## **Table of Contents**

Introduction	1
What Is Data Journalism?	2
Why Journalists Should Use Data	3
Why Is Data Journalism Important?	6
Filtering the Flow of Data	6
New Approaches to Storytelling	6
Like Photo Journalism with a Laptop	6
Data Journalism Is the Future	6
Number-Crunching Meets Word-Smithing	7
Updating Your Skills Set	7
A Remedy for Information Asymmetry	7 7 7 7
An Answer to Data-Driven PR	7
Providing Independent Interpretations of Official Information	8
Dealing with the Data Deluge	8
Our Lives Are Data	9
A Way to Save Time	9
An Essential Part of the Journalists' Toolkit	9
Adapting to Changes in Our Information Environment	10
A Way to See Things You Might Not Otherwise See	10
A Way To Tell Richer Stories	11
Some Favorite Examples	11
Do No Harm in the Las Vegas Sun	11
Government Employee Salary Database	12
Full-Text Visualization of the Iraqi War Logs, Associated Press	13
Murder Mysteries	15
Message Machine	16
Chartball	16
Data Journalism in Perspective	17
Computer-Assisted Reporting and Precision Journalism	18
Data Journalism and Computer-Assisted Reporting	21

2.	In The Newsroom	23
	The ABC's Data Journalism Play	24
	Our Team	26
	Where Did We Get the Data From?	27
	What Did We Learn?	27
	The Big Picture: Some Ideas	27
	Data Journalism at the BBC	28
	Make It Personal	29
	Simple Tools	29
	Mining The Data	30
	Understanding An Issue	31
	Team Overview	31
	How the News Apps Team at the Chicago Tribune Works	32
	Behind the Scenes at the Guardian Datablog	34
	Data Journalism at the Zeit Online	37
	How to Hire a Hacker	41
	Harnessing External Expertise Through Hackathons	44
	Following the Money: Data Journalism and Cross-Border Collaboration	48
	Our Stories Come As Code	51
	Kaas & Mulvad: Semi-Finished Content for Stakeholder Groups	54
	Processes: Innovative IT Plus Analysis	56
	Value Created: Personal and Firm Brands and Revenue	57
	Key Insights of This Example	57
	Business Models for Data Journalism	58
3.	Case Studies	61
-	The Opportunity Gap	62
	A Nine Month Investigation into European Structural Funds	64
	1. Identify who keeps the data and how it is kept	65
	2. Download and prepare the data	65
	3. Create a database	65
	4. Double-checking and analysis	66
	The Eurozone Meltdown	66
	Covering the Public Purse with OpenSpending.org	71
	Finnish Parliamentary Elections and Campaign Funding	76
	1. Find data and developers	76
	2. Brainstorm for ideas	76
	3. Implement the idea on paper and on the Web	77
	4. Publish the data	78
	Electoral Hack in Realtime (Hacks/Hackers Buenos Aires)	78
	What Data Did We Use?	79

	How Was It Developed?	79
	Pros	80
	Cons	80
	Implications	80
	Data in the News: WikiLeaks	81
	Mapa76 Hackathon	84
	The Guardian Datablog's Coverage of the UK Riots	86
	Phase One: The Riots As They Happened	87
	Phase Two: Reading the Riots	88
	Illinois School Report Cards	88
	Hospital Billing	90
	Care Home Crisis	92
	The Tell-All Telephone	93
	Which Car Model? MOT Failure Rates	95
	Bus Subsidies in Argentina	96
	Who Worked on the Project?	100
	What Tools Did We Use?	100
	Citizen Data Reporters	101
	The Big Board for Election Results	104
	Crowdsourcing the Price of Water	106
4.	Getting Data	. 109
	A Five Minute Field Guide	110
	Streamlining Your Search	110
	Browse Data Sites and Services	111
	Ask a Forum	113
	Ask a Mailing List	113
	Join Hacks/Hackers	114
	Ask an Expert	114
	Learn About Government IT	114
	Search Again	115
	Write an FOI Request	115
	Your Right to Data	116
	Wobbing Works. Use It!	121
	Case Study 1: Farm Subsidy	121
	Case Study 2: Side Effects	122
	Case Study 3: Smuggling Death	123
	Getting Data from the Web	124
	What Is Machine-Readable Data?	125
	Scraping Websites: What For?	125
	What You Can and Cannot Scrape	126
	Tools That Help You Scrape	126
	How Does a Web Scraper Work?	127

An Example: Scraping Nuclear Incidents with Python The Web as a Data Source Web Tools Web Pages, Images, and Videos Emails Trends Crowdsourcing Data at the Guardian Datablog How the Datablog Used Crowdsourcing to Cover Olympic Ticketing Using and Sharing Data: the Black Letter, the Fine Print, and Reality  5. Understanding Data Become Data Literate in Three Simple Steps 1. How was the data collected? 2. What's in there to learn? 3. How reliable is the information? Tips for Working with Numbers in the News Basic Steps in Working with Data Know the Questions You Want to Answer Cleaning Messy Data Data May Have Undocumented Features The £32 Loaf of Bread Start With the Data, Finish With a Story Data Stories Data Journalists Discuss Their Tools of Choice Using Data Visualization to Find Insights in Data Using Visualization to Discover Insights Which Tools to Use An Example: Making Sense of US Election Contribution Data What To Learn From This Get the Source Code  6. Delivering Data Presenting Data to the Public To Visualize or Not to Visualize? Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News Add A Download Link Add A		The Anatomy of a Web Page	127
Web Tools Web Pages, Images, and Videos Emails Trends Crowdsourcing Data at the Guardian Datablog How the Datablog Used Crowdsourcing to Cover Olympic Ticketing Using and Sharing Data: the Black Letter, the Fine Print, and Reality  5. Understanding Data Become Data Literate in Three Simple Steps 1. How was the data collected? 2. What's in there to learn? 3. How reliable is the information? Tips for Working with Numbers in the News Basic Steps in Working with Data Know the Questions You Want to Answer Cleaning Messy Data Data May Have Undocumented Features The £32 Loaf of Bread Start With the Data, Finish With a Story Data Stories Data Journalists Discuss Their Tools of Choice Using Data Visualization to Find Insights in Data Using Visualization to Discover Insights Which Tools to Use An Example: Making Sense of US Election Contribution Data What To Learn From This Get the Source Code  6. Delivering Data Presenting Data to the Public To Visualize or Not to Visualize? Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News		,	128
Web Pages, Images, and Videos Emails Trends Crowdsourcing Data at the Guardian Datablog How the Datablog Used Crowdsourcing to Cover Olympic Ticketing Using and Sharing Data: the Black Letter, the Fine Print, and Reality  5. Understanding Data Become Data Literate in Three Simple Steps 1. How was the data collected? 2. What's in there to learn? 3. How reliable is the information? Tips for Working with Numbers in the News Basic Steps in Working with Data Know the Questions You Want to Answer Cleaning Messy Data Data May Have Undocumented Features The £32 Loaf of Bread Start With the Data, Finish With a Story Data Stories Data Journalists Discuss Their Tools of Choice Using Data Visualization to Find Insights in Data Using Visualization to Discover Insights Which Tools to Use An Example: Making Sense of US Election Contribution Data What To Learn From This Get the Source Code  6. Delivering Data Presenting Data to the Public To Visualize or Not to Visualize? Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News		The Web as a Data Source	132
Emails Trends Crowdsourcing Data at the Guardian Datablog How the Datablog Used Crowdsourcing to Cover Olympic Ticketing Using and Sharing Data: the Black Letter, the Fine Print, and Reality  5. Understanding Data  Become Data Literate in Three Simple Steps 1. How was the data collected? 2. What's in there to learn? 3. How reliable is the information? Tips for Working with Numbers in the News Basic Steps in Working with Data Know the Questions You Want to Answer Cleaning Messy Data Data May Have Undocumented Features The £32 Loaf of Bread Start With the Data, Finish With a Story Data Stories Data Journalists Discuss Their Tools of Choice Using Data Visualization to Find Insights in Data Using Visualization to Discover Insights Which Tools to Use An Example: Making Sense of US Election Contribution Data What To Learn From This Get the Source Code  6. Delivering Data Presenting Data to the Public To Visualize or Not to Visualize? Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News		Web Tools	132
Trends Crowdsourcing Data at the Guardian Datablog How the Datablog Used Crowdsourcing to Cover Olympic Ticketing Using and Sharing Data: the Black Letter, the Fine Print, and Reality  5. Understanding Data Become Data Literate in Three Simple Steps 1. How was the data collected? 2. What's in there to learn? 3. How reliable is the information? Tips for Working with Numbers in the News Basic Steps in Working with Data Know the Questions You Want to Answer Cleaning Messy Data Data May Have Undocumented Features The £32 Loaf of Bread Start With the Data, Finish With a Story Data Stories Data Journalists Discuss Their Tools of Choice Using Data Visualization to Find Insights in Data Using Visualization to Discover Insights Which Tools to Use An Example: Making Sense of US Election Contribution Data What To Learn From This Get the Source Code  6. Delivering Data Presenting Data to the Public To Visualize or Not to Visualize? Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News		Web Pages, Images, and Videos	134
Crowdsourcing Data at the Guardian Datablog How the Datablog Used Crowdsourcing to Cover Olympic Ticketing Using and Sharing Data: the Black Letter, the Fine Print, and Reality  5. Understanding Data Become Data Literate in Three Simple Steps 1. How was the data collected? 2. What's in there to learn? 3. How reliable is the information? Tips for Working with Numbers in the News Basic Steps in Working with Data Know the Questions You Want to Answer Cleaning Messy Data Data May Have Undocumented Features The £32 Loaf of Bread Start With the Data, Finish With a Story Data Stories Data Journalists Discuss Their Tools of Choice Using Data Visualization to Find Insights in Data Using Visualization to Discover Insights Which Tools to Use An Example: Making Sense of US Election Contribution Data What To Learn From This Get the Source Code  6. Delivering Data Presenting Data to the Public To Visualize or Not to Visualize? Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News			136
How the Datablog Used Crowdsourcing to Cover Olympic Ticketing Using and Sharing Data: the Black Letter, the Fine Print, and Reality  5. Understanding Data  Become Data Literate in Three Simple Steps  1. How was the data collected?  2. What's in there to learn?  3. How reliable is the information?  Tips for Working with Numbers in the News Basic Steps in Working with Data  Know the Questions You Want to Answer  Cleaning Messy Data  Data May Have Undocumented Features  The £32 Loaf of Bread  Start With the Data, Finish With a Story  Data Stories  Data Journalists Discuss Their Tools of Choice  Using Data Visualization to Find Insights in Data  Using Visualization to Discover Insights  Which Tools to Use  An Example: Making Sense of US Election Contribution Data  What To Learn From This  Get the Source Code  6. Delivering Data  Presenting Data to the Public  To Visualize or Not to Visualize?  Using Motion Graphics  Telling the World  Publishing the Data  Opening Up Your Data  Starting an Open Data Platform  Making Data Human  Open Data, Open Source, Open News		Trends	136
How the Datablog Used Crowdsourcing to Cover Olympic Ticketing Using and Sharing Data: the Black Letter, the Fine Print, and Reality  5. Understanding Data  Become Data Literate in Three Simple Steps  1. How was the data collected?  2. What's in there to learn?  3. How reliable is the information?  Tips for Working with Numbers in the News Basic Steps in Working with Data  Know the Questions You Want to Answer  Cleaning Messy Data  Data May Have Undocumented Features  The £32 Loaf of Bread  Start With the Data, Finish With a Story  Data Stories  Data Journalists Discuss Their Tools of Choice  Using Data Visualization to Find Insights in Data  Using Visualization to Discover Insights  Which Tools to Use  An Example: Making Sense of US Election Contribution Data  What To Learn From This  Get the Source Code  6. Delivering Data  Presenting Data to the Public  To Visualize or Not to Visualize?  Using Motion Graphics  Telling the World  Publishing the Data  Opening Up Your Data  Starting an Open Data Platform  Making Data Human  Open Data, Open Source, Open News		Crowdsourcing Data at the Guardian Datablog	137
Using and Sharing Data: the Black Letter, the Fine Print, and Reality  5. Understanding Data  Become Data Literate in Three Simple Steps  1. How was the data collected?  2. What's in there to learn?  3. How reliable is the information?  Tips for Working with Numbers in the News  Basic Steps in Working with Data  Know the Questions You Want to Answer  Cleaning Messy Data  Data May Have Undocumented Features  The £32 Loaf of Bread  Start With the Data, Finish With a Story  Data Stories  Data Journalists Discuss Their Tools of Choice  Using Data Visualization to Find Insights in Data  Using Visualization to Discover Insights  Which Tools to Use  An Example: Making Sense of US Election Contribution Data  What To Learn From This  Get the Source Code  6. Delivering Data  Presenting Data to the Public  To Visualize or Not to Visualize?  Using Motion Graphics  Telling the World  Publishing the Data  Opening Up Your Data  Starting an Open Data Platform  Making Data Human  Open Data, Open Source, Open News		_	139
Become Data Literate in Three Simple Steps  1. How was the data collected?  2. What's in there to learn?  3. How reliable is the information?  Tips for Working with Numbers in the News Basic Steps in Working with Data  Know the Questions You Want to Answer  Cleaning Messy Data  Data May Have Undocumented Features  The £32 Loaf of Bread  Start With the Data, Finish With a Story  Data Stories  Data Journalists Discuss Their