

PINO TROGU – SF STATE

PROJECT 4 CHECKLIST

**Small Handbook of Information Design:
16 Principles for Better Data Visualizations**

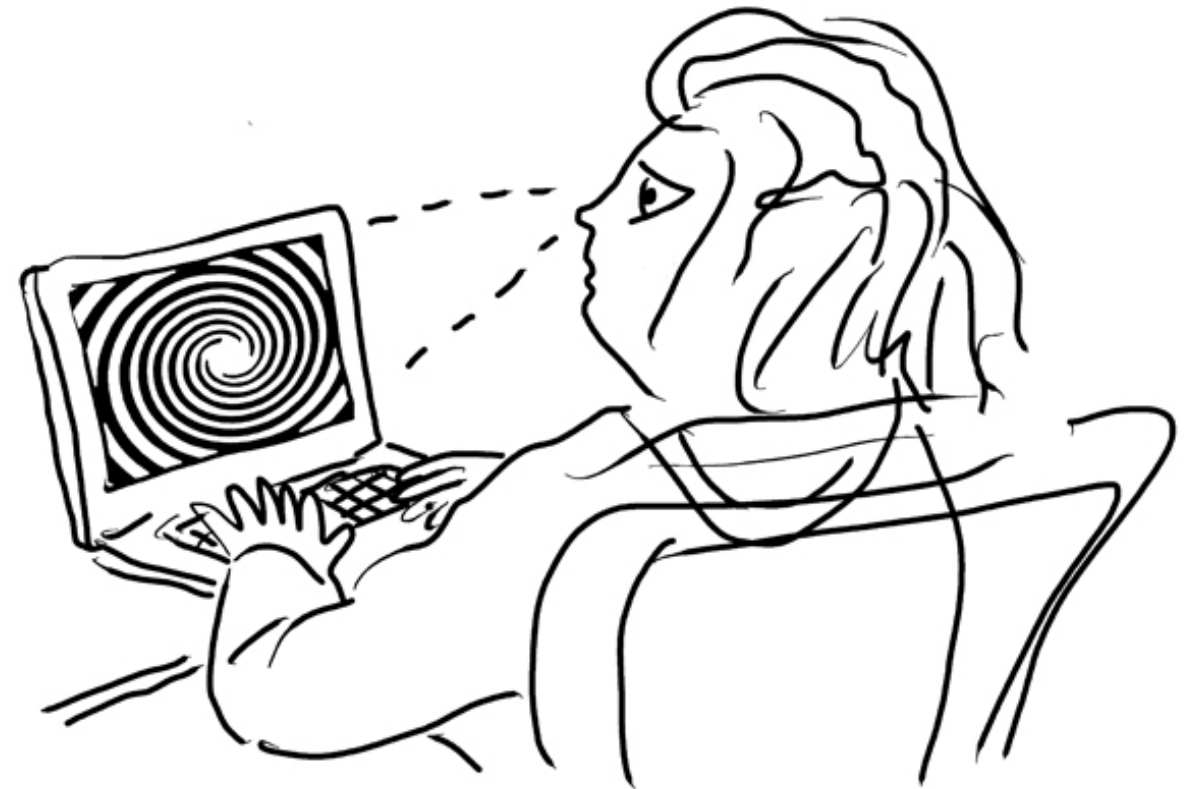
**DAI 523 INFORMATION DESIGN 1: DATA VISUALIZATION
FALL 2013**

[go to last slide](#)

01 Use pencil and paper



YES

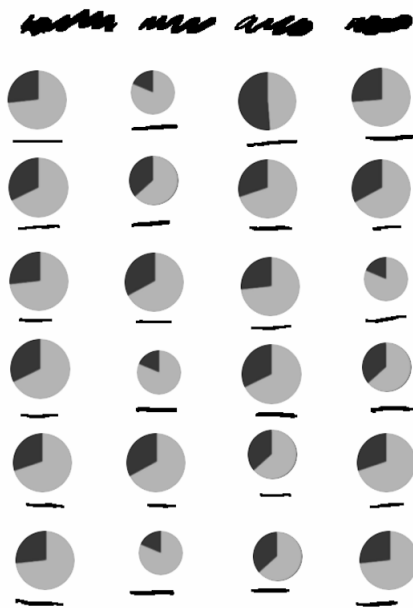


NO

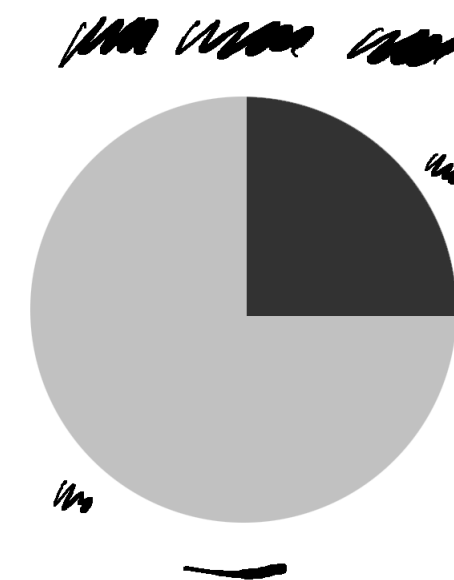
02 Content is first

year	bracket	fed	state	fica	property	sales	corporate	overall
1980	1	0.02306	0.0041	0.0535	0.04467	0.04923	0.02754	0.20209
1980	2	0.07927	0.01276	0.07368	0.03457	0.03149	0.03084	0.2626
1980	3	0.11445	0.01925	0.08513	0.02995	0.02506	0.03103	0.30488
1980	4	0.13588	0.02287	0.08294	0.02908	0.02172	0.03288	0.32537
1980	5	0.1597	0.02654	0.07491	0.03004	0.01917	0.03649	0.34685
1980	6	0.18233	0.02888	0.064	0.02951	0.01799	0.04049	0.3632
1980	7	0.19944	0.03128	0.05037	0.03149	0.01624	0.04944	0.37827
1980	12	0.2324	0.02985	0.03618	0.04056	0.01072	0.0812	0.43091
1980	15	0.29113	0.02653	0.01098	0.0557	0.00529	0.09999	0.4896
1981	1	0.02909	0.00493	0.05851	0.04387	0.04713	0.02476	0.20829
1981	2	0.0851	0.01346	0.07865	0.03441	0.03055	0.02758	0.26975
1981	3	0.12037	0.02009	0.09156	0.0296	0.0241	0.02747	0.31318
1981	4	0.14412	0.02362	0.0905	0.02932	0.02088	0.0296	0.33803
1981	5	0.16341	0.02646	0.08242	0.03047	0.01846	0.03337	0.3546
1981	6	0.18578	0.02785	0.07007	0.03065	0.01704	0.03879	0.3702
1981	7	0.21417	0.02886	0.05839	0.02967	0.01536	0.04134	0.38779
1981	12	0.24037	0.03015	0.03826	0.04005	0.01089	0.06632	0.42604
1981	15	0.2817	0.01948	0.01349	0.04287	0.00553	0.08502	0.44809

year	bracket	fed
1980	1	0.02306



YES



NO

03 Do not draw graphs by hand

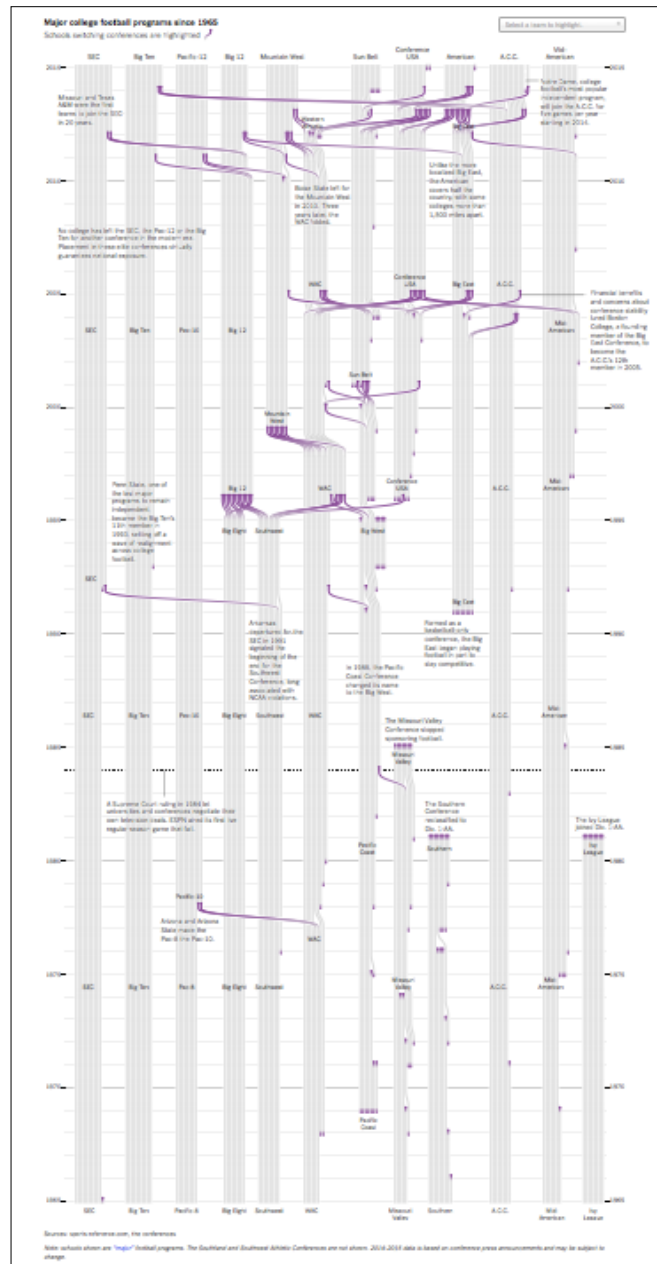
year	bracket	fed	state	ica	property	sales	corporate	overall
1980	1	0.02306	0.0041	0.0535	0.04667	0.04923	0.02754	0.02029
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1980	4	0.13588	0.02287	0.08294	0.02908	0.02172	0.03288	0.02537
1980	5	0.1597	0.02634	0.07491	0.03004	0.01917	0.03649	0.04685
1980	6	0.18333	0.02888	0.064	0.02951	0.01799	0.04049	0.0613
1980	7	0.19944	0.03128	0.05037	0.03149	0.01624	0.04944	0.07827
1980	12	0.2324	0.02985	0.08618	0.04056	0.01072	0.0812	0.43091
1980	15	0.28113	0.02553	0.01086	0.0517	0.00529	0.09999	0.4896
1981	1	0.02909	0.00493	0.05851	0.04387	0.04713	0.02476	0.02829
1981	2	0.0851	0.01346	0.07865	0.03441	0.03055	0.02758	0.02975
1981	3	0.12037	0.02009	0.09156	0.0296	0.0241	0.02747	0.03138
1981	4	0.14412	0.02362	0.0905	0.02932	0.02088	0.0296	0.03803
1981	5	0.16341	0.02646	0.08242	0.03047	0.01846	0.03337	0.0546
1981	6	0.18678	0.02785	0.07907	0.03065	0.01704	0.03879	0.0701
1981	7	0.21417	0.02886	0.05839	0.02967	0.01536	0.04134	0.08779
1981	12	0.24037	0.03025	0.08626	0.04005	0.01089	0.06632	0.42804
1981	15	0.2817	0.02948	0.01349	0.04187	0.00553	0.08502	0.48029

