they think it’s important, respondents reported feeling less confident about their own knowledge on the subject. This points to the fact that there is an audience who wants this information but the information that they’ve been exposed to hasn’t made them feel confident about the topic.
One outlier in the data that bears examination is in the response of women who answered the question “I consider myself well informed about how the menstrual cycle works biologically” and “I consider myself well informed about how my own menstrual cycle works.” While 65.5% of respondents consider themselves well informed about the menstrual cycle biologically, 20% more women considered themselves knowledgeable about their own menstrual cycle. Women consider themselves “informed” about an aspect of the cycle that is not biological.

<table>
<thead>
<tr>
<th>I consider myself well informed about...</th>
<th>agree/completely agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I consider myself well informed about my reproductive anatomy.</td>
<td>67.3%</td>
</tr>
<tr>
<td>I consider myself well informed about how the menstrual cycle works biologically.</td>
<td>65.5%</td>
</tr>
<tr>
<td>I consider myself well informed about my own menstrual cycle.</td>
<td>85.5%</td>
</tr>
</tbody>
</table>
Because of the limitations of the survey, I was not able to determine what they considered themselves informed about. However, I believe this indicates that women see many levels to understanding the menstrual cycle be it biological, functional or personal.

**Period tracking**

65.5% of respondents are recording the day they got their period so they can roughly predict when they can expect the next one. With so many women recording the first day of their period, I was surprised when 61% of women got the question on what constitutes “Day 1” of the menstrual cycle wrong or did not know.

Although women are recording the day their period begins, they are unaware that this is considered the first day of their menstrual cycle. This points to a functional, working knowledge of period tracking that is not based on rote facts.

Of those who are tracking their period, many are doing so in an ad hoc way. Some circle a day on a paper calendar. Others use period tracking apps on their phones or email themselves a code word. This indicates a tendency to keep the experience informal and personal. It also suggests a desire to be secretive or casual about period tracking. By using informal methods, women show an aversion to finding formal, normative solutions. This behavior of keeping the period secret and private perpetuates stigma because it prevents women from talking about it and removes agency from the experience.

In order to combat stigmas, people need access to clear, concise information that makes them question their existing mental models. From this survey I found that the information available is insufficient in educating women and does not help end the stigma around the menstrual cycle.

| The first day of a woman’s menstrual cycle begins when she starts her period. |
|-------------------------------|-----------------|
| True                          | 38.9%           |
| False                         | 53.7%           |
| Don’t know                    | 7.4%            |
LITERATURE / ARTIFACT REVIEW

My literature and artifact review involved an examination of the available materials on the menstrual cycle and PMS. I wanted to understand what is out there now and see why they aren’t working to educate women or combat stigma.

Encounters

The first problem with the existing literature is one of encounters. Women only receive menstrual cycle education at two points in her life, at menarche and when struggling with infertility.

Although there is information available to women, they have no reason to seek out more information. Unless a woman is motivated to learn more about her cycle, she will be living from the simplified explanations she got as a young girl. Additionally, she may have been embarrassed, scared and overwhelmed when this information was introduced which isn’t conducive to learning or retention. As she matures and enters into adulthood, a woman will be working with whatever bits and pieces of information she remembers from this early encounter and whatever truths or half-truths she collects along the way.

In many cases, it is only when a woman struggles with infertility that she will seek out the resources that teach her all the details of the menstrual cycle including the phases of the cycle, how to observe and predict ovulation, the effects of hormones on the mind and

Diagram of menstrual education encounters in a woman’s life. The Sex Ed Gap spans between her exposure as a young girl and as a woman who struggles with infertility.
body, and when conception is most likely. Although detailed cycle information is presented to women who want to conceive, it would be beneficial for all women to understand these aspects of their cycle. Doing so gives women the ability to avoid pregnancy, predict their period and have better awareness of how hormones affect mood and behavior throughout the entire cycle.

**Emphasis on irrelevant content: anatomy and pregnancy**

The current artifacts share common content. They put heavy emphasis on anatomy and eventual pregnancy. These two aspects are irrelevant to the everyday experience of modern women. A woman will never actually engage with her internal anatomy. She will never see her uterus or her ovaries so knowing what they look like isn’t useful or actionable information. And for most of their lives, women will be avoiding pregnancy yet the guidebooks focus on how babies are made, not on how they can be prevented.

**Passive/Abstract**

The existing menstrual guides fall into the passive/abstract quadrant of McCarthy’s 4MAT cycle. They are all heavily text-based and rely on a woman’s personal motivation to seek out this information. Because the information is irrelevant and the audience is not prompted to put the information into action, the learning is unlikely to be retained for long.

Without accurate and memorable information, the stigma surrounding PMS and menstruation remains unchallenged and unchanged. Until a new mental model of the menstrual cycle is presented in an appealing and memorable form, women are unlikely to see how re-learning the menstrual cycle benefits their lives. They may not connect the need to combat the stigma around menstruation as a gateway towards ending discrimination against women.

There is an opportunity to give women between menarche and motherhood a compelling reason to engage with and re-learn the menstrual cycle. Making the information relevant to women’s everyday lives will motivate them to encounter it again. But what are the most relevant aspects of the menstrual cycle to this audience? I used generative research methods to discover the aspects most relevant to my audience’s everyday experience.
Generative research

I used generative research methods to discover what aspects of the menstrual cycle are the most relevant to my audience. The focus on key information, both in form and content, acts as the carrot that gets their attention and nudges them forward. Without something to coax them into challenging their stereotypes, the audience will remain misinformed and disinterested in the topic. To find the carrot, I explored the gaps in women’s knowledge, their attitudes towards their periods versus PMS, and their unmet needs.

I conducted twelve non-traditional interviews with women aged 24-59. Instead of conducting question and answer sessions, I had participants take part in activities that I thought would do a better job of getting them to talk about this private and sensitive topic.

