Interdisciplinary Information Design Course

Conveyors of Information: Data, Information Design *and* Storytelling

Presented by:

Architectural Technology (ARCH) department, Communication Design (COMD) department,
and Computer Systems Technology (CST) department

"When designing, we need to always think about the content that the data represents, not the numbers. It's never about numbers, technology or any design itself, it is always about the ideas and the stories.

People think data will solve our problems, but we invented that data, so we are the ones actually solving them. No data is perfect, nor objective; it's actually a very subjective process."

Giorgia Lupi, Information Designer, Partner at Pentagram, advocate for Data Humanism – 11. 08. 2018

Dear Data is a year-long, analog data drawing project by Giorgia Lupi and Stefanie Posavec, two award-winning information designers living on different sides of the Atlantic. (http://www.dear-data.com/theproject)

Conveyors of Information | DATA · INFORMATION DESIGN · STORYTELLING

Overview of Semester Information Design

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1. Physical concepts related to storage, transfer and retrieval of information (data)

2. Behavioral/Ethical how information affects conduct and concerns over data: privacy, truthfulness, reliably sourced, alternative motivations, etc.

3. Semantic principles of design for communication: narrative, structure and storytelling

Woking with Information to Tell a Story

1. Information Collection and Organization

2. Patterns or relationships from data

3. *Representation of data* - visualization

4. Storytelling

Dr. John Snow, 1854 (CC BY 4.0 https://creativecommons.org/licenses/by/4.0)

Story implies audience:

a. Understanding your viewer and their needs

b. When representing data what questions do viewers have?

c. With complex data it might be necessary to represent the data more than once and in different forms to help readers understand.[1]