YES

year	bracket	fed	state	ica	property	sales	corporate	overall
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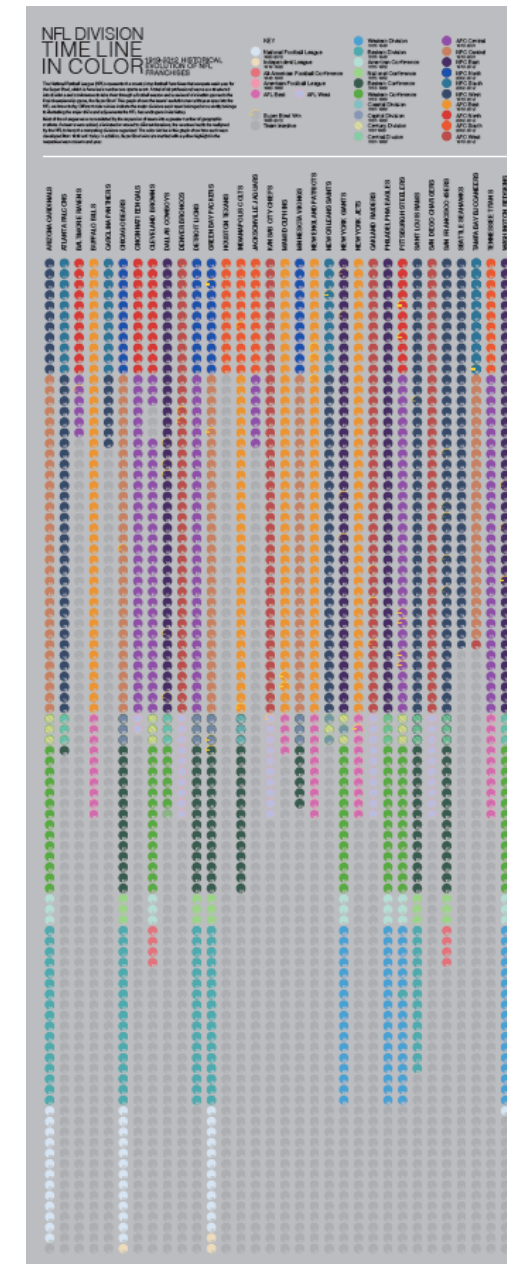
NO

03 Do not draw graphs by hand



<http://www.nytimes.com/newsgraphics/2013/11/30/football-conferences/>

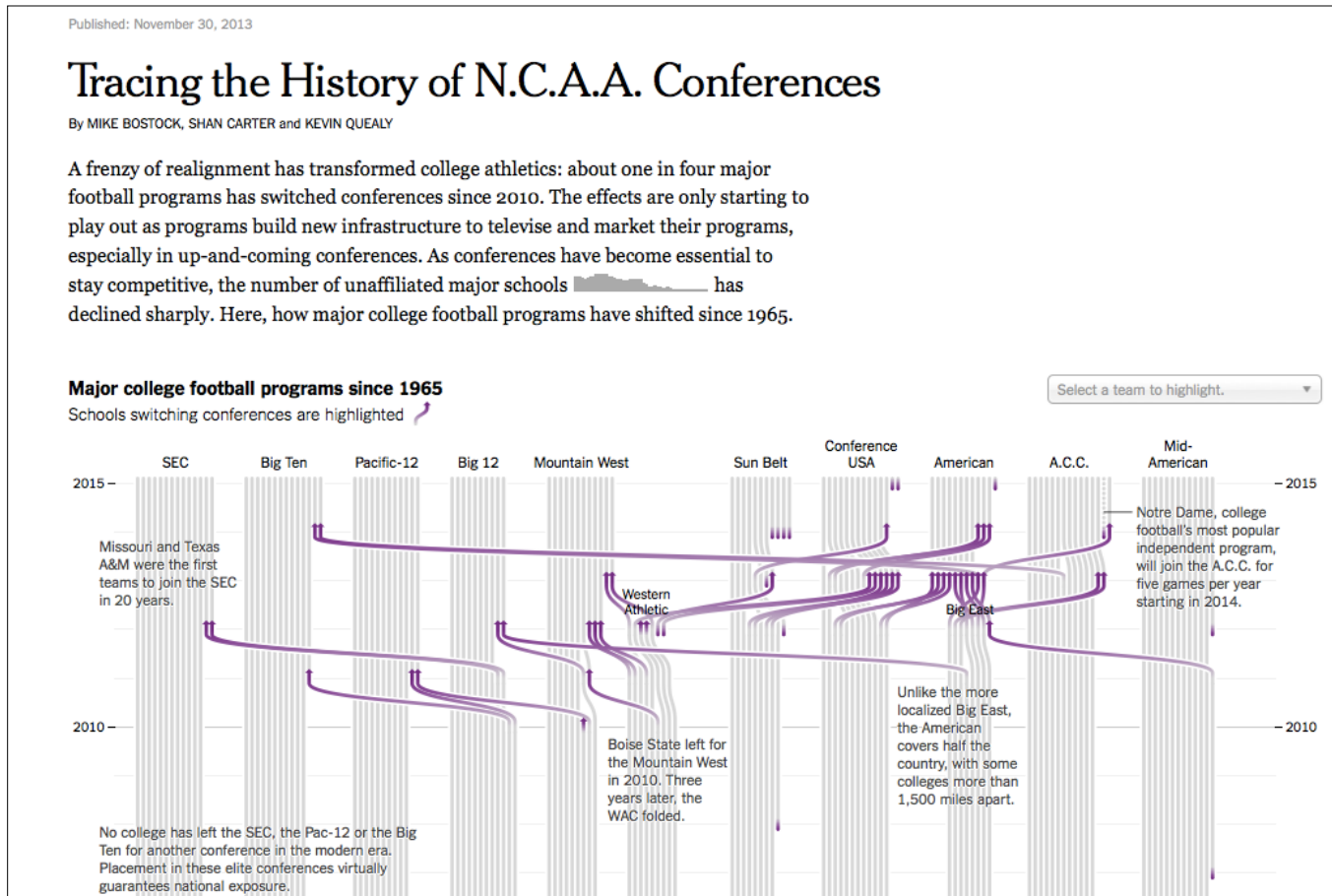
YES



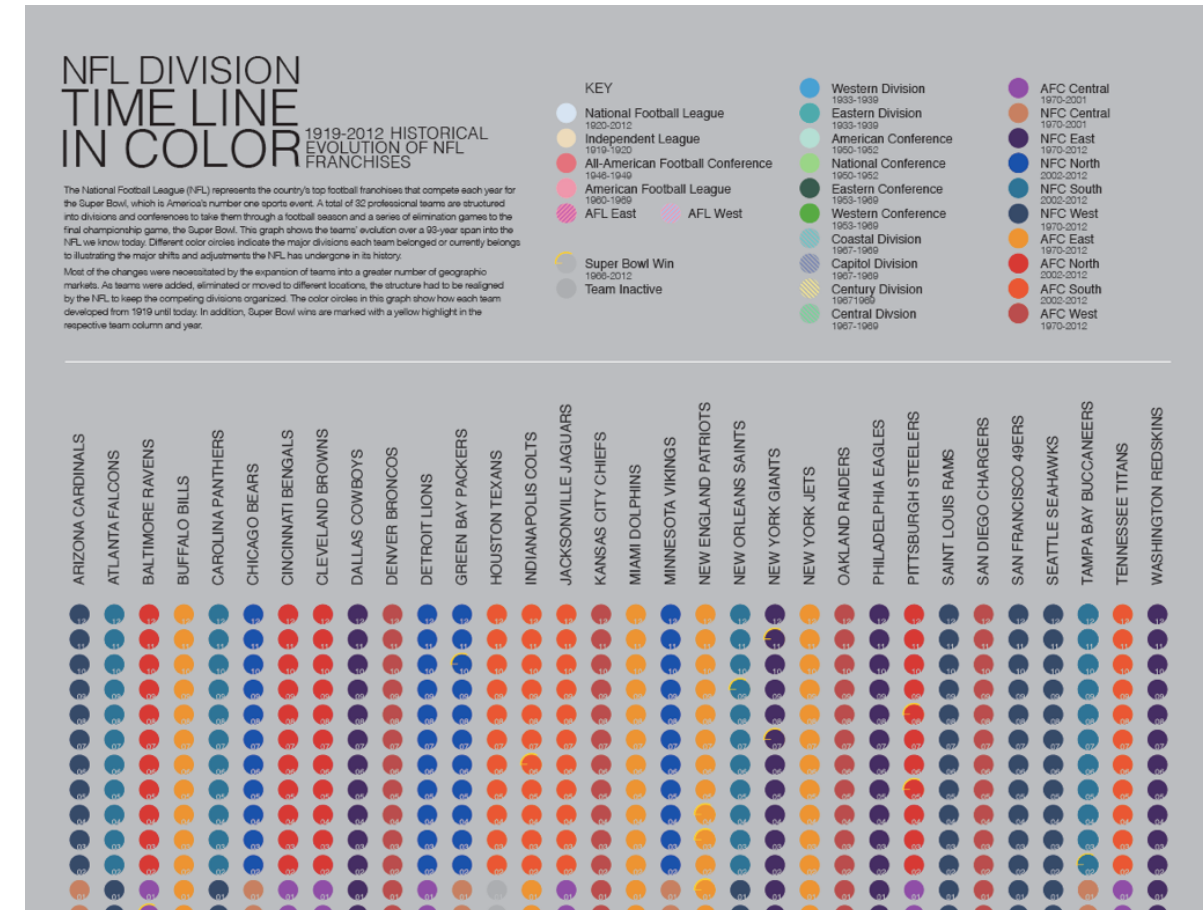
Student project: A.H.