MAKE TOOLS
I gave participants a choice of drawing or creating a 3D model of the female reproductive anatomy. Upon completion, I had them explain how the menstrual cycle works. This helped reveal what women know, rather than what they think they know. Most had the basic anatomy correct but there were still many incorrect variations. No one was able to explain the menstrual cycle well. They expressed a realization they didn’t know the anatomy or the menstrual cycle as well as they thought they did.

This clearly shows that gaps exist in their knowledge. But unless a woman puts her knowledge to the test, she will never realize what she doesn’t know.
Card and Panty Sort
Participants sorted cards and matched them to a variety of panty styles (hipster, boy shorts, thong etc.). The cards had words on them like “horny”, “sexy”, “bleeding”, “everyday”, “safe”, “getting pregnant is likely”. In this exercise I was trying to see if there was a consistent connection between panty style and cycle phase. My plan was to visually represent the different phases of the menstrual cycle using panty styles in a future artifact. I hypothesized that this would provide women a relatable and concrete visualization since underwear is really where the menstrual cycle happens. Although no pattern emerged, women did connect the “everyday” card to cotton hipster panties, which I later used in an artifact.

Study participant sorts cards and panties.
**Letter Writing**

I had participants write two letters, one addressed to their period and one to their PMS. From this exercise I was looking for women's attitudes towards their periods and their PMS. What emerged was a desire for more predictability from both periods and PMS. Additionally, the attitude towards PMS was much more negative than towards the period. A level of frustration and hatred could be felt in nearly every letter to PMS.

I asked women to write letters to their periods and to their PMS. When I compared the letters to PMS were much more hateful and angry than those written to the period.
Diagram Review

I collected a variety of diagrams used in sex education materials such as health guides, period guides, textbooks, anatomy drawings, and tampon instructions. I organized them so that the diagrams showing similar topics or processes were grouped together. Participants looked at these collections of diagrams and told me which ones they had encountered in the past, which ones they found more informative, which one they were likely to learn from, which ones they found unappealing and why or why not. I was trying to understand what they had encountered and what they remembered.

Most of the diagrams were unfamiliar. The ones that had the most familiarity were anatomical cross sections seen in textbooks or in doctors’ offices. Their exposure to these diagrams was infrequent.
YES / NEVER
To directly test the visceral appeal of existing books on the menstrual cycle, I developed a research method that I call “yes / never”. I gave participants two post-it notes: one had “yes” written on it, the other “never.” I placed five books on a table in front of participants. They were asked to place their “yes” post-it note on the book that they would consider picking up and looking at. Their “never” post-it was to go on the book that they would never ever pick up or even touch. I instructed them to make this decision based on looking at the book covers only. By not allowing them to pick up the books or flip through the content, participants were forced to answer based on their gut reaction, which is the crux of visceral design.

I carefully choose the following five books to test. In terms of emotional design as determined my Norman’s framework, I hypothesized that these would be more viscerally appealing to my audience than the others I’d reviewed because they were approachable in style and language. Below I describe the covers, titles and subtitles and how they help generate a positive visceral reaction.

These five guides were selected for the Yes / Never exercise.
28 Days: What Your Cycle Reveals About Your Life, Mood and Potential by Gabrielle Lichterman has a friendly cover. It features flirty, curvy illustrations and uses funky fonts. The subtitle, What Your Cycle Reveals About Your Life, Mood and Potential makes a connection with the audience by using you-centered language. It comes across as relevant to the audience’s life and mood swings.

What’s Up Down There? Questions You’d Only Ask Your Gynecologist if She Was Your Best Friend by Lissa Rankin, MD is a Q&A paperback. The pink and yellow vector illustration on the cover features an hourglass figure along with an image of a hand mirror placed over the groin area. This graphic gives the book cover a subtle feel while still conveying the book’s content. The title speaks directly to the audience by using you-centered language. This gives the reader the sense that the book will be particularly relevant to her and answer her burning questions that she’d only feel comfortable asking a friend.

The Period Book (Everything You Don’t Want to Ask, But Need to Know) by Karen Gravelle and Jennifer Gravelle is a thin, illustrated guidebook. The cover also uses flirty, curvy illustrations and funky fonts similar to the one used on Gabrielle Lichterman’s 28 Days. Again, the subtitle talks directly to the audience saying the book contains Everything You Don’t Want to Ask, But Need to Know.

Taking Charge of Your Fertility: The Definitive Guide to Natural Birth Control, Pregnancy Achievement and Reproductive Health by Toni Weschler, MPH is a five-hundred-page fertility guide. Its cover has pink watercolor flowers. I suspect that the size of this guide will be a deterrent for women who aren’t trying to get pregnant. Although the subtitle says that the book contains information on natural birth control and reproductive health, the emphasis of the title is on the word “fertility”. Women who are trying to get pregnant may welcome this tome into their libraries. Again, the title uses you-centered language. Taking Charge of Your Fertility implies that you aren’t currently in charge of it and this guide will show you how.
Our Bodies, Ourselves: A Book by and for Women by The Boston Women's Health Collective is a text-book-sized hardback. It is the only guide among those I’ve selected to use a photo on the cover. The photo shows women holding up protest signs. This feminist volume on all things women's health uses an extremely large font that nearly covers the front of the book. The saturated purple background color along with the large font stand in contrast to the subtle, feminine, and pastel designs seen on the other guides. I suspect that this cover will be a strong deterrent for women who don’t self-identify as feminist. Our Bodies Ourselves is the only guide to use first person plural language i.e. “our bodies” versus the second person singular form of “you” and “your”. Moving from you-centered language to us-centered language is a strategic way to communicate that the content does not come from an expert who is above the reader. This guidebook aims to empower women. It is not written by a doctor who imparts the knowledge that she thinks the audience needs to know. Instead it is written By and For Women as said in the subtitle. It is a collection of what regular women think other regular women should know about their health. In this way, the guide demonstrates that it is non-hierarchical and collaborative, which are two aspects of knowledge that are central to feminist philosophy.

The results from this activity were useful in teasing out the graphic design elements and content strategies that contribute to an artifact’s attractiveness.

