



# Designing for the 21st Century

**Teacher's Edition**

As designers, we are members of an interconnected global community. It is important to be aware of the impact our work has on the world around us. Traditionally, the role of graphic design has been to express the ideas and messages of others, but our designs also represent our own unique, creative voices. As a result, it is part of the designer's craft to ask how our work affects the world. Are we excluding anyone from our messages? Wouldn't our designs become stronger by reaching as many people as possible? How can we be sure that our messages communicate what we intend?

This coursework was created with the intention of teaching graphic design through a social justice lens. These materials introduce readings and exercises that were chosen to inspire class discussion and participation. It is only through recognizing and analyzing these potential biases that we can approach a more clear sense of dialog between our audience and our work.

### **To my colleagues reading this work:**

**In addition to the readings and exercises, this teacher's copy of Designing in the 21st Century will also include keywords, National Education Standards, answers to questions, and student examples for the exercises at the end of this booklet. The questions in the marginalia are meant to be used as inspiration for class/group discussion or can be used as additional writing assignments.**

**It is my hope that you are able to build student literacy in digital media and graphic design with this work. While my students had access to Photoshop for these exercises, they can easily be done with traditional art and drafting media so these lessons can be used by as many students as possible.**

# The Role of the Designer

**1-3:** Warde's 'The Crystal Goblet'

**5-7:** Vinh's 'Conversations with the Network'

**Standards covered in this section:**

**Anchor Standard 8:** Interpret intent and meaning in artistic work.

**Anchor Standard 10:** Synthesize and relate knowledge and personal experiences to make art.

**Keywords:** Typography, Modernism, Interaction Design, Digital Media

(An excerpt from)

# The Crystal Goblet

Beatrice Warde, 1932

Imagine that you have before you a flagon of wine. You may choose your own favourite vintage for this imaginary demonstration, so that it be a deep shimmering crimson in colour. You have two goblets before you. One is of solid gold, wrought in the most exquisite patterns. The other is of crystal-clear glass, thin as a bubble, and as transparent. Pour and drink; and according to your choice of goblet, I shall know whether or not you are a connoisseur of wine. For if you have no feelings about wine one way or the other, you will want the sensation of drinking the stuff out of a vessel that may have cost thousands of pounds; but if you are a member of that vanishing tribe, the amateurs of fine vintages, you will choose the crystal, because everything about it is calculated to reveal rather than hide the beautiful thing which it was meant to contain.

Bear with me in this long-winded and fragrant metaphor; for you will find that almost all the virtues of the perfect wine-glass have a parallel in typography. There is the long, thin stem that obviates fingerprints on the bowl. Why? Because no cloud must come between your eyes and the fiery heart of the liquid. Are not the margins on book pages similarly meant to obviate the necessity of fingering the type-page? Again: the glass is colourless or at the most only faintly tinged in the bowl, because the connoisseur judges wine partly by its colour and is impatient of anything that alters it. There are a thousand mannerisms in typography that are as impudent and arbitrary as putting port in tumblers of red or green glass! When a goblet has a base that looks too small for security, it does not matter how cleverly it is weighted; you feel nervous lest it should tip over. There are ways of setting lines of type which may work well enough, and yet keep the reader subconsciously

Do you  
agree with  
Warde? Does  
typography  
exclusively  
serve the  
message or  
could it also  
express other  
things?

worried by the fear of 'doubling' lines, reading three words as one, and so forth.

Now the man who first chose glass instead of clay or metal to hold his wine was a 'modernist' in the sense in which I am going to use that term. That is, the first thing he asked of his particular object was not 'How should it look?' but 'What must it do?' and to that extent all good typography is modernist.