NO

03 Do not draw graphs by hand



<http://www.nytimes.com/newsgraphics/2013/11/30/football-conferences/>

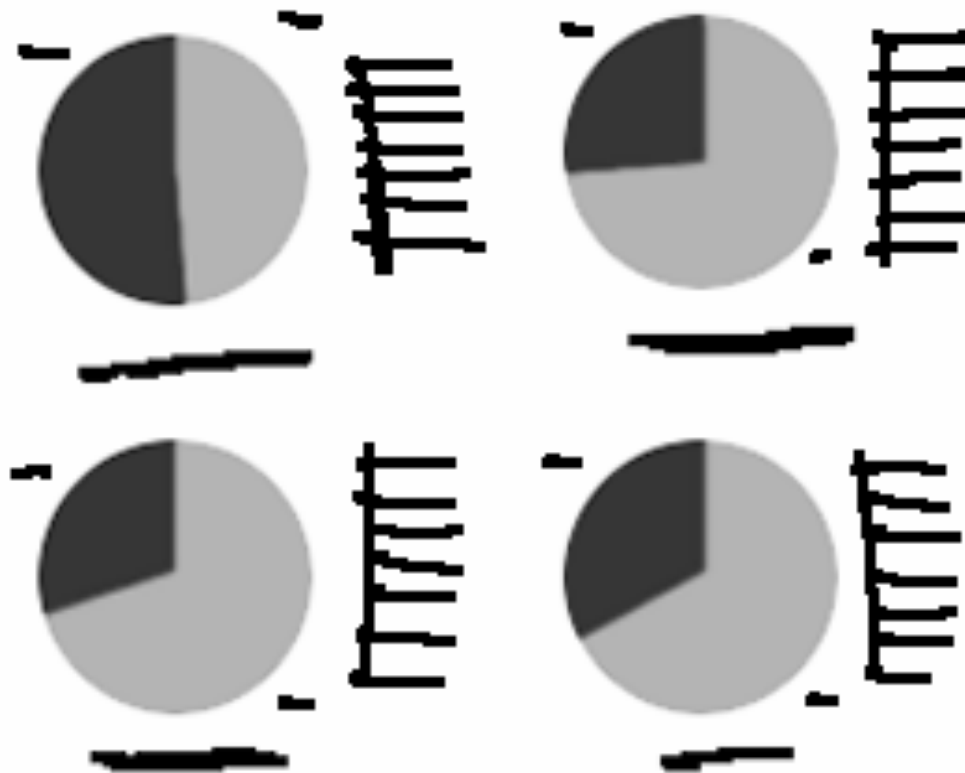


Student project: A.H.

YES

NO

04 Do not enlarge numbers

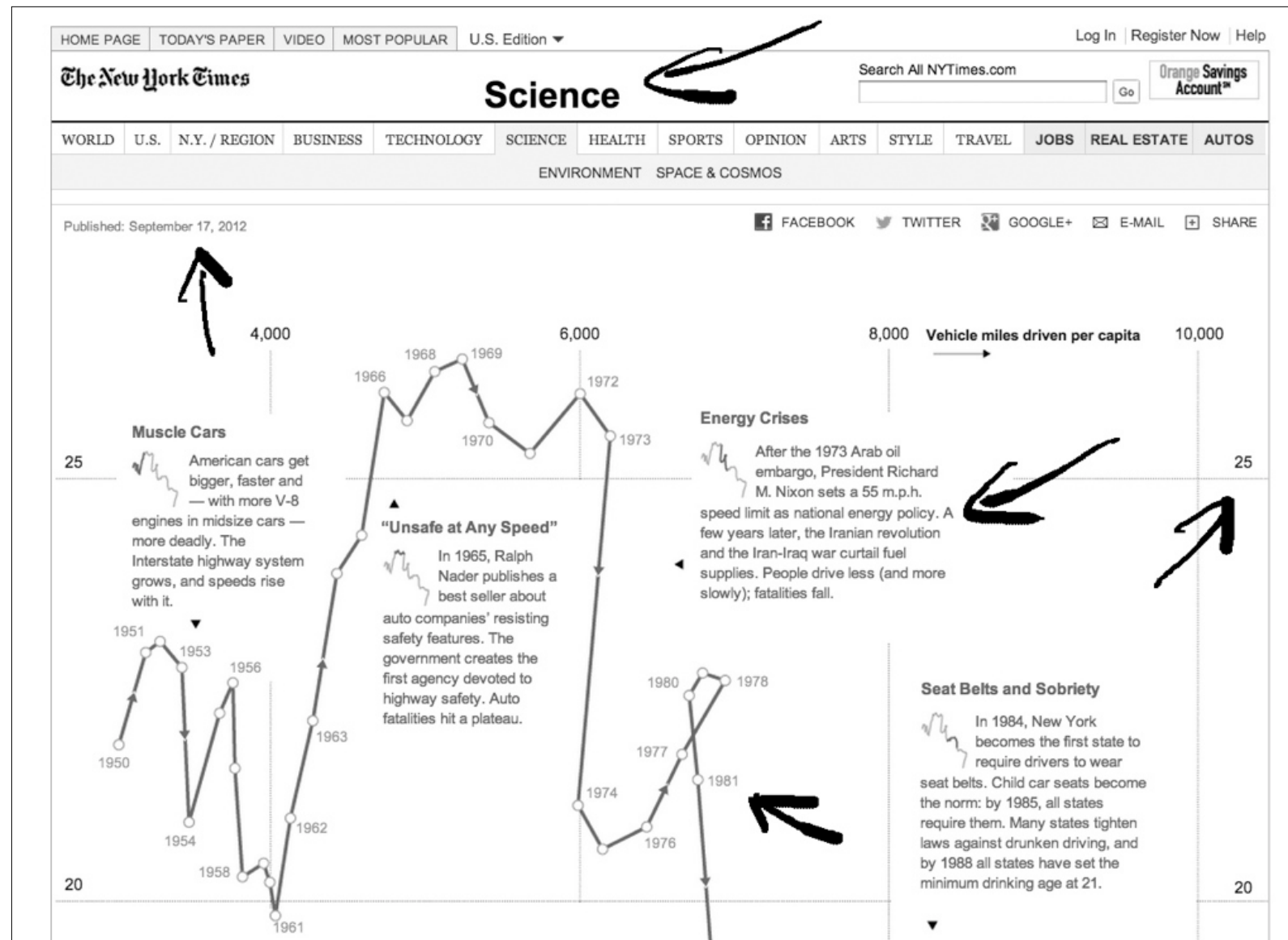


YES

55% BLA BLA
27% BLA BLA
30% BLA BLA
35% BLA BLA

NO

05 Use words, not just images



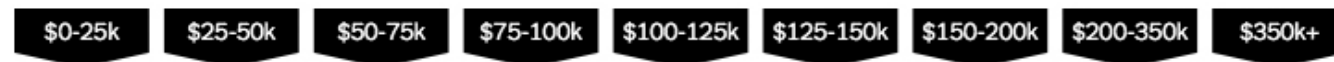
http://www.nytimes.com/interactive/2012/09/17/science/driving-safety-in-fits-and-starts.html?_r=0

the annotation layer

06 Use small multiples

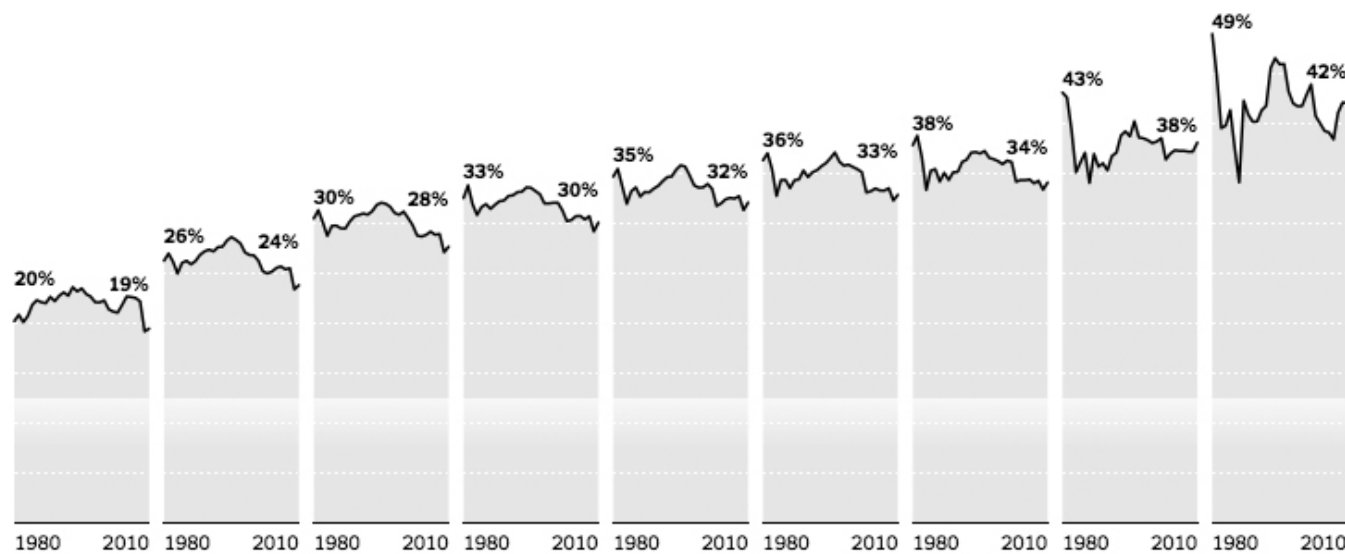
How the Tax Burden Has Changed

Most Americans paid less in taxes in 2010 than people with the same inflation-adjusted incomes paid in 1980, because of cuts in federal income taxes. At lower income levels, however, much of the savings was offset by increases in federal payroll taxes, state sales taxes and local property taxes. About half of households making less than \$25,000 saved nothing at all. [About the Data »](#) | [Related Article »](#)



Tax rates have fallen for most Americans, especially high earners.

Share of yearly income paid in federal, state and local taxes, by income bracket.



Average tax rates were lower for every income group in 2010 compared with 1980, but rates fluctuated during the intervening decades. Savings from federal income tax cuts in 1981 and 1986, under President Ronald Reagan, eroded as other taxes increased. New federal cuts in 2001 and 2003, under President George W. Bush, again reduced the total tax burden. Tax revenues rose in 2010 as the economy recovered from the recession.