Six out of ten women polled indicated that they would never pick up Our Bodies, Ourselves mainly because they felt the cover was “screaming” at them. They found the girth of both Our Bodies, Ourselves and Taking Charge of Your Fertility intimidating. Half of the ten women polled said they would pick up 28 Days because the book was small and looked like something interesting that they could flip through and quickly learn from. The three smaller books that feature pastel colors and you-centered titles fared better overall. I used these finding when designing the cover for my memoir prototype.
SYNTHESIS
My generative research findings heavily influenced the direction of my communication pieces. I realized that to resonate with my audience, I had to abandon anatomy-centered content and focus on how hormones affect the physical, mental and emotional self.

The heavy emphasis on anatomy in menstrual education simply isn’t effective. Women don’t remember it and it isn’t relevant to their lives. Knowing where the cervix is doesn’t help a woman understand why she is suddenly so moody. Being able to locate her ovaries does nothing to keep her from being surprised to find that she’s bleed through and ruined her pants. What is relevant to women is information on how hormones affect mood and how she can predict her period.

For my thesis, I focused on the role communication design plays in combatting stigmas and did not make pieces that involved behavior change.

My goal was to design artifacts with varied approaches to engagement and learning that aimed to challenge existing knowledge about menstruation and PMS. I worked to create new, more accurate or nuanced mental models of the menstrual cycle to replace the irrelevant and incomplete ones. I aimed to pique my audience’s curiosity by providing information that they’ve probably never encountered before or that contradicted what they already knew. I wanted to show how re-learning the menstrual cycle could improve their lives through greater hormone awareness, period predictability and pregnancy avoidance.
PROTOTYPES
Learning objective

I wanted to learn what would engage women in re-learning the menstrual cycle and what artifacts would help them learn and retain new information about their periods. I hypothesized that success in all three areas—engagement, learning and making it stick—would indicate strategies for combatting stigmas.

To do this I created six prototypes. Two were physical artifacts, two were videos, one was a book and the other a website. Making six prototypes allowed me to test the efficacy of a wide range of forms and helped me determine how the design influences the dismantling of stigmas. Since there are so few artifacts on menstrual education beyond books, videos or websites, the field for experimental form was wide open. I also knew that to make a lasting impact, the artifacts needed to connect with the audience on an emotional level. For this I used Donald Norman’s three levels for emotional design for guidance.

As stated earlier, I only made concrete artifacts because the existing artifacts all reside in McCarthy’s abstract quadrants and they were found to be ineffective. I also wanted to test the difference between passive and active artifacts to see how the style of learning influenced engagement and retention.

I used the Made to Stick methods because they are proven strategies for getting the audience’s attention and keeping it.

Study protocol

Nine participants (seven women, two men) participated in a quick review my six prototypes, which is known as speed dating. During the session, I briefly presented each artifact and then asked the participant to tell me which one was their favorite and why. I followed with a list of question that examined engagement, learning and feelings of shame and embarrassment. Then I asked what their next favorite artifact was and asked the same set of questions until all six pieces were discussed.
Upon completion of the speed dating portion, I asked them questions about an imagined context of use i.e. which artifact they wish they had now in their life, which one they wish they had as a girl learning about menarche for the first time and which one they hope they have when they need to teach their own daughter, niece or little cousin about menstruation. This gave me a sense of which one they thought was engaging, educational and potentially useful in various points of their lives.

To measure engagement, I used Donald Norman's framework for emotional design. I asked participants for their reactions to each artifact’s visceral, behavioral and reflective design elements. Stating that one artifact was their favorite suggested it was appealing on a visceral level. When participants described how they imagined using the artifact, I could draw conclusions about the behavioral design of the piece. I followed with questions about particular aspects that were appealing or repulsive to them based on their own identities or memories. This would indicate the perception of reflective design elements.

To test the educational aspects, I used McCarthy’s 4MAT cycle. Because all my artifacts resided in the concrete portion, I asked participants how they felt about the passive versus active artifacts. For example, were the active artifacts that needed interaction intimidating? Was it more comfortable to sit back and watch a video passively?

I measured the staying power of my artifacts by giving participants a follow up survey seven days after the speed dating session. They filled out an online survey and answered four questions:

Which artifact did you tell someone about? Who did you tell and why?
Which artifact sticks out in your memory? Why?
Which artifact made you think differently about menstrual cycles and PMS? Why?
Which artifact made you act differently towards your menstrual cycles and PMS? Why?
Design descriptions

28 Days of Panties

This communication artifact features 28 pairs of paper panties—each one represents a day of the menstrual cycle. Every panty is labeled on the sides with the day of the cycle and a description of expected symptoms and the biological processes happening that day. The 28 refers to the near universal use of 28 days as the length of a normal menstrual cycle. New data reveals that cycle lengths of 21–35 days are now considered normal but I wanted to stick with the convention of 28 days to ground the artifact in an existing mental model.

I used color and pattern to indicate the different phases of the cycle and the changes within the phases. For example, red polka dots symbolize the blood of menstruation and the dots get smaller in size as viewers move from day 1 to day 6. This represents the flow of blood that goes from heavy to light. Stripes in pastel baby colors show the fertile phase in the cycle. The three days during ovulation features crisscrossed stripes to show a greater probability of conception. In the second half of the cycle, a white to black gradient indicates one’s plummeting mood on account of declining estrogen and progesterone. Each panty is on a hanger and hung on a chrome spiral garment rack that affords the idea of a continuous cycle but makes the whole set easier to take in at one glance. I used clothing size markers to section off different phases of the cycle. A handout showing the panties in a linear orientation accompanied the prototype.
The accompanying handout to the 28 Days of Panties display.