Wine is so strange and potent a thing that it has been used in the central ritual of religion in one place and time, and attacked by a virago with a hatchet in another. There is only one thing in the world that is capable of stirring and altering men's minds to the same extent, and that is the coherent expression of thought. That is man's chief miracle, unique to man. There is no 'explanation' whatever of the fact that I can make arbitrary sounds which will lead a total stranger to think my own thought. It is sheer magic that I should be able to hold a one-sided conversation by means of black marks on paper with an unknown person half-way across the world. Talking, broadcasting, writing, and printing are all quite literally forms of thought transference, and it is the ability and eagerness to transfer and receive the contents of the mind that is almost alone responsible for human civilization.

If you agree with this, you will agree with my one main idea, i.e. that the most important thing about printing is that it conveys thought, ideas, images, from one mind to other minds. This statement is what you might call the front door of the science of typography. Within lie hundreds of rooms; but unless you start by assuming that printing is meant to convey specific and coherent ideas, it is very easy to find yourself in the wrong house altogether.

Before asking what this statement leads to, let us see what it does not necessarily lead to. If books are printed in order to be read, we must distinguish readability

**Do you think  
that all good  
typography  
is modernist  
now?**

**Does type  
well used  
always  
need to be  
invisible? Can  
you think of  
times when it  
isn't?**

from what the optician would call legibility. A page set in 14-pt Bold Sans is, according to the laboratory tests, more 'legible' than one set in 11-pt Baskerville. A public speaker is more 'audible' in that sense when he bellows. But a good speaking voice is one which is inaudible as a voice. It is the transparent goblet again! I need not warn you that if you begin listening to the inflections and speaking rhythms of a voice from a platform, you are falling asleep. When you listen to a song in a language you do not understand, part of your mind actually does fall asleep, leaving your quite separate aesthetic sensibilities to enjoy themselves unimpeded by your reasoning faculties. The fine arts do that; but that is not the purpose of printing. Type well used is invisible as type, just as the perfect talking voice is the unnoticed vehicle for the transmission of words, ideas.

(Originally printed in London in 1932, under the pseudonym Paul Beaujon.

This version printed in London 1955).

# Reading Review

Please answer the following questions using full sentences and in your own words.

1. Describe how Warde thinks type should be invisible

**To Warde, type is meant to convey the meaning of words. By being invisible, she means that we should not be distracted by the letters themselves, and that we should only focus on what they represent.**

2. How is typography like a wine goblet?

**Like a wine goblet, typography is also a container. While the goblet contains wine to be drunk, typography contains meaning to be communicated.**

3. Why do you think that Warde first published this essay with a male name?

**This is a hypothetical question that was asked to remind students of the disparities between genders in early 20th century Europe. It was meant to reinforce the investigation of bias in this booklet.**

(An excerpt from)

# Conversations with the Network

Khoi Vinh, 2011

The design world that I came up in - the graphic design industry at the end of the last century - was fundamentally about fashioning messages: ornamenting and embellishing content so that a core idea, product, or service could be more effectively consumed. Even if a designer felt compelled to obscure the content, as was the style of postmodern discourse that dominated the field at the time, the operative notion was the design was fundamentally about the transmission of messages.

Vinh is discussing how the digital age changed his career. Do you think he misses what design used to be?

It took nearly a decade of working in digital media before I understood that this idea was fundamentally at odds with the new archetype inherent in networked technology. To be sure, digital media is conducive to communication; in fact, the Internet is perhaps the greatest multiplier of communication that the world has even seen. With its enormous and pervasive reach it transmits ideas across great distances with great speed, among a large number of people, and in unbelievably rapid succession, all as a matter of course. In many ways such freedom and efficiency have drastically democratized communication, obsoleting the more deliberate, thoughtful pace that communication took when mediated by graphic design. But in this new world designers are critical not so much for the transmission of messages but for the crafting of the spaces within which those messages can be borne.

To understand this difference, it's helpful to look back at the predigital world and recognize that the predominant notion of how design worked was this: every design solution was the product of a visionary who birthed and nurtured an original idea, a radical insight, or an inspired revision. The designer gave it

life and labored over it, so that the original inspiration evolved into a complete and definitive work. There was no design without the designer.