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1	state	statefips	county	countyfips	name_e	fips	UnempRate	subprime	pos_score	has_tot_co	pct_blackn	pct_whiter	pct_hispan	med_inc	pct_homec	inc_ineq	pct_ba	pct_dem	pct_rep	vote_cat
2	Alabama	01	Autauga Co	001	Autauga Co	01001	0.052	0.35512	656.256	0.381663	0.184199	0.762351	0.025229	52537.97	0.750985	0.41	0.219413	0.239569	0.734358	1
3	Alabama	01	Baldwin Co	003	Baldwin Co	01003	0.055	0.281956	673.8991	0.317863	0.093266	0.831814	0.045135	52003	0.736581	0.4722	0.294981	0.195653	0.773515	1
4	Alabama	01	Barbour Co	005	Barbour Co	01005	0.089	0.462243	635.254	0.445946	0.461964	0.461116	0.04731	35676.76	0.675888	0.4608	0.136069	0.466603	0.522714	2
5	Alabama	01	Bibb Count	007	Bibb Count	01007	0.066	0.426752	634.7197	0.482866	0.211495	0.747627	0.020086	38029.58	0.76985	0.4365	0.102404	0.21422	0.769662	1
6	Alabama	01	Blount Cou	009	Blount Cou	01009	0.054	0.345763	657.6893	0.385301	0.014693	0.881603	0.084656	44462.29	0.784179	0.4134	0.122631	0.084699	0.898519	1
7	Alabama	01	Bullock Cou	011	Bullock Cou	01011	0.078	0.482759	621.0966	0.45098	0.714486	0.221827	0.040307	34845.77	0.727977	0.446	0.140876	0.750904	0.242289	4
8	Alabama	01	Butler Cou	013	Butler Cou	01013	0.075	0.443503	633.8842	0.454039	0.437314	0.536276	0.011353	31608.88	0.69914	0.4591	0.143223	0.427864	0.563155	2
9	Alabama	01	Calhoun Co	015	Calhoun Co	01015	0.07	0.4	646.6937	0.437045	0.20639	0.732775	0.034279	42346	0.693838	0.4219	0.173001	0.278559	0.692397	1
10	Alabama	01	Chambers C	017	Chambers C	01017	0.06	0.417785	638.396	0.45677	0.402306	0.576428	0.004635	32874.4	0.671247	0.5023	0.122203	0.418276	0.566338	2
11	Alabama	01	Cherokee C	019	Cherokee C	01019	0.054	0.387179	651.3282	0.406566	0.047615	0.918862	0.0144	35024.98	0.77341	0.4658	0.13735	0.145101	0.838713	1
12	Alabama	01	Chilton Cou	021	Chilton Cou	01021	0.057	0.456934	638.9299	0.466187	0.101368	0.807245	0.076883	41835.14	0.753639	0.4517	0.135338	0.159354	0.825418	1
13	Alabama	01	Choctaw Co	023	Choctaw Co	01023	0.091	0.421296	641.125	0.466368	0.43164	0.557434	0.004134	34366.19	0.821028	0.4866	0.127771	0.427766	0.564392	2
14	Alabama	01	Clarke Cou	025	Clarke Cou	01025	0.118	0.396122	641.9031	0.399457	0.450081	0.534839	0.004343	30988.14	0.701461	0.5249	0.119338	0.441558	0.549552	2
15	Alabama	01	Clay Count	027	Clay Count	01027	0.062	0.363985	647.1456	0.402256	0.145847	0.80047	0.031138	35328.34	0.733489	0.4373	0.085759	0.187766	0.7958	1
16	Alabama	01	Cleburne C	029	Cleburne C	01029	0.06	0.340517	657.6121	0.372881	0.028686	0.927085	0.022081	37052.41	0.776379	0.4432	0.105646	0.104715	0.878445	1
17	Alabama	01	Coffee Cou	031	Coffee Cou	01031	0.059	0.319497	664.8553	0.315536	0.169065	0.718251	0.063794	45612.67	0.693335	0.4474	0.232081	0.204456	0.771462	1
18	Alabama	01	Colbert Cou	033	Colbert Cou	01033	0.079	0.337676	660.4919	0.399358	0.159494	0.790938	0.023417	39961.9	0.711879	0.4361	0.176432	0.296272	0.678876	1
19	Alabama	01	Conecuh Cou	035	Conecuh Cou	01035	0.092	0.415205	642.9474	0.423729	0.447747	0.510512	0.015864	24462.32	0.771968	0.4952	0.083203	0.469051	0.521626	2
20	Alabama	01	Coosa Cour	037	Coosa Cour	01037	0.067	0.452055	639	0.5	0.313328	0.65004	0.021161	32378.81	0.811966	0.4341	0.090655	0.3408	0.646372	1
21	Alabama	01	Covington	039	Covington	01039	0.071	0.394822	647.1375	0.468354	0.128006	0.83567	0.014889	36299.51	0.756326	0.4637	0.145555	0.150398	0.835883	1
22	Alabama	01	Crenshaw C	041	Crenshaw C	01041	0.06	0.363281	645.7578	0.378378	0.234539	0.708351	0.01643	37393.82	0.722898	0.4589	0.124698	0.265995	0.721529	1
23	Alabama	01	Cullman Co	043	Cullman Co	01043	0.053	0.352482	658.5319	0.382639	0.010983	0.923092	0.043152	37862	0.748555	0.4438	0.127775	0.100059	0.878105	1
24	Alabama	01	Dale County	045	Dale County	01045	0.064	0.369478	653.9224	0.369594	0.19051	0.702137	0.058565	44526.37	0.613919	0.434	0.168674	0.236773	0.741151	1
25	Alabama	01	Dallas Cour	047	Dallas Cour	01047	0.096	0.511521	619.4147	0.569925	0.69574	0.28662	0.003743	26525.79	0.608401	0.5281	0.144626	0.684784	0.308809	4
26	Alabama	01	DeKalb Cou	049	DeKalb Cou	01049	0.06	0.370441	650.9636	0.397018	0.016588	0.810409	0.139601	36559	0.67943	0.4639	0.100196	0.141149	0.834892	1
27	Alabama	01	Elmore Cou	051	Elmore Cou	01051	0.051	0.330677	666.5123	0.324154	0.205339	0.739956	0.027141	52502	0.721425	0.462	0.207473	0.228587	0.748381	1
28	Alabama	01	Escambia C	053	Escambia C	01053	0.07	0.424635	637.4149	0.515103	0.324352	0.6093	0.020188	31459.71	0.704448	0.4742	0.125203	0.308815	0.675869	1
29	Alabama	01	Etowah Cou	055	Etowah Cou	01055	0.061	0.380531	650.7227	0.425014	0.153228	0.787066	0.035236	43346	0.744966	0.4125	0.172954	0.238073	0.739108	1
30	Alabama	01	Fayette Cou	057	Fayette Cou	01057	0.07	0.36	653.4545	0.407942	0.122275	0.855456	0.007521	33183.77	0.725994	0.467	0.138165	0.165691	0.818082	1
31	Alabama	01	Franklin Co	059	Franklin Co	01059	0.064	0.367983	647.0853	0.440816	0.043931	0.788618	0.154186	35492.54	0.682943	0.4386	0.109347	0.183772	0.791803	1
32	Alabama	01	Geneva Cou	061	Geneva Cou	01061	0.059	0.400818	645.5562	0.418327	0.095354	0.842109	0.035135	36311.52	0.73151	0.448	0.112422	0.130543	0.854876	1
33	Alabama	01	Greene Cou	063	Greene Cou	01063	0.11	0.51938	614.7287	0.574627	0.807229	0.177199	0.004433	22196.6	0.714199	0.4876	0.115149	0.823941	0.172357	4
34	Alabama	01	Hale Count	065	Hale Count	01065	0.078	0.443548	627.8589	0.513619	0.582992	0.398103	0.010654	30876.01	0.768167	0.5082	0.139811	0.595755	0.396005	3

Raw Data: Spreadsheets are hard to read and make extracting meaning difficult.

Visualizations should provide insight in the data – revealing interesting stories in the data

Insightful *The discovery of non-trivial, complex, deep, unexpected, or relevant truths about the information.*

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a. What's the point of the info graphic?
b. What's the story being told?
c. Putting data points into context: labeling and annotation.