<table>
<thead>
<tr>
<th>PERIOD</th>
<th>DAY 1-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPWARD</td>
<td>DAY 6-8</td>
</tr>
<tr>
<td>FERTILE</td>
<td>DAY 9-13</td>
</tr>
<tr>
<td>SUPER FERTILE</td>
<td>DAY 14-16</td>
</tr>
<tr>
<td>FERTILE</td>
<td>DAY 17-19</td>
</tr>
<tr>
<td>DOWNWARD</td>
<td>DAY 18-25</td>
</tr>
<tr>
<td>PMS</td>
<td>DAY 26-28</td>
</tr>
</tbody>
</table>

The fertile phase of the cycle is indicated with pastel baby colors.

Garment tags section off the phases of the menstrual cycle.
The finger puppets take their inspiration from the fact that estrogen fluctuates during the menstrual cycle in a pattern that roughly mimics the outline of the right hand when the thumb is extended. Estrogen is the hormone that’s responsible for changing moods throughout the cycle. I have created five characters that show how the fluctuations in estrogen manifest in emotion and mood. Starting from the left, the characters are:

MESSY (thumb) When the period begins, estrogen is low. Messy has red hair and a red dress to symbolize bleeding.

HAPPY (index finger) Over week 1 and 2, estrogen begins to climb. As it does, so do mood, outlook and productivity. Happy has a bright yellow and pink outfit to show her optimism. Her hair is in a ponytail to show she is busy working and wants to keep her hair out of her face. The glasses show that she is smart and productive.

Horny (middle finger) Estrogen reaches its peak around day 14. This coincides with ovulation and peak fertility, which means women will be more interested in sex at this time because they are at their most fertile. Horny is in a leopard print dress and is showing off her cleavage to express her excitability.

SLEEPY (ring finger) During week 3, estrogen begins to plunge. Lowered levels of estrogen mean women feel more withdrawn, quiet and prefer staying at home and resting. Sleepy is in her pajamas and can barely keep her eyes open as she lies on her pillow.

CRABBY (pinkie) During week 4 estrogen rapidly plummets taking mood down with it. Women in this phase are often grumpy, hungry, emotional and irritable. Crabby shows that she is in a foul mood with her slanted, angry eyes, while her pointy black cape tells others to stay away.

I made the finger puppets using a knit glove, felt, googly eyes and embroidery thread. Keeping the form soft and crafty made it reminiscent of girlhood, which I hoped would delight the audience and make them feel comfortable learning from this artifact.
This video aims to motivate women to re-learn the menstrual cycle by highlighting that being fooled by PMS over and over again is foolish. I’m pointing to the fact that the current state, being a foolish girl is negative, and that a new identity, the clever girl, is a better way to be.

To make this video I used rubber stamps to stamp out the message in a stop-motion piece lit with warm, incandescent light. This gave it a very intimate almost I’m-going-to-tell-you-a-secret feel. I used a brown paper bag as a backdrop to emphasize the homemade, approachable feel. Within the video, I animated two comic strips that tell the story of how PMS fools women again and again, month after month, year after year, decade after decade. In the comics I used my own face and distorted it into caricatures to express extreme moods felt during PMS. By using my own hands to stamp, my own image in the comics and words like “us”, “our” and “we” I communicate to the audience that I am one of them. As a fellow PMS sufferer I have more credibility as a speaker. Although I am reinforcing the stereotype that women with PMS become irrational and emotional, I show that women are not alone with their PMS and I offer a way to cope with PMS by learning to predict the menstrual cycle.

This video can be found at http://www.youtube.com/watch?feature=player_embedded&v=GnAitd6hulY
Things were going great...

What's wrong baby?

Eww! Don’t touch me! Your hands are sweaty!

What the HECK is her problem?

but then...

Why are you being so distant today? You can tell me. I’m listening.

Oh, and I got my period today.

I am the worst for how I acted yesterday.

Women are crazy.

The next day...

...PMS fooled them again.
OVULATION EDUCATION IN THE SNOW VIDEO

I created an educational video in an unusual location, out in the snow. I created an oversized uterus out of snow and used real eggs to explain what ovulation is. I demonstrated how the egg moves from the ovary to the fallopian tube after it bursts out of the follicle/snowball. I explain the outward signs for ovulation that women can observe in their bodies and what the mucus in their panties will look like. By using concrete physical props, viewers can easily picture what is happening anatomically during their cycle. Using the snow as a demonstration tool gives the video a playful feel, which may disarm the audience or make them think of playing in the snow as a kid. I talk directly into the camera and use a candid tone to communicate that I am an authority on the topic and I am not shy about telling the audience the truth.

This video can be watched at http://www.youtube.com/watch?v=S8EadnpeTHM
This prototype reflects a hypothesis that women need a place to express themselves and connect over their struggles with PMS. To interact with the site they would create a caricature of themselves showing what they’re like when they’re experiencing PMS. They would then anonymously upload their picture and a vignette of what happens when they’re PMSing. Women who don’t want to upload a picture could just browse the photos and stories and give a “witness” to the pictures to which they relate.

When PMSing, a woman does sort of become a caricature of herself. This website allows women to express how they feel and see that others feel the same way. Creating a community for those who are stigmatized is essential to find support and learn to cope.
AS A MATTER OF FACT I AM PMSING: A MEMOIR

Taking a cue from Fredrick Douglass’s *Narrative of the Life of Frederick Douglass: An American Slave* and *The Diary of Anne Frank* I thought that making a first-person narrative written by someone from the stigmatized group warranted exploration as a stigma combatting method. I created a book cover for a memoir called *As a Matter of Fact I AM PMSing: A Memoir of Mood, Mucus and Math* by Wilma MacGregor, a non-existent author. The back cover described the book’s fictitious content including a candid account of what it’s like to have PMS and how the author discovered period tracking as a way to cope with PMS. I chose a small hardback book that fits nicely into one’s hands as the form for this dust jacket prototype because I had learned from my “yes / never” generative research activity that smaller books are more appealing than large ones. I also used pastel colors and a decorative font because they generated a better response among my study participants.
### Prototype Analysis