It was a useful construct through which to comprehend design: the idea that a single person (or group of people) was responsible for a design solution allowed hopeful young designers like me to understand this mystery as something achievable on human terms. It made inspiration knowable and potentially reproducible, provided role models, archetypes to aspire to. If genius could be embodied in a single person, then anyone might be a genius, or at least, with work and discipline, could learn from the ways of their design heroes. These heroes could be interviewed, written about, studied, even encountered in the real world at lectures and conferences. They walked among us; if we were lucky we might even come to know them personally.

In this model the designer was something of a storyteller, and the finished design functioned as a kind of narrative. The designer created the beginning, middle, and end, leading the audiences through something immersive, wondrous, bracing, satisfying, and/or inspiring. Thus the core product, whether an advertisement, magazine, article, or consumer object, would be transformed into a visual story: an ad for a museum might become a map of the human body, an interview with a musician might become a travelogue of an alternative mindscape, a jar of pasta sauce might evoke a classical age lost to contemporary sensibilities. Whatever the conceit, the audience was beholden to the designer's grand plan, experiencing the design according to those original intentions. The closer the audience's experience to the designer's original script, the more effective the designer.

As I pursued a career in interaction design, I saw it as my duty to carry this sensibility over to a new platform. The Internet was then, and today remains, a young

medium and I reasoned that it could only benefit from a century's worth of design conventions and lessons accumulated in the world. And in this I made a fundamental miscalculation.

The designer as author, as craftsman bringing together beginning, middle, and end, becomes redundant in a space in which every participant forges his or her own beginning, middle, and end. And that is exactly what happens in networked media. The narrative recedes, and the behavior of the design solution becomes prominent. What becomes important are questions that concern not the author but the users. How does the system respond to the input of its users? When a user says something to the system, how does the system respond?

Where analog media thrive on the compelling power of narrative, digital media insist on much less linear modes of communication. Instead of the one-to-many model that dominated the last century - for example, a magazine article written by a single journalist and encountered by thousands of readers - the Internet is a many-to-many platform, a framework in which everyone talks to everyone and every utterance might inspire a reply. It is a conversation rather than a broadcast.

**Which do you think is more important to Vinh, the designer or the audience?**

## Reading Review

Please answer the following questions using full sentences and in your own words.

1. How does Vinh think that designers are story tellers?

**Vinh believes that that although designers may not create what they have been tasked with communicating, they are responsible for how it is told. This broadcasting of ideas to an audience is what once made up graphic design.**

2. How does Vinh believe that graphic design has changed with the invention of the Internet?

**Because the Internet has inspired so much communication, design has shifted from a one sided broadcast to interaction. It has become more of a conversation that occurs within networked media where individuals can offer replies, criticism, and other responses to what has been created.**



# Exploring Bias in Design

**9-10:** Pater's Able or Disabled

**11-14:** Pater's Icons of Inequality

**17-18:** Pater's Logotypes and Archetypes

**19-20:** Pater's Appropriating Peace

## Standards covered in this section:

**Anchor Standard 7:** Perceive and analyze artistic work

**Anchor Standard 8:** Interpret intent and meaning in artistic work.

**Anchor Standard 10:** Synthesize and relate knowledge and personal experiences to make art.

**Keywords:** Disability, ISO 7001, Vienna Sees Differently, Caitlin Winner, visual literacy, bias, logos,

# Able or Disabled

Ruben Pater, 2016

If less than 1% of disabled people use a wheelchair, what else could be used to create an icon to represent disability?

The wheelchair symbol is usually associated with disabled parking spaces, but in fact less than 1% of all disabled people use a wheelchair. This is unfortunate for the majority of disabled people without wheelchairs, who are frowned upon when parking in the disabled zone. Disability is much more common than you would expect: 15.3% of the world population has a moderate or severe disability.