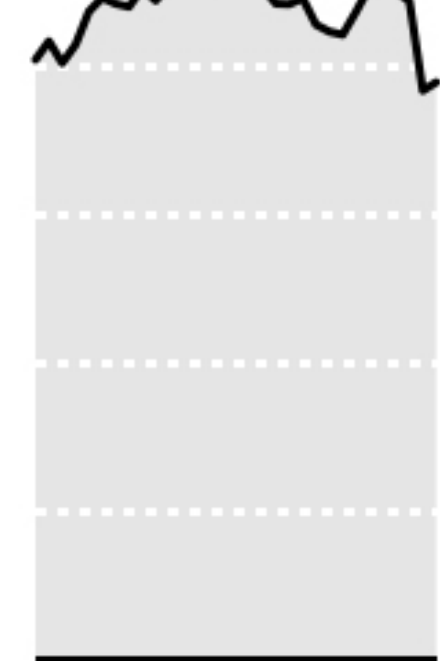
<http://www.nytimes.com/interactive/2012/11/30/us/tax-burden.html>

YES

\$0-25k

Tax rates

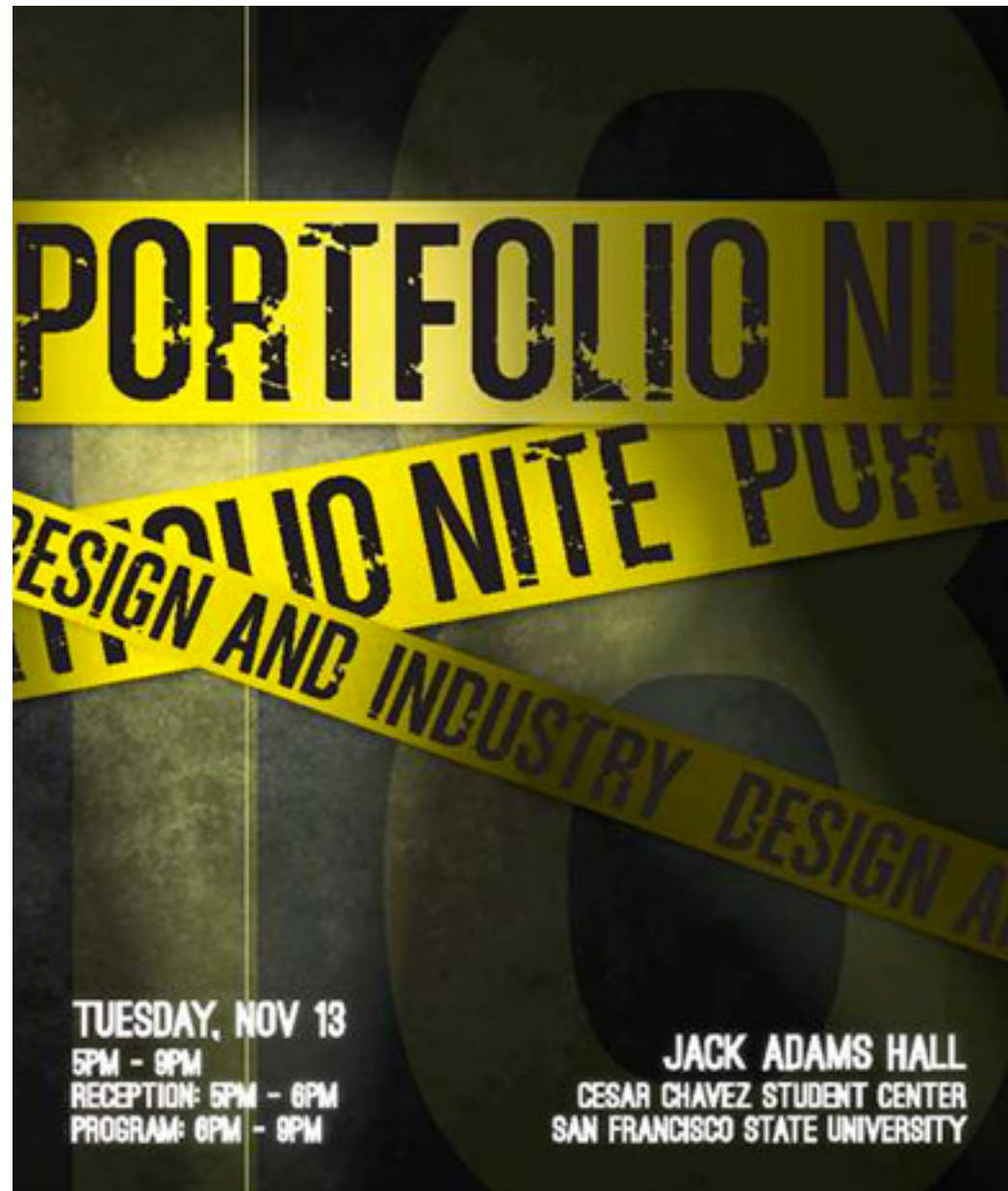
20% 19%



1980 2010

NO

07 Do not bungle the meaning



SFSU DAI AIGA Chapter

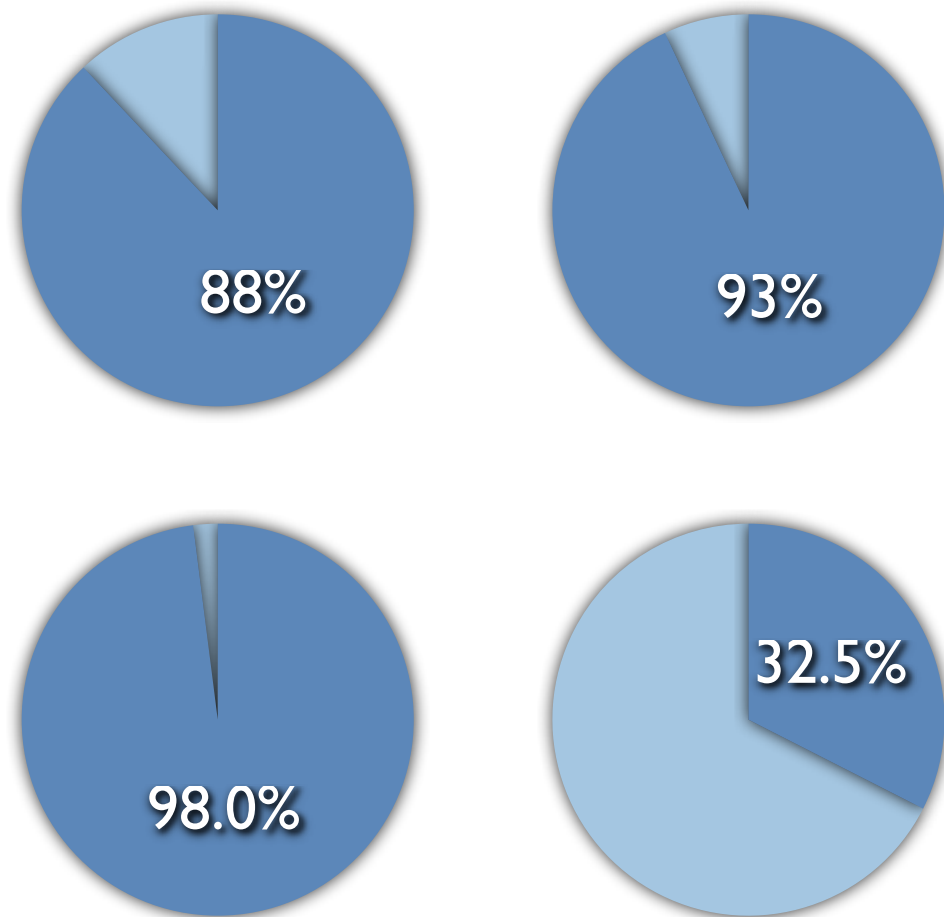
NO

08 Do not create op-art

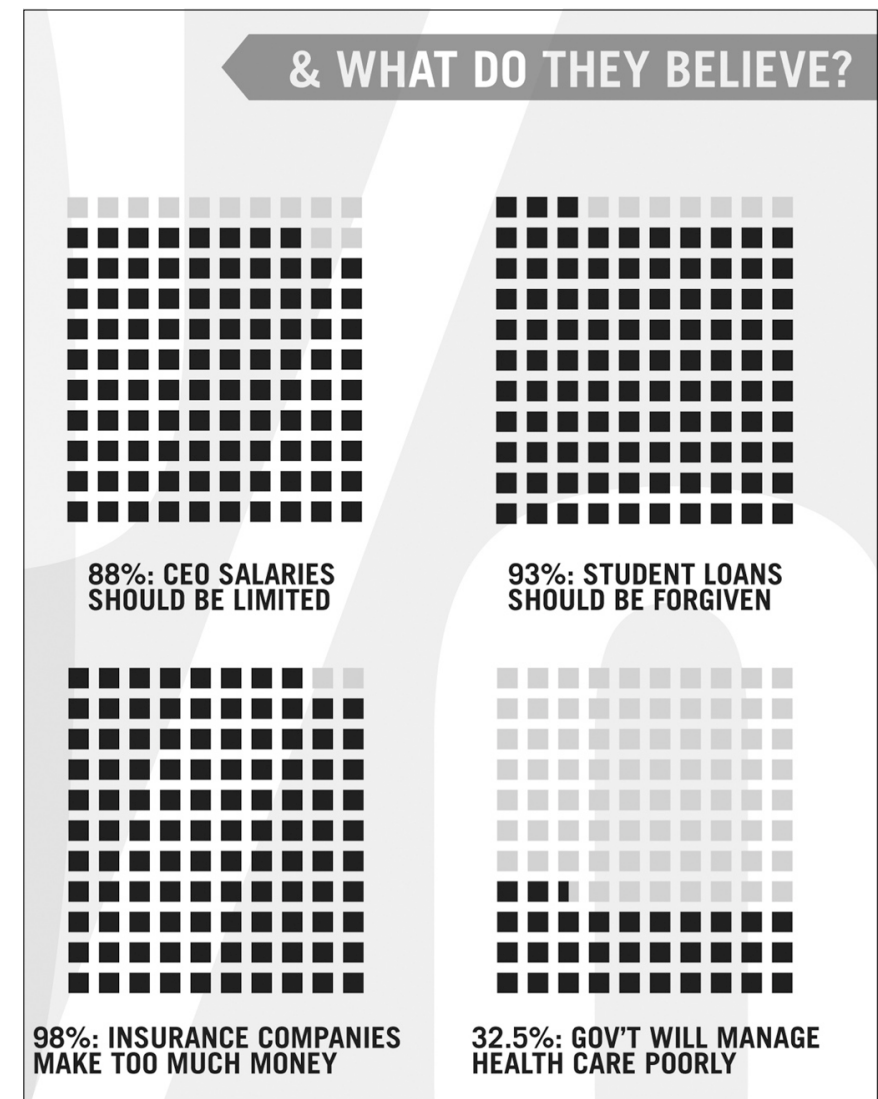
Do not make op-art (optical art) effects by using **bold condensed sans-serif fonts** where the strokes are the same width as the counters in the font and also the width of the spacing between the letters. This creates a very annoying, vibrating checkerboard effect. Do not use solid backgrounds, boxes, thick borders, or arbitrary bold type. If you are using solid backgrounds throughout, invert the whole image to see if it's better with the opposite values. On a Mac, use control-option-command-8 to instantly invert the colors of your screen on the computer. See if it would be better the other way around (black type on white background). If nothing is gained by the solid fills, then get rid of them.