<table>
<thead>
<tr>
<th>Emotional Design</th>
<th>28 Days of Panties</th>
<th>Finger Puppets</th>
<th>Fool Me Once video</th>
<th>Ovulation in the snow video</th>
<th>PMSface.com</th>
<th>Memoir</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visceral</td>
<td>V</td>
<td>V</td>
<td>V</td>
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<td>Behavioral</td>
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<td>Reflective</td>
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#### 4MAT Quadrants

<table>
<thead>
<tr>
<th>concrete active</th>
<th>concrete passive</th>
</tr>
</thead>
<tbody>
<tr>
<td>abstract active</td>
<td>abstract passive</td>
</tr>
</tbody>
</table>

#### SUCCES Method

- **Keep is SIMPLE.**
- **Use UNEXPECTED details.**
- **Use CONCRETE images and facts.**
- **Use a CREDIBLE speaker.**
- **Draw on EMOTION.**
- **Tell a STORY.**

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>SIMPLE UNEXPECTED CONCRETE EMOTION</td>
<td>SIMPLE UNEXPECTED CONCRETE EMOTION</td>
<td>UNEXPECTED CONCRETE CREDIBLE EMOTION STORY</td>
<td>UNEXPECTED CONCRETE CREDIBLE EMOTION STORY</td>
<td>SIMPLE UNEXPECTED CONCRETE CREDIBLE EMOTION STORY</td>
<td>CREDIBLE EMOTION STORY</td>
</tr>
</tbody>
</table>
OUTCOMES
28 Days of Panties

EMOTIONAL DESIGN
The panty rack’s primary visceral appeal was in its spiral rack form. The sweeping shape led the eye through the entire artifact. The rack also piqued people’s curiosity and they approached it because they thought it looked interesting. Other than the calendar on a birth control package, this was the only visualization of the menstrual cycle participants had seen, ever.

Using paper panties delighted participants and reflected their experience of women wearing different panties depending on mood and occasion. This was seen in responses from men and women.

Behaviorally, people were unsure where they expected to encounter this artifact. Museums, clinics or health classes were suggested. Users found the day-by-day numbering system on the panties helpful. They tended to read each one. Using a clothing rack also afforded a familiar form of interaction. People know how to shop and how to look through a garment rack.

Four out of nine participants said they wished they had the rack when they were younger.

LEARNING
As I observed people looking at or interacting with the prototype, I realized that having levels of interaction, from gazing at to touching, was important. People did not have to go up close to the artifact and touch it to learn something. Learning could happen at a distance if that’s all they were comfortable with. A simple gaze would show that there are many phases and changes within one menstrual cycle. This by itself I take as a victory because it challenges existing mental models. For example, I encountered one woman who didn’t see why I had 28 pairs of panties since the period only lasts six days. She never learned that the period is a 28 day cycle. Others felt comfortable getting closer and reading each label but still didn’t touch anything. Some took the initiative to touch the panties.
and look at them closer but many people needed encouragement or asked permission to do so. This implies that an active artifact should account for portions of the audience who will appreciate remaining passive. By designing for both passive and active learning, communication designers will reach a wider audience that will include the normal, wise and own segments.

**Making it Stick**

This artifact used panties as a simple, familiar and concrete representation for the menstrual cycle. Displaying paper panties on a garment rack to explain the menstrual cycle was found to be unexpected and compelling.

The rack of panties was by far the most memorable artifact. Five out of eight people told someone else about it and seven out of eight said it was memorable. Four participants credit this artifact with making them think differently about periods and three said it made them act differently towards their own cycle. Previously they were unaware of all the changes and fluctuations going on all the time in the body.
Fool Me Once video

EMOTIONAL DESIGN
People enjoyed the polished visuals used in this video making it the overall second favorite. They liked the stamping done by hand and the warm vignette lighting that gave it an intimate almost I’m-going-to-tell-you-a-secret feel. It felt personal and relatable to the audience.

Behaviorally they could imagine sharing this video through social media by posting it on a friend’s Facebook wall who has PMS or forwarding it through email. They did not imagine putting it on their own Facebook wall.

The storylines within the comic strips reflected aspects of viewers’ real lives. The emotional and relationship consequences that come with PMS resonated with them. They were also very surprised to learn that women go through 400 menstrual cycles in their lifetime. This fact made a light bulb go off in their heads and got them thinking about how they might want to change their experience with PMS since it occurs for a long time.

LEARNING
Although videos are often viewed passively, the rhetorical argument in this video proved strong enough to make a lasting impact in the minds of viewers as described below.

MAKING IT STICK
The brain processes and stores information well, when receiving it in story form. My comics visually and concisely laid out the story of getting fooled by PMS. Using stories and pointing out the unexpected concrete fact that women get their periods 400 times aided in long term memory making. Using my own face and first person plural language such as “we”, “us”, and “our” indicated that I share the audience’s struggle and am a credible speaker. Together these sticky strategies helped four participants begin to think differently about periods and two individuals were inspired enough to act differently towards their periods.

This video tackles PMS directly, deals with the emotional and relationship consequences of PMS, and presents it in a way that says Hey it’s universal so build empathy for self and others. There’s an educational message to it saying you should know what time in the cycle you’re at, that it’s part of your personal responsibility and knowing it can help you compensate for it like warning people before hand and they’ll understand better.

Study Participant

Finger Puppets

Viewers were surprised to learn that a woman has about 400 periods during her lifetime.
**EMOTIONAL DESIGN**

The strongest emotional design aspect of the finger puppets was at the behavioral level. People imagined using this artifact to teach girls about how their hormones work. Because finger puppets are traditionally marketed towards children and the materials used are common in kids' crafts, it makes sense that people imagined using this with kids. Six out of nine testers want this artifact to be available when they have to teach a young lady about the menstrual cycle. The puppets were the third most favorite artifacts out of the six.

I prompted participants to imagine how they would use the artifact if they owned it. Many imagined having it displayed in a bedroom or bathroom serving as a reminder to think about where they are in their cycle and how they’re feeling.

Viscerally people found the puppets cute and entertaining. There were comments remembering fond memories of playing with puppets, which speaks to the reflective design elements where personal memories are evoked.