The design of the international symbol of disability was developed during a design contest held in 1968. The winner was designer Susanne Koefoed, and her design is the basis for the icon which is used today. It was not immediately introduced since it still needed a head. Karl Montan optimised the symbol in 1969 and it was adopted as an ISO international standard.

Various organisations have criticised the wheelchair icon as a stereotype which does not reflect the different forms of disability. Furthermore, it is a misunderstanding that disability is a permanent condition, as if the world can be divided into the abled and disabled. In reality, disability happens to many of us at some point in our lives and is often a temporary or dynamic state.<sup>2</sup>

Designers Sara Hendren and Brian Glenney created an alternative to the icon in 2013 with the Accessible Icon Project. The person drives her/himself instead of the passive original. Despite their efforts, the logo from 1969 remains the international standard. And even though their icon is a huge improvement, it is still a wheelchair.



Koefoed/Montan, 1969

Do these icons really describe the handicapped or do they describe people who have mobility issues?



Hendren and Glenney, 2013

# Icons of Inequality

Ruben Pater, 2016

In the world of signing, it is always 1974, the year when symbols were designed for the U.S. Department of Transportation (DOT). The symbols became a worldwide standard after adoption by the International Organization for Standardization (ISO). The U.S. design association, AIGA, says the icons 'are an example of how public-minded designers can address a universal communication need.'

What else could be used as an icon for restaurants?

The icons known as ISO 7001, have been implemented in signing around the world, but they are by no means 'universal'. The icon for restaurant is a knife and fork, hardly a standard in every country. The parking symbol uses the Latin alphabet 'P' of an English word.

## Men are Doctors, Women are Nurses

In the world of ISO 7001, men are the rule and women the exception. The male icon is used for both a male a gender neutral person, while the female icon is only used to specify the female gender. The most prominent example of signage sexism is the tickets symbol which shows a man buying a ticket from a woman at a service desk.

In 2005 the University of Aveira in Portugal surveyed 49 signage systems to find out to what extent the female gender was underrepresented. Of the 722 icons, 366 were male and 87 were female. Female symbols only outnumbered male ones when the person was accompanying a

Why were there so many more male icons than female ones?

child. Icons that depicted professions affirmed stereotypes: the doctors would be male and the nurses female.



Examples from the ISO 7001

## Towards Gender-Neutral Symbols

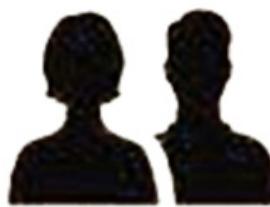
In 2007, the city of Vienna launched the campaign Wien sieht's anders (Vienna sees it differently), that aimed to reverse gender stereotypes in the city's signage. A nappy changing facility showed a father and a child, instead of a mother and child. Icons where the male figure is a default, like the emergency exit and road work, became a female figure. Although some argue by over-emphasizing female features the road work sign becomes a female caricature in itself.

What about the icons of our new 'public' spaces? When designer Caitlin Winner started her job at Facebook, she noticed the icons were gender biased. The friends icon featured a man in the front with a man and woman behind him. She says, 'The woman was quite literally in the shadow of the man, she was not in position to lean in.' She decided to take it upon herself to design a set of gender neutral icons. She did not only look at the hierarchy between male and female, she also designed silhouettes that could apply to various gendered types. They are now adopted as the new standard icons.



What other signs can you think of that could be similarly revised?

Examples from Vienna sees it differently, 2007



Original Facebook logos (L)  
Caitlin Winner's revisions (R)

## Reading Review

Please answer the following questions using full sentences and in your own words.

1. In *Able or Disabled*, why do people criticize the use of the wheelchair icon?

**The use of the wheelchair icon has been criticized because even though about 15.3% of the world's population has some kind of disability, less than 1% of that number actually use a wheelchair. It is not very inclusive of the different types and manifestations of disability.**

2. In *Icons of Inequality*, The University of Aveira's study found that female symbols outnumbered male symbols in only one instance. What was it?