NO

09 Do not use little dots for numbers



YES



Student project: J.L.

NO

09 Do not use little dots for numbers

*My problem is that
I have been persecuted
by an integer.*

GEORGE A. MILLER
MAGICAL NUMBER SEVEN, 1956



09 Do not use little dots for numbers

4-3-4-6-5-9-6-2-3

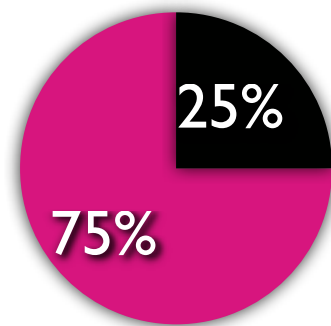
“chunks”

434-65-9623

09 Do not use little dots for numbers

(chunk data)

(do not un-chunk data)



Student project: T. B.

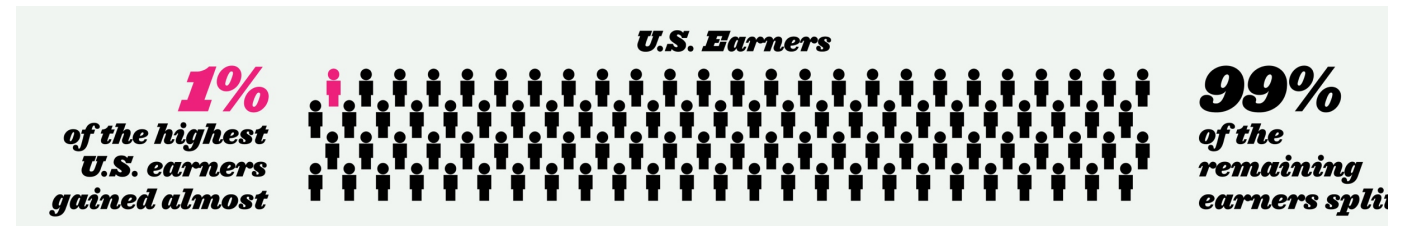
3/4

YES

NO

09 Do not use little dots for numbers

1%



Student project: T. B.

YES

NO

09 Do not use little dots for numbers

1/3

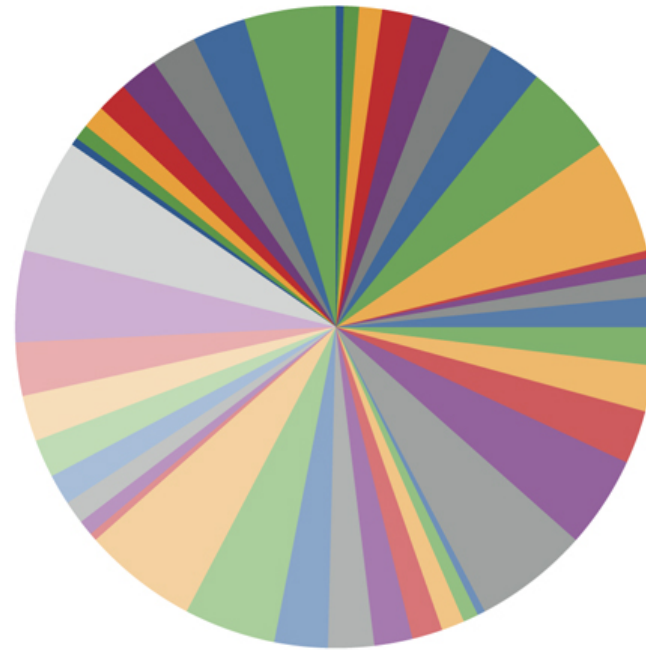


YES

NO

10 Do not use colors (to be memorized, or for sorting)

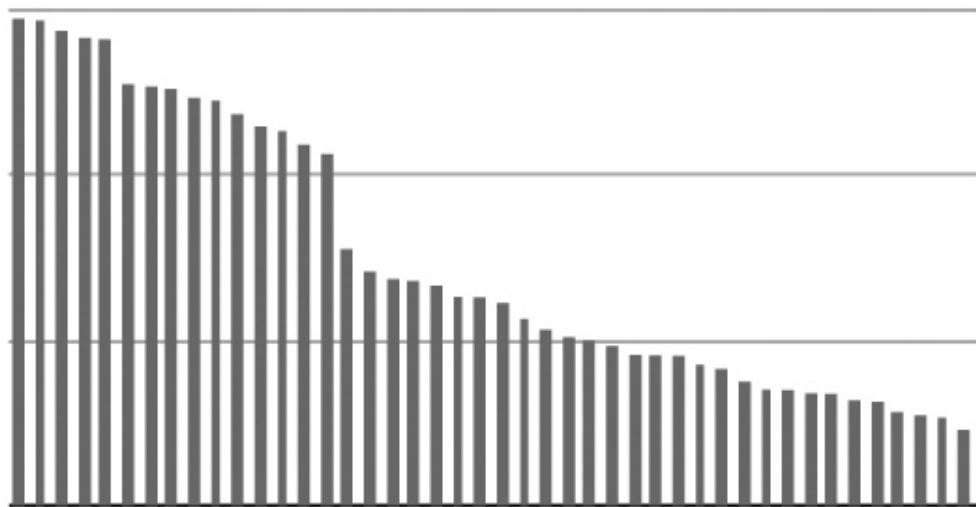
Taxes Chart



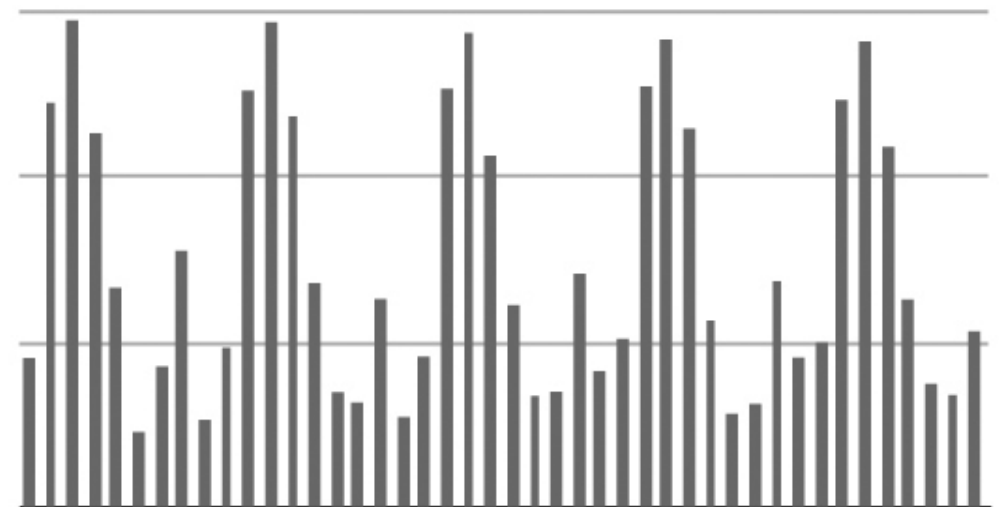
● 1980	● 1980	● 1980	● 1980	● 1980	● 1980
● 1980	● 1980	● 1980	● 1981	● 1981	● 1981
● 1981	● 1981	● 1981	● 1981	● 1981	● 1981
● 1982	● 1982	● 1982	● 1982	● 1982	● 1982
● 1982	● 1982	● 1982	● 1983	● 1983	● 1983
● 1983	● 1983	● 1983	● 1983	● 1983	● 1983
● 1984	● 1984	● 1984	● 1984	● 1984	● 1984