**LEARNING**

Although I meant this artifact to be worn by the participant, they didn’t tend to put it on and preferred to look at it in its informational sleeve. Happily, this artifact works passively and actively, which helps it appeal a wider audience.

**MAKING IT STICK**

The finger puppets use many methods borrowed from Made To Stick’s SUCCES method including a simple message of five different hormone personalities, an unexpected form for menstrual education, and emotional characters that help tell the story of a single menstrual cycle.

Five out of the eight people who completed the follow up survey said that they told someone about the puppets and four people said the puppets stick out in their memory. Three respondents reported that the puppets made them think differently about their own period.

*I had never thought of [my cycle] as something that’s happening all the time.*

*Study Participant*

*I remember that the finger puppets tell me how my emotions might change throughout the month. The finger puppets stick out because they were really cute and fun.*

*Study Participant*
PMSface.com

EMOTIONAL DESIGN
PMSface.com uses the format of a social photo sharing website. As such, this piece’s strongest emotional design elements rests in its behavioral design and how people would use the site. People easily imagined themselves browsing the photos and the stories like they do on Reddit or Instagram. However, users did not imagine creating a PMS caricature and uploading it to the site. As one women put it, “I can barely stand to have an unflattering picture of myself on Facebook let alone post a distorted image of myself on a public site that labels me as having PMS.” Clearly the idea of creating a PMS caricature did not create the cathartic experience I hoped it would and instead repulsed the audience.

They preferred to stay in the passive roll of voyeur rather than be a participant in the social site. This poses an interesting problem. The audience appreciates that other people are willing to share photos and stories but don’t want to share anything themselves. If everyone feels this way, the site will never go anywhere because no one is willing to contribute content.

Viscerally, the photos weren’t as appealing as the short stories that accompanied them. People said they weren’t that interested in looking at messed up faces.

LEARNING
Although this artifact allowed for both passive and active interactions, people preferred to remain passive voyeurs instead of being active participants. When asked if they would click to give a “witness” to other people’s photos they said “no” mainly because they wanted to remain anonymous.
Only two people said that they told someone else about PMSface.com. The site stuck out in the mind of one respondent and it made her think differently about PMS because she now saw that it is normal and universal.

Ovulation Education Video

EMOTIONAL DESIGN
No one selected this demonstration video as his or her favorite artifact. It was unsophisticated and described as “low rent” and “bootleg”. This artifact misses out on a visceral appeal.

But people saw its usefulness as a matter of fact, unashamed explanation of ovulation and cervical mucus. This was seen as helpful to young people who need this information given to them straight with no beating around the bush. A few respondents said they could imagine this as a web series for young people to learn from. They found it more educational and scientific than the Fool Me Once video.

Touching raw eggs in the demonstration of mucus was found to be repulsive by two participants. They felt it was unsanitary and represented an “unholy mixture”. The only appealing aspect of the snow was that it reminded viewers of playing in the snow as a child. Otherwise it was seen as a very odd, but humorous choice to use snow for this demonstration video.

LEARNING
People were comfortable with this video as a passive artifact. It fit with their mental model of how sex education is distributed. Having an expert speaker demonstrate things and label anatomical structures with a thin line along with text is a common form for education and was accepted as a valid communication strategy.

MAKING IT STICK
Although the snow video was the second to least favorite, it was more memorable than
PMSface.com, the memoir or the Fool Me Once video. Using snow and real eggs to
demonstrate ovulation is certainly unexpected and gives a concrete visualization. It was
also selected as an artifact that would be useful in teaching the menstrual cycle to young
people. Still, the video was a rough cut making it less viscerally appealing.

**Memoir**

**EMOTIONAL DESIGN**
The memoir was by far the least favorite artifact, viscerally, behaviorally and reflectively.
People were turned off by the title. They felt that by reading the book, others would assume
they were currently PMSing. Holding the book where the most visible part read, “I am
PMSing” translated into broadcasting their current state to others. I find this interesting
considering the success of the Dummies series or The Idiot’s Guide books, the difference
being that my title was in first person. Clearly, having the title in first-person is repulsive
to people at a reflective level. People imagined the book to be a long complaining tirade,
which did not appeal to them on any level.

Suggestions were made that if the author were a famous comedienne then they’d be more
likely to pick it up because they would know it would be entertaining. They only imagined
using the book secretly if they were looking for guidance for dealing with PMS.

**LEARNING**
Although this artifact is passive and requires minimal engagement of the reader, the title
was so repulsive that almost no one could imagine even picking the book up let alone
reading it.

**MAKING IT STICK**
The memoir only stuck with one person enough that she told someone else about it.

*I wouldn’t go and read it publically and wouldn’t pick it up. Maybe I would order it
on Amazon – people don’t like being seen in the self-help section of the bookstore.*

*Study Participant*
The stigma busting work of Patrick Corrigan

After I completed prototype testing I discovered the work of Patrick Corrigan, a psychiatrist working on combatting the stigma surrounding mental illness. His work provided an additional level of analysis for my thesis work, which I discuss below.

EDUCATION, CONTACT AND PROTEST

Patrick Corrigan’s work seeks to change the public’s negative stereotypes held towards those with severe mental illness. His research has looked at three strategies for combatting stigma: education, protest and contact. Education works to replace false notions with factual ones. While easy to package and deliver, Corrigan has found, “the effects of education are small and tend to wash out altogether in a week or two.”

Protest is a method for punishing discrimination and demanding a new way of acting. Not only does protest not work as an attitude changer but actually makes attitudes worse.

Contact, however, is an effective tool for combating stigma. In particular, contact with those who are average citizens struggling with mental illness led to significant changes in attitudes and behavior that were maintained until a month later. The success of contact with normal people contrasts with two other types of contact that Corrigan studied. Contact with famous celebrities who have mental illness or contact with people who represent the stereotype such as a homeless person were found to be unsuccessful or worse, reinforced stereotypes.