**The only instance that the University of Aveira's study found that female symbols outnumbered male ones was when the person accompanied a child.**

- 3.** In *Icons of Inequality*, the city of Vienna created new, more gender neutral symbols. What examples were mentioned?

**The examples that were specifically mentioned were baby changing stations, emergency exits, and road work signs.**

- 4.** In *Icons of Inequality*, why did Caitlin Winner redesign Facebook's icons? How did her designs change what was being used?

**Caitlin Winner redesigned Facebook icons because she noticed that the icons being used were biased. Her work focused on gender neutral designs that also removed the hierarchy from what was being used. Men and women were created in more fair ways that were closer in height and frequency of depiction.**

# Logotypes and Archetypes

Ruben Pater, 2016

If you live in an urban environment you can probably recognise more logotypes than bird species. Many logo designs are based on elementary shapes like the circle, the triangle, the arrow, the cross, and the square. These same shapes can be traced back as far as the stone age and are found in caves all around the world.

A cross also symbolizes hospitals and first aid in Western cultures.

Why do you think this is?

The circle was used to symbolise the sun, the moon, and the cycles and seasons in nature. The square symbolises an enclosed space. It is also an old Chinese symbol for the outer points of the earth.<sup>7</sup> The arrow comes from hunter and gatherer cultures. The aiming of the arrow made it the international symbol for direction. The cross was used by the Egyptians as the hieroglyph of life or living before it was adopted as a Christian symbol.

Symbols may have similar origins, but the way they are perceived is very culturally dependent. In Design Writing Research, Ellen Lupton and Abbot Miller mention the research by Russian psychologist Alexander Luria from 1931. Luria took drawings of a circle, a triangle, and a square and showed it to inhabitants of remote villages in Uzbekistan and Kyrgyzstan. The literate villagers would identify the abstract shapes as a circle, square, or triangle. But the illiterate villagers identified the shapes as specific objects. A circle was a plate, a bucket, or the moon, a square was a door, a mirror, or a house. This suggests visual literacy is related to script literacy.

In *About Understanding* Andreas Fugelsang confirms that reading images is a skill that has to be taught. He says, 'This is not recognised because education in reading pictures is an informal process.' In societies where people are confronted with a large variety of images every day, this learning happens automatically. When there are very little or no images, the ability to read images could be less.

# Appropriating Peace

Ruben Pater, 2016

Research by Asja Keeman

Why are some symbols popular and others not? Type designer Adrian Frutiger argued this had more to do with strong graphic effect than its historic references. Famous examples are the swastika and the skull, symbols whose meaning has changed significantly over time.

The peace symbol was designed by British textile designer Gerald Holtom in 1958 for the British anti-nuclear movement. Its design was based on the flag signals for the letters N and D (from nuclear disarmament), and it also symbolised a person in despair.<sup>1</sup> Through its use in the anti-Vietnam and 'ban the bomb' protests in the 1960s and 1970s it grew to be one of the most popular symbols ever created.

**Do you think  
in the age of  
the Internet  
and instant  
communi-  
cation that  
Holtom's  
design would  
have caught  
on, especially  
considering  
its history?**

The downward fork shape has a striking simplicity, and Holtom was not the first one to use it. In the Runic Alphabet the symbol means death. During World War II the Runes were revived by Nazi Germany and used to, among other things, signify army units. This is how decades before the peace symbol was designed, it was found on tanks in German tank divisions for anything but peaceful purposes.

In the 1960s when the peace symbol became popular in Europe, its history came back to bite it. Some people objected to its use because of its Nazi history, but by then it had become too popular. Again in 1973 the peace symbol caused controversy in South Africa when it was

used during anti-Apartheid protests, and was subsequently banned as a symbol by the Apartheid regime.

More recently in 2006 in the United States, two inhabitants of Denver were forced to remove a peace symbol because neighbours found it anti-Christian. They interpreted the downward fork as a downward cross, a symbol of satanism. No matter how simple and strong a symbol, its adaptation, resemblance, or appropriation can completely change its meaning.