NO

11 Sort by value, not by category (alphabetical)

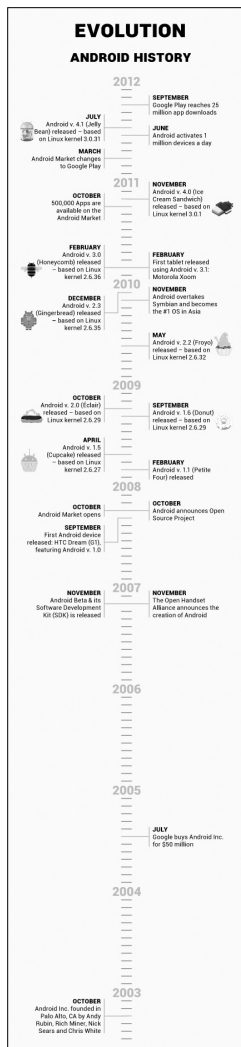


YES

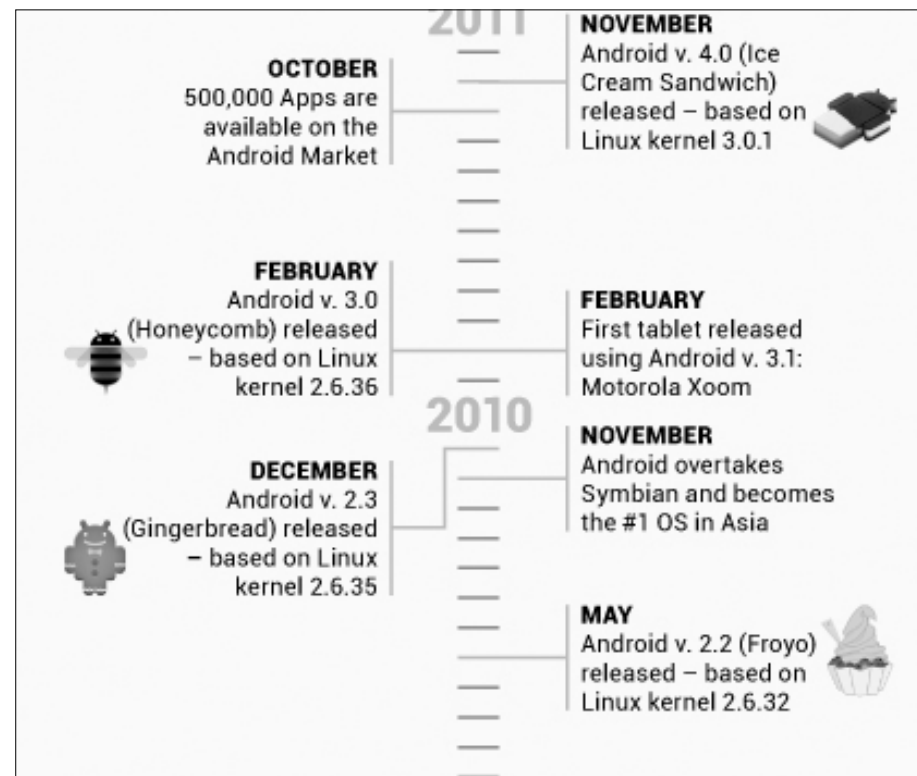


NO

12 Equally space time intervals in timelines

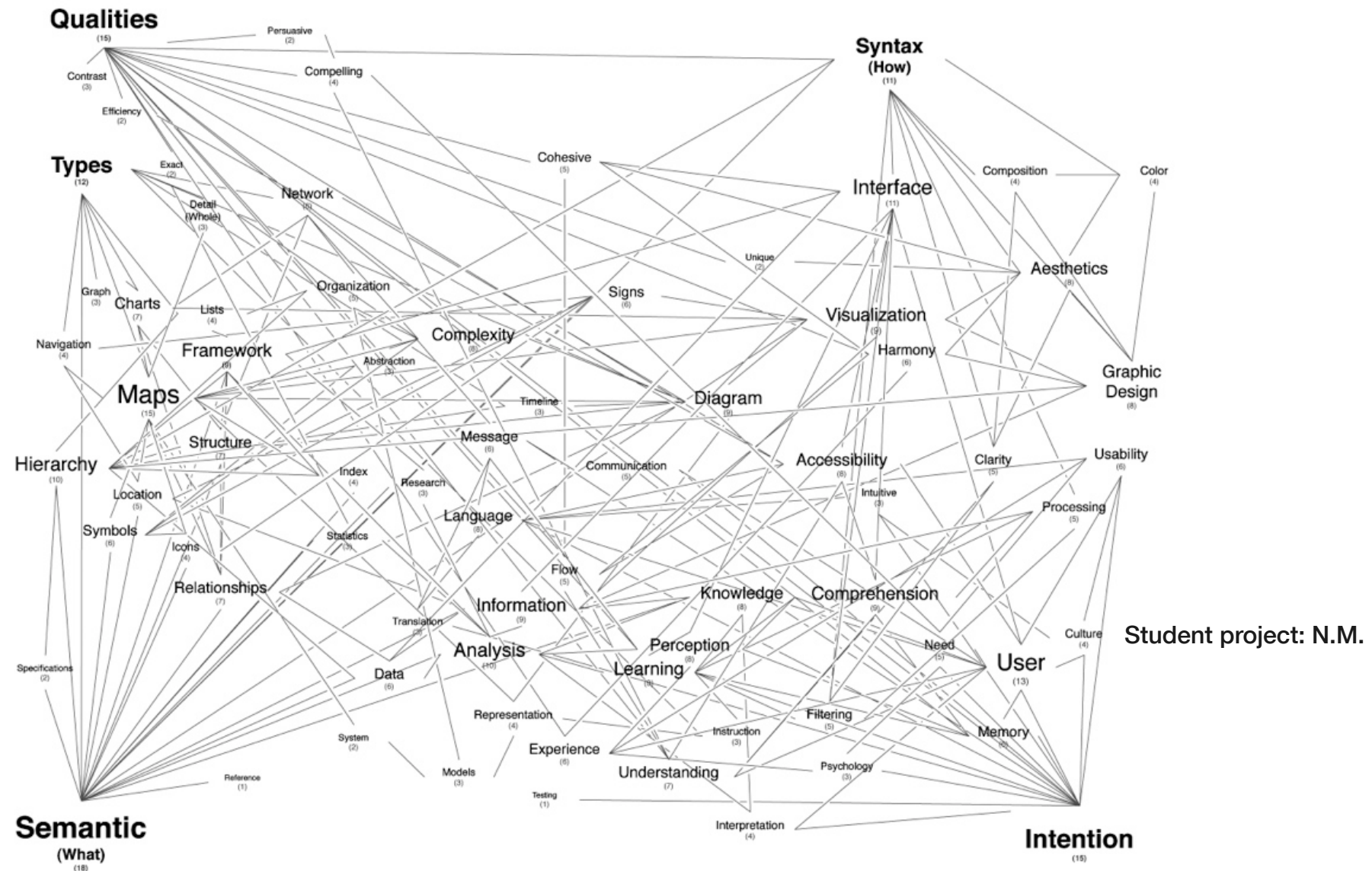


Student project: J.C.