CONTACT WITH REGULAR FOLKS

Since contact with regular people who are stigmatized has proven to be the most effective strategy for changing perception and behavior, my choice to design forms that use regular everyday items and situations was a good one. Corrigan’s research bolsters my findings that by focusing on the everyday experience of normal people, the audience is challenged to continue seeing the stigmatized as a bizarre “other” that deserves exclusion. Showing
that women with PMS are normal and that the experience is extremely common and repetitive neutralizes it and makes it less of a big deal. Changing the public's attitude of PMS as a thing you point out and make fun of to just something that is part of the everyday landscape of life has the potential to break the stigma around PMS.

**ACTIVE ARTIFACTS TURN THE PARTICIPANT INTO THE IN VIVO CONTACT**

While in vivo contact with a schizophrenic showed the greatest change in perception of the mentally ill, a video including the same content was also successful in challenging people's stereotypes. This part of Corrigan's work made me realize that the active artifacts that I made, namely the 28 Days of Panties and the 5 Hormone Personality Finger Puppets, effectively turn the participant into the in vivo contact. By walking around the rack and using it to point out to a boyfriend or a friend where you are in your cycle, or using it as a way to admit that you experience PMS turns you, the viewer, into the regular people who is part of the stigmatized group. Suddenly you become the example of a normal woman with PMS, which may defy your friend's notions of what women with PMS are really like. A similar thing happens with the finger puppets. Participants said they would use the puppets to explain where they are in their cycle to other people close to them. Coming out in this way as a woman influenced by hormonal changes may challenge the negative assumptions held by loved ones. This finding may be an indication of why people had a hard time touching the artifacts. Doing so communicates that you are part of the stigmatized group, a fact that many are resistant to whether it's true or not.

**CONFIRMING STEREOTYPES**

While making my artifacts I struggled with the notion that in some ways I was confirming the stereotype that women are moody and crazy. For example, the comic strips in the Fool Me Once video show a woman getting irrationally angry, taking it out on an innocent by standard and then not apologizing for her actions. Another example is the memoir and PMSface.com. Both of these artifacts reiterate that women are not themselves when they're PMSing. Corrigan's work has shown that there's a place for confirming stereotypes within the work of combatting stigma. The difference lies in the level of confirmation and what
you do after you’ve confirmed the stereotype. In my artifacts, I do confirm the stereotype that women become hormonally altered during PMS, but I offer them methods for coping such as learning to predict their period, sharing a PMS caricature of themselves with a community who can relate or reading a tell-all account of a woman who has a similar experience.

**SELF-STIGMA**

Corrigan has also defined a subset of stigma called “self-stigma”. He says that “self-stigma is when people do it to themselves; that is, they grew up in society with the same stereotypes as everyone else, then find themselves in the stigmatized group and beat themselves up about it.” In my examination of women’s experience with stigma around menstruation and PMS, self-stigma is a major characteristic. Corrigan’s illumination of “self-stigma” helped me see that women themselves are actors in perpetuating the stigma held against them. In reframing PMS, I hope to make women aware of the self-stigma they feel and show them a new way of thinking about their mood swings that doesn’t require shame or embarrassment.
GENERALIZABLE FINDINGS
Strategies for Reflective Engagement

FOCUS THE ARTIFACT IN WHAT IS RELEVANT TO THE EVERYDAY EXPERIENCE OF THE AUDIENCE.
Giving your audience information that is directly applicable to their daily lives is a way to relate to your audience and show that the message you have is useful, useable and desirable.

When asked, research participants drew or modeled the female reproductive system in varying degrees of accuracy. However, no one was able to explain the menstrual cycle well. This lead me to believe that understanding anatomy had no connection to understanding how the menstrual cycle worked. Essentially one’s anatomy has no real relevance to daily life. What matters to people are the effects of that anatomy, not the anatomy itself. So if anatomy wasn’t going to play apart in my artifacts, what was the content going to cover?

I needed to find an aspect of the menstrual cycle that represented a real need or pain point. I found that pain point through the letter writing activity where participants wrote a letter to their period and another to their PMS. What I found was that participants wrote of peace and compromise to their periods but of anger and frustration to their PMS. This exercise made it very clear that communication pieces dealing with PMS warranted attention and could use improvement because struggling with mood swings from PMS month after month is a common and bothersome experience that women had yet to understand fully. From this point on, PMS and hormones became the focus of my design investigations.

CREATE A COMMUNITY OF PEOPLE WHO CAN RELATE.
By creating a place where people can come together and share stories, you provide them an opportunity to gauge the normalcy of their experience.

For example, PMSface.com revealed that people want to read over other people’s stories but are unwilling to share their own. There was added hesitation around participation because this artifact involved uploading unflattering pictures onto the web. Participants were excited by the idea of having a place to check and see if what they experience is normal and common.
Choosing a speaker who is a member of the stigmatized group and is willing to be vulnerable.

Using language that includes “I”, “you”, “us”, and “we” will help create a connection between speaker and the audience. When the speaker shares her own story, she makes herself vulnerable. Although vulnerability is not something many elect to do, it shows courage and acts as a model for others to follow.

For example, the female hand that stamps out the message in Fool Me Once indicates that the author is female and she retells her experience of being fooled by PMS.

**Strategies for Visceral Engagement**

Make artifacts that pique curiosity.

If at first glance your users ask, “What is that thing? Why is it here? What is it trying to tell me?”, you probably made them curious in a way that makes them want to solve a puzzle or complete a task. Unresolved curiosity is painful for the brain and it will work hard to get the answer. Making the audience curious by posing questions or a mystery is a great way to get attention and keep it. For example, the 28 Days of Panties rack made people curious. They told me that at first they wondered, “What is this thing?” They then interacted with the piece and worked to understand it.

Illuminate something unexpected.