## Reading Review

Please answer the following questions using full sentences and in your own words.

1. In *Logotypes and Archetypes*, where did Alexander Luria study literate versus illiterate villagers for his work in 1931.

**Luria's work focused on people from remote villages in Uzbekistan and Kyrgyzstan.**

2. In *Logotypes and Archetypes*, how did literate villagers define shapes they were shown? How did the illiterate villagers define them?

**Literate villagers defined shapes with their names, like circle, square, or triangle. Illiterate villagers defined them as things that were suggested by their shape, like plate, moon, door or house.**

- 3.** In *Appropriating Peace*, who created the peace symbol, and from what did he draw inspiration ?

**Gerald Holtom created the peace symbol in 1958 for the British anti-nuclear movement. He was inspired by the flag signals for the letters N and D.**

- 4.** In *Appropriating Peace*, what was the downward fork of the peace symbol also used to represent?

**During World War II, the Nazis used the downward fork of the peace symbol. What Holtom created was the same symbol as a germanic rune that meant death. It was used by the Nazis as a military emblem.**



# Moving Forward

These final pages contain exercises for you to show what you have learned. You will be asked to identify the signage that demonstrates bias, and you will be asked to create your own new work based off of what we have learned.

## Standards covered in this section:

**Anchor Standard 7:** Perceive and analyze artistic work

**Anchor Standard 8:** Interpret intent and meaning in artistic work.

**Anchor Standard 10:** Synthesize and relate knowledge and personal experiences to make art.

The student examples that are shown on the following pages were created by students using clipart and Photoshop. If you choose to use imaging software for final projects, you may want to create shared templates and defined color schemes for students to use. These exercises could also be done with a variety of traditional classroom materials.

## Identifying Bias

In the examples below, circle each image that demonstrates potential cultural or gender bias.



**While the case could be made for several other signs, the ones circled have the clearest representation of potential bias.**

- The dollar sign represents money, but it only represents particular nationalities.
- The elevator icon has only male symbols represented.
- The knife and fork assumes that every culture uses knives and forks to eat.
- The woman behind the counter is serving a man, these could be exchanged occasionally to introduce more gender neutrality.
- The Parking and No Parking signs use the Latin Alphabet as a symbol. A more clearer symbol could incorporate a pictogram versus a letter.

### Original Symbols



### Student Work



## **Looking at your World**

Make a list of some of the rules that you are asked to follow in your high school. (For example: What is the cell phone policy?, Does your school have a dress code?, Do you have specific parking for students?)

**The rules and policies that students create for this portion of the assignment also present an opportunity to discuss equality on your own campus. Some potential topics could include:**

- **Inclusive bathroom signage for people of any gender identity.**
- **Finding ways to represent a fair dress code.**
- **Discuss the impact of social media, cyberbullying, and how it might be captured visually.**
- **Properly using technology in the classroom/cell phone policies.**
- **Address any other unique circumstances, policies, or situations that are important to your school.**

**Using the list that is compiled, students can create pictograms that could be posted around school or used in place of preexisting signage. In this way, your students' works will be showcased and it will create awareness beyond the classroom.**

**The student examples shown incorporated their school colors, purple and white.**

## Student Work Examples



No Children in  
the Weight Room



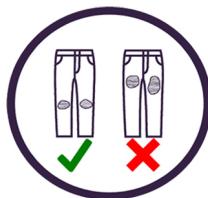
No Running in  
The Halls



No Cell Phones  
Out During  
School Hours



No Vaping on  
School Property



No Holes in Pants  
Above the Knee



## Updated Restroom Signs to Include Transexual People

(It should be noted that students represented here discussed the male/female pictograms in class. It was decided that the male/neutral was really not male, but was exclusively neutral. They felt that the male/female/trans symbols more clearly represented gender identity)

# Class Notes





Compiled by Brian Vollner