Structuring data as a story (*Data Journalism*).[1]

At their best **Data Visualizations** are:

1. **Functional** – show trends and patterns in the data
2. **Beautiful** – attractive and inviting
3. **Insightful** – reveals something that provides context
4. **Enlightening** – might change preconceived ideas[1]

Looking to **Newsrooms** as a model for Information Design:

Inverted Pyramid (of Data Journalism)
1. Compile
2. Clean
3. Context
4. Combine
5. Communicate[2]

In 1984 **William Cleveland and Robert McGill** studied overall patterns in the data and developed a scale for different ways to represent data from highly accurate to more general.
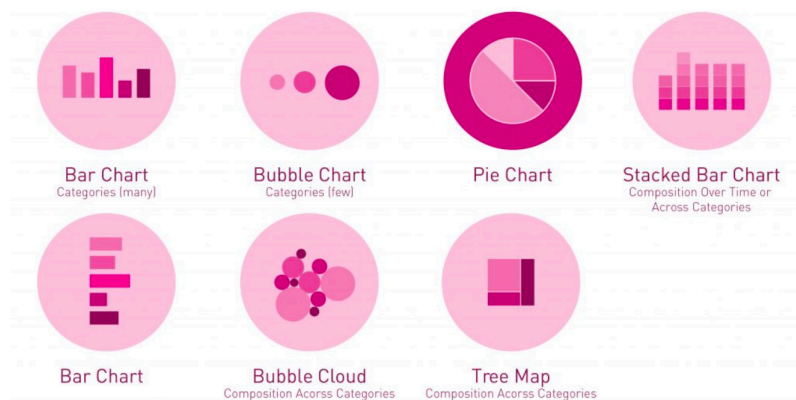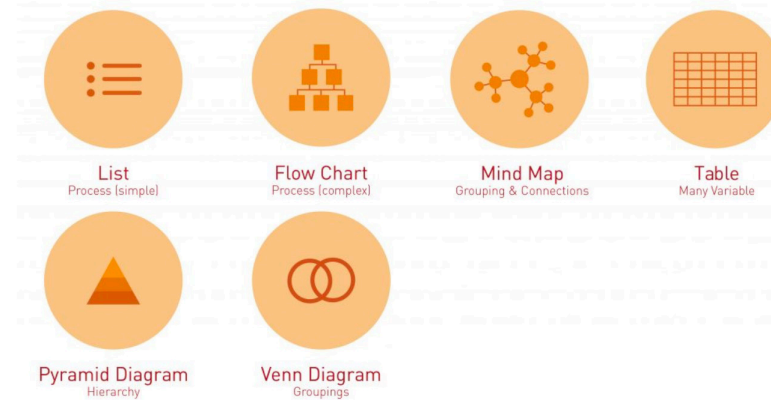
1. INFORM

Convey a Single Data Point

| Single Number | Chart | Pictogram |

3. TRANSFORMATIONS

Showing Transformations Over Time or Via Location

Line Chart
Many Series Over Time

Area Chart
Few Series Over Time

Timeline
Distinct Dates Over Time

Map
Series Based on Locati

2. COMPARISONS

Categorical Data

Bar Chart
Categories (many)

Bubble Chart
Categories (few)

Pie Chart

Stacked Bar Chart
Composition Over Time or
Across Categories

Bar Chart

Bubble Cloud
Composition Acorss Categories

Tree Map
Composition Acorss Categories

4. ORGANIZATION

Arranging Content by Groupings, Rankings, or Process

List
Process (simple)

Flow Chart
Process (complex)

Mind Map
Grouping & Connections

Table
Many Variable

Pyramid Diagram
Hierarchy

Venn Diagram
Groupings

Data Visualization Tools – accessible to individuals many of which are open source. Here are just a few:

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1. **Open Refine:** Data Clear and Refine – clearing data
2. **Datawrapper or Tableau** (Public) – visualizing data
3. **ArcGIS or CARTO** – creating maps
4. **D3** – (data driven documents) involves writing code to create graphs.

Implications for **City Tech – Collaborations?**

a. Stories based on data can be told in a wide variety of subject matter including: ecology, science, history, social justice, economics, etc.

b. Rich variety of disciplines that could serve as **Content Creators** and could benefit from visualizers and visualizations.

" By my definition, information graphics are illustrations [visuals], built on a foundation of research, that exist primarily to convey information. **"**

Jen Christiansen, Senior Graphics Editor, Scientific American – 10. 25. 2018

THANK YOU!

Additional Sources:
Bradshaw, Paul. Alberto, Cairo. "Doing Journalism with Data: First Steps, Skills and Tools" *European Journalism Centre*, 2016. (Datajournalism.com)
Velasco, Juan. Velasco, Samuel. "Information Graphics and Data Visualization" *5WAcademy*, 2020. (www.5w-consulting.com)

Endnotes:

[1]Alberto, Cairo. "Doing Journalism with Data: First Steps, Skills and Tools" Ch. 05 "Telling stories with visualisation"
European Journalism Centre, 2016. (Datajournalism.com)

[2]Bradshaw, Paul. "Doing Journalism with Data: First Steps, Skills and Tools" Ch. 02 "Data journalism in the newsroom"*European Journalism Centre*, 2016. (Datajournalism.com)