Presenting an aspect of your message that is surprising or unexpected is one way to grab the audience’s attention. Once you have their attention, keep it by using stories, concrete details, and emotions that come from a credible speaker. In the Fool Me Once video, I pointed out that women have 400 menstrual cycles in their lifetime. This unexpected and concrete detail was surprising and got their attention perhaps enough to convince them to keep watching the video until the end.
**Strategies for Behavioral Engagement**

**Allow for Levels of Interaction Including Gazing at, Pointing To and Touching.**
Because stigmatized topics can make people uncomfortable, it is important to design for several levels of engagement. Many will be unwilling to touch the artifact but will only look at it from a distance. Allowing for these levels of comfort will increase the size of the audience you are able to reach.

When I displayed the 28 Days of Panties rack at the Graduate Research Showcase, people surrounded it but very few people actually touched or rifled through the panties. There was a lot of interest and enthusiasm for this piece, but still, hardly anyone did more than walk around and read the labels. This tells me that by designing it to be educational at a glance as well as through a deeper dive, I was able to engage a larger audience. Not all audience members will be comfortable approaching an artifact that takes on stigma. Allowing for levels of interaction invites a larger section of the public to learn.

**Uncover Why Existing Artifacts Are Ineffective or Irrelevant To the Audience.**
Through research you may find it beneficial to tease out what exactly makes existing artifacts ineffective or unusable to best address the communication challenge at hand. You may find that messages make false assumptions about the audiences’ motivations or interests. For example, through my research I found that although the existing artifacts emphasize anatomy, it’s not really relevant to my audience’s daily experience of struggling with mood swings due to fluctuating hormones. Additionally, I found a void of materials dedicated to the experience of women between menarche and motherhood. The materials in the market today falsely assume that women are self-motivated to seek out these generic menstrual education materials.
If you put shame in a petri dish and cover it with judgment, silence and secrecy, it grows out of control.

Brené Brown in I Thought It was Just Me

But comprehension is not enough. We must try it, tinker with it, watch it, and make it work. We must do it.

Bernice McCarthy

Strategies for Learning

MAKE A CONCRETE ARTIFACT.
Concrete artifacts bring form to the invisible. This is useful in situations where the subject matter is shameful, private or occurs slowly overtime. By bringing the topic out of the shadows and into the light, you may make the stigmatized topic seem like it’s worth talking about. Your artifact could spark a conversation and get people talking, which is a great first step in combatting a stigma.

MAKE AN ARTIFACT THAT REQUIRES ACTIVE LEARNING.
An active artifact requires the audience to participate and interact with it in order to learn. Active learning artifacts invite and reward exploration and interaction. Learners who uncover information on their own stand a higher chance of retaining that information because their own line of inquiry into the object provided their answers.
**Strategies for Learning that sticks**

**USE VISUAL AIDS TO HELP THE BRAIN REMEMBER.**
Presenting a visual representation often helps users create and recall a new mental model. For example, my finger puppets use the hand as a memory aid. The outline of the hand mimics the fluctuations of mood-altering estrogen during the menstrual cycle. Pointing this out helps people remember that their mood and energy will rise and fall throughout the cycle.

**USE FAMILIAR OR HOUSEHOLD OBJECTS THAT EVOKE NEUTRAL OR FOND MEMORIES.**
Evoking memories often helps create emotional connections and aids memory. Using commonly available materials has the added benefit of relating to a wide audience. For example, I used hipster style panties on the rack because participants indicated in the card and panty sort that simple cotton hipsters are a common choice for everyday wear.

*The power of the unaided mind is highly overrated.*

*Donald Norman in Things That Make Us Smart*

*Household object provide a familiar symbolic context, they reaffirm the identity of the owner.*

*Csikszentmihalyi and Halton*
My thesis artifacts were aimed at helping stigmatized women combat their self-stigma about PMS. To do this I engaged women in re-learning the menstrual cycle with artifacts that have emotional resonance and staying power.

The artifacts I made touched upon Donald Norman’s three levels of emotional design: visceral, behavioral and reflective. As indicated by McCarthy, making artifacts that were concrete and active prompted people to interact with them and follow their own line of inquiry to discover new knowledge. But it should be noted that when artifacts had both an active and passive form of interaction, more users chose to be passive. And finally by using the SUCCES method, I was able to touch upon several known strategies for getting people’s attention and keeping it long enough to make a lasting memory.

If I were to continue my thesis project, I would do more to challenge the stigmatizer’s notions of PMS. I imagine interviewing men on what they think of women with PMS because what I found through interviews is that guys are really confused by it and want to be helpful to the women they love during that time. Maybe I happened to only talk to sensitive men during my interviews but I was really surprised by their attitudes towards PMS and how they defied the stereotype of men and PMS. I think a video that captures a new way for men to think and act towards PMS would be a powerful antidote to the stigma around PMS.

**Preferred states for stigmas are possible**

Although stigmas are well ingrained in society, history will show a record of stigmas that have been successfully overturned. Slavery is illegal. Women have the right to vote. Mixed race couples are free to marry. AIDS is no longer seen as a gay cancer. Even today the stigma around same-sex marriage is beginning to crumble as more states pass laws to legalize gay marriage. This is very good news.
History shows that stigmas can be combated. To do so takes time and persistence, but they can be curtailed. I believe change begins when individuals are given relevant and memorable information that inspires a new mental model requiring new thoughts and new actions that can be shared with others. It also requires people who are not afraid to admit that they are part of a stigmatized group, thus bringing the experience out of the shadows. History is full of such brave people like Rosa Parks and Harvey Milk. My hope is that I’ve provided a guide in making artifacts that engage and educate people such that their tolerance for all kinds of people grows.

Through my study, I learned about design as a process for building knowledge. Because very little work has been done in the area of designing for combatting stigmas in the ways that I approached it—through engagement and education rather than with protest or just education alone—I am extremely satisfied with my contribution to the field. My work focused on the first step in combatting stigma and I hope future designers will be interested in busting stigmas because prejudice is everywhere and the fight against intolerance needs many champions.
Endnotes


2. Ibid., 2.


7. Ibid., 20.

8. Ibid., 22.


12. Ibid.


19. Ibid.
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