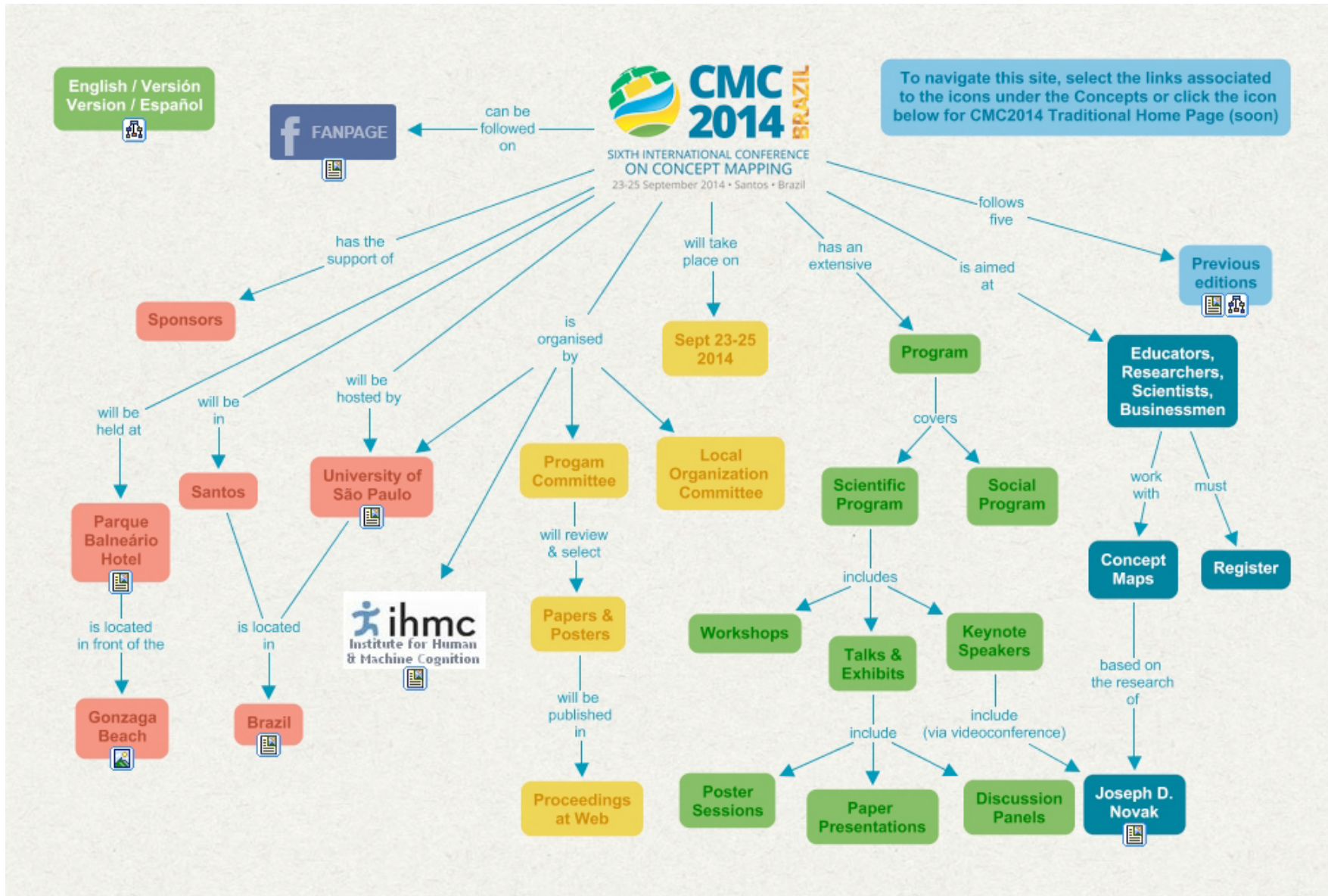
YES

13 Avoid meaningless concept maps



NO

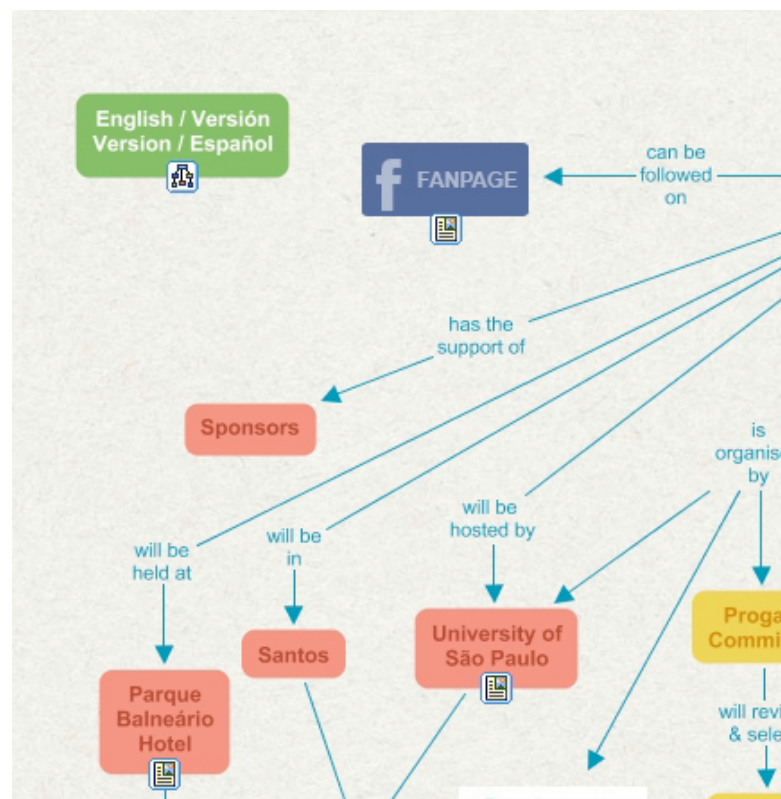
13 Avoid meaningless concept maps



<http://cmc.ihmc.us/>

NO

13 Avoid meaningless concept maps



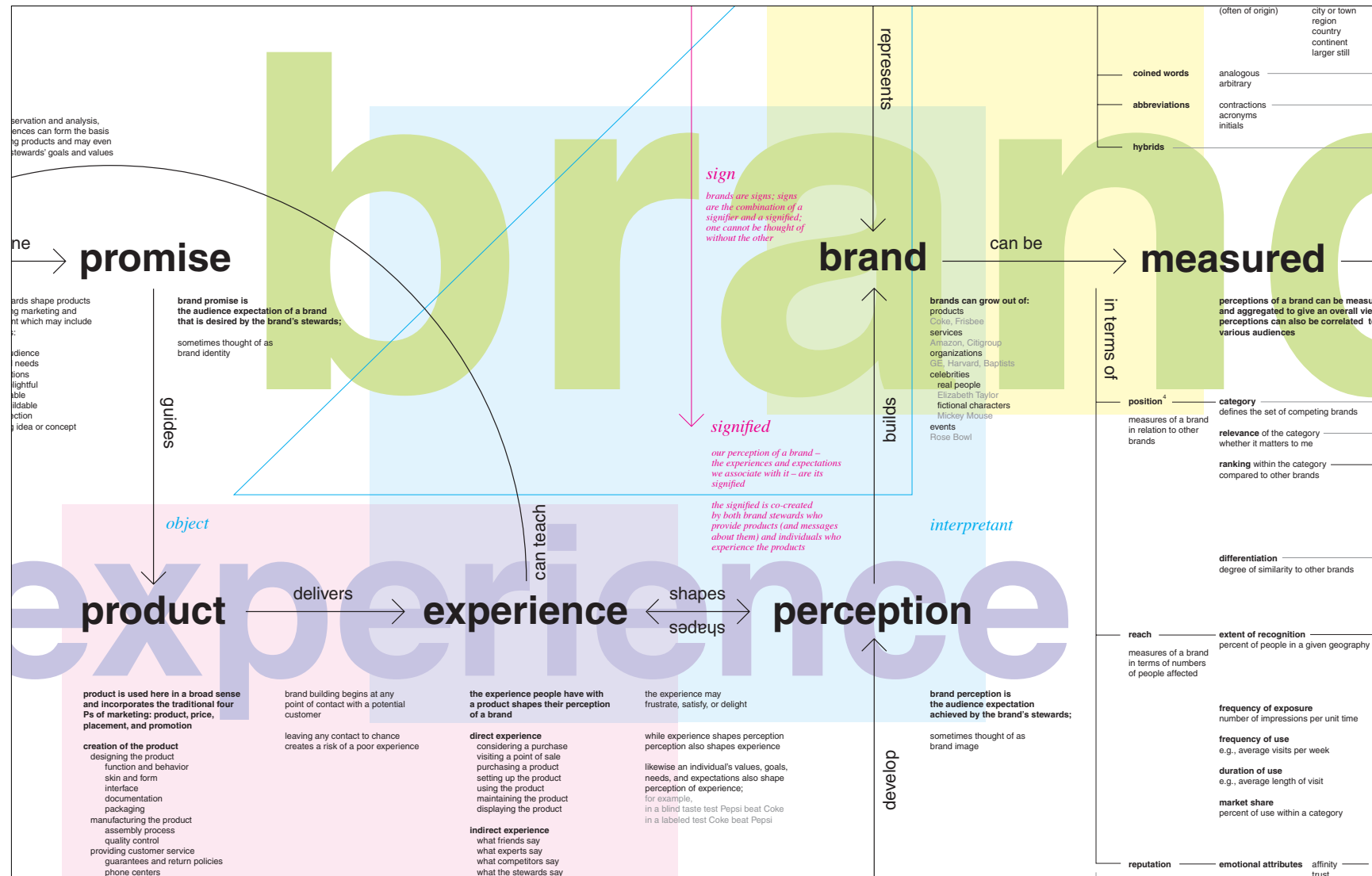
<http://cmc.ihmc.us/>

=

“The conference has the support of unnamed sponsors. It will be held at a beach hotel in Santos, Brazil. It will be hosted by the University of Sao Paulo, etc. etc.”

NO

13 Avoid meaningless concept maps



<http://www.dubberly.com/concept-maps/a-model-of-brand.html>

NO

13 Avoid meaningless concept maps

*important distinction
between
langue & parole*

FERDINAND DE SAUSSURE
LINGUISTICS, 1906-11

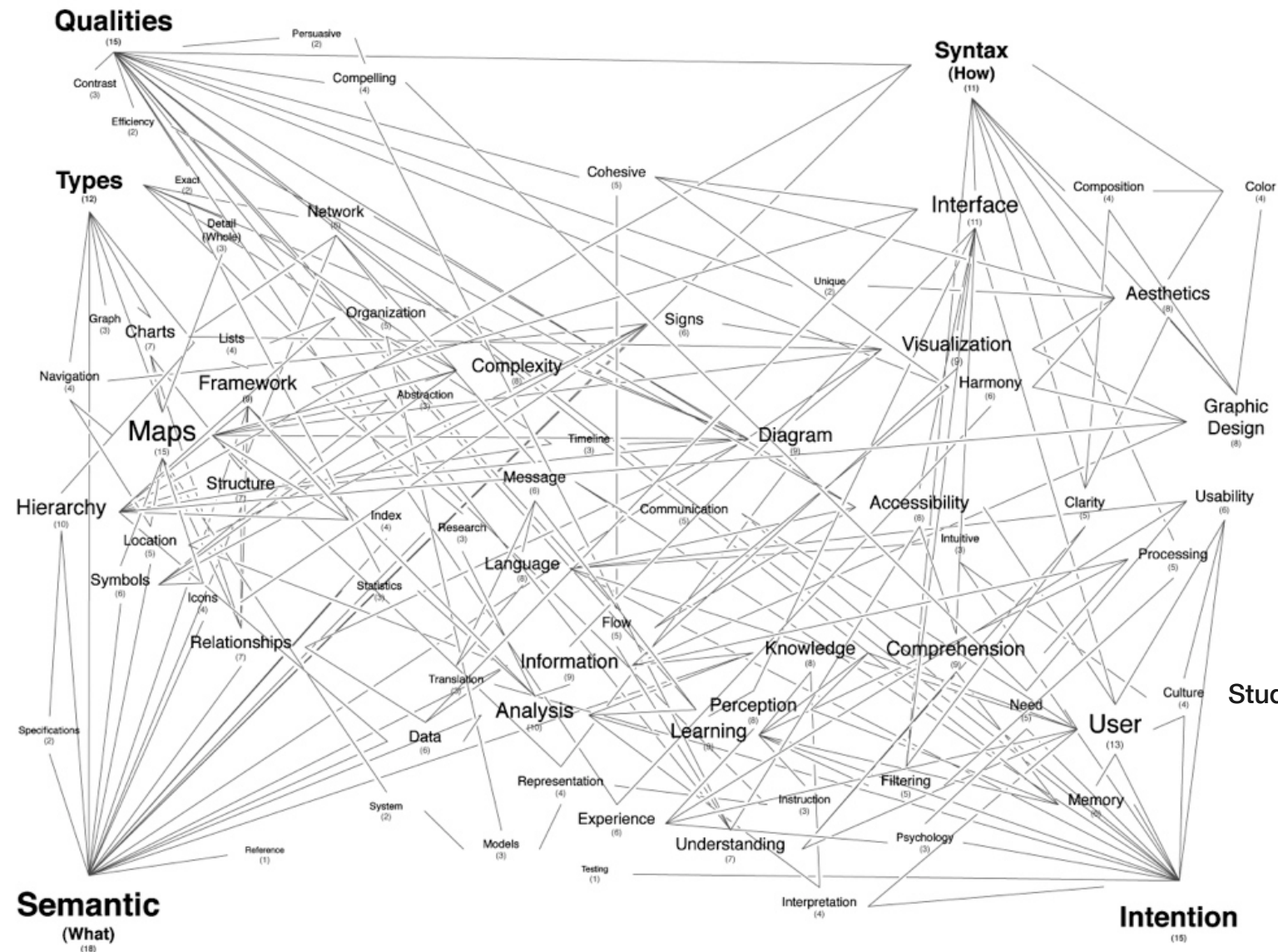


13 Avoid meaningless concept maps

y important sensible and tactile attributes, another, more
action of the reader's mental image of the book. This is
ords, **the fixed sequence of words making up sentences,**
ragraphs and so on, until the full complete book is



13 Avoid meaningless concept maps



Student project: N.M.

NO

13 Avoid meaningless concept maps



Student project: N.M.

NO

14 You can use small type

SEXUAL ORIENTATION AND GENDER IDENTITY WORKPLACE EQUALITY

EMPLOYMENT NON DISCRIMINATION ACT (ENDA)

ENDA offers Congress and American employers the opportunity to ensure workplace equality for everyone by protecting lesbian, gay, bisexual, and transgender employees and their co-workers from discrimination in employment.

28% of lesbian or gay workers reported that they have experienced discrimination or unfair treatment in the workplace.

47% of survey respondents experienced an adverse job action because they are transgender.

97% transgender employees have experienced mistreatment, harassment, or discrimination on the job including invasion of privacy, verbal abuse, and physical or sexual assault.

21% on average gay men earn less on the job than similarly qualified heterosexual men.

Protections

According to the Kaiser Family Foundation, employers are the primary source of health insurance in the United States, providing health benefits to 158 million people under 65. 8 Employer provided health insurance constitutes, on average, roughly one-fifth of an employee's total compensation, including wages and salary. For those LGBT employees with partners and children not eligible for these benefits, or for transgender workers and workers with transgender dependents who have discriminatory insurance coverage, the resulting disparity in compensation and perceived value is profound.

Category	Sexual Orientation	Gender Identity	Domestic Partner Benefits
FORTUNE 1000	69%	39%	21%
FORTUNE 500	88%	57%	35%
FORTUNE 100	94%	83%	60%
STATE RIGHTS	42%	24%	24%
FEDERAL GOVT	No Protections	No Protections	No Protections

Under the patchwork of state and local employment law that prohibits employment discrimination based on gender identity and sexual orientation, all told, 172 million of the 281 million citizens in the U.S. — more than three of every five citizens — live in jurisdictions that do not provide such protections.

Without ENDA, many hard-working men and women do not have basic protections against discrimination.

Legislative history

ENDA has been introduced in every Congress, except the 109th, since 1994, albeit without gender identity protections, but gained its best chance of passing after the Democratic Party broke twelve years of Republican Congressional rule in the 2006 midterm elections. However, some sponsors believed that even with a Democratic majority, ENDA did not have enough votes to pass the House of Representatives with transgender inclusion, and dropped it from the bill, which passed and subsequently died in the Senate. LGBT advocacy organizations were divided over support of the changed bill.

In 2009, a transgender inclusive ENDA (H.R. 3017) has been introduced by House Representative Barney Frank. Also in 2009, Sen. Jeff Merkley introduced the Senate version of the bill (S. 1584). President Barack Obama supports the bill's passage.

SENATE	CO-SPONSORS	30	3	34	36	44	43						43			
YEAR	BILL NUMBER	1994	1995	1996	1997	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
		S. 2084	S. 1551	S. 2056	S. 868	S. 1376	S. 1384	S. 234	S. 100	S. 100						S. 1584

HOUSE	CO-SPONSORS	137	142	160	173	193	180						194	184			
YEAR	BILL NUMBER	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
		H.R. 4636	H.R. 1663	H.R. 1663	H.R. 1663	H.R. 2010	H.R. 2010	H.R. 2010	H.R. 2010	H.R. 2010	H.R. 2010	H.R. 2010	H.R. 2010	H.R. 2010	H.R. 2010	H.R. 2010	H.R. 2010

Get involved

There are over 400 of organizations which are working to help to get the Employment Non Discrimination Act passed into law. Get engaged with local organizations where you can get more information on the bill as well as learn how you can get involved in this movement that is working for greater equality in the United States.

For a comprehensive list of organizations working to get the Employment Non Discrimination Act (ENDA) passed please visit:

unitedenda.org

ENDA

Employment Non Discrimination Act

BE INFORMED

Learn the most up-to-date information about supporters of the Employment Non-Discrimination Act.

SHARE

Use social media to share what your senators and representatives say about their support for ENDA.

TAKE ACTION

Help pass the Employment Non Discrimination Act (ENDA).

More Information

How a bill becomes a law

About 10,000 bills are introduced per year. Each is given a number and assigned to a committee. There are 21 committees in the House of Representatives and 13 committees in the Senate. Currently ENDA is pending in the Subcommittee stage of the legislative process.

Sign on with the bill. Congress can override a veto by a 2/3 majority vote in the House and the Senate. The bill then goes to the President for signing.

Student project: H.P.

YES

15 Do not screen type

Additional instructions, examples, and videos related to the assignments in this list may be found on iLearn. Many of the examples shown here are for reference only, you will be drawing your own objects and views as appropriate. 1 Milk carton orthographic 5pts Draw the six views of the milk carton using light lines for the projection lines between the views. Use darker lines for the actual object lines. Label each view: front, top, right side, bottom, left side, back. Draw a border around the sheet (1/2" from the edge) and a 3/4" title block at the bottom. Include the drawing name, drawing number, your name and the date. Draw thin guidelines for your lettering and labels. This is a freehand drawing. Practice keeping the lines straight, parallel, and even in thickness and value.

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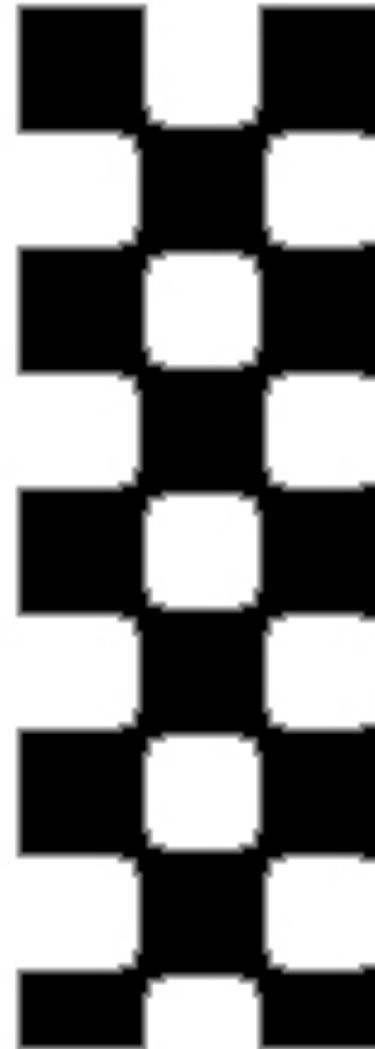
Additional instructions, examples, and videos related to the assignments in this list may be found on iLearn. Many of the examples shown here are for reference only, you will be drawing your own objects and views as appropriate. 1 Milk carton orthographic 5pts Draw the six views of the milk carton using light lines for the projection lines between the views. Use darker lines for the actual object lines. Label each view: front, top, right side, bottom, left side, back. Draw a border around the sheet (1/2" from the edge) and a 3/4" title block at the bottom. Include the drawing name, drawing number, your name and the date. Draw thin guidelines for your lettering and labels. This is a freehand drawing. Practice keeping the lines straight, parallel, and even in thickness and value.

NO

15 Do not screen type



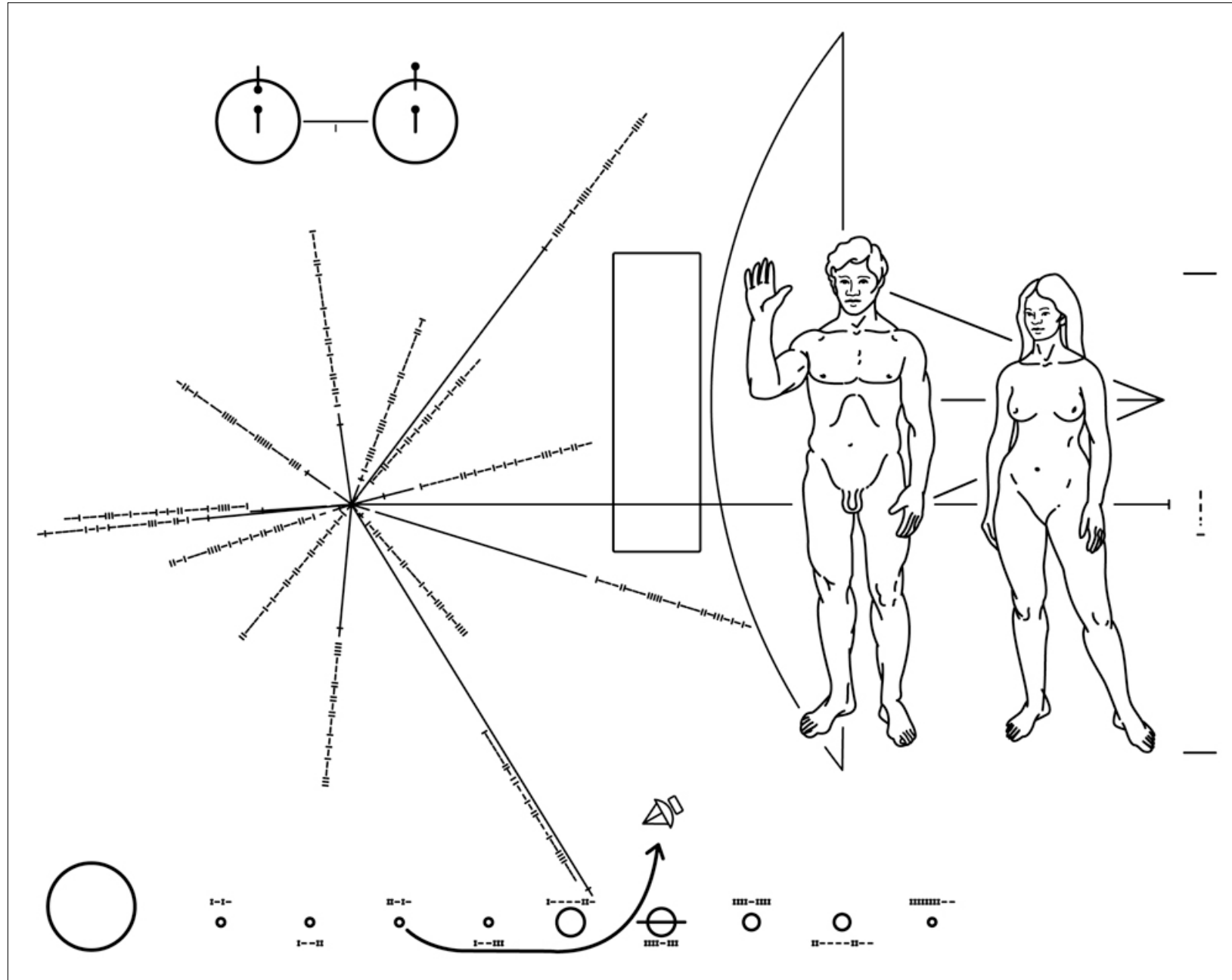
*50% black (gray)
(as seen on screen)*



*50% black (gray)
(as printed on paper)*

NO

16 Psychology of perception



http://en.wikipedia.org/wiki/Pioneer_plaque

16 Psychology of perception

Papers by Pino Trogu:

The Four-Second Window

bit.ly/Ve2mph

The Double Constraints of Convention and Cognition in Successful Graphic Design

bit.ly/12zLinL

PINO TROGU – SF STATE

PROJECT 4 CHECKLIST

Small Handbook of Information Design:
16 Principles for Better Data Visualizations

DAI 523 INFORMATION DESIGN 1: DATA VISUALIZATION
FALL 2013

**Booklet and online version
of small handbook:
bit.ly/1bhDU4y**

Thanks (and apologies) to my students for
showing details from their various projects.

[go to first slide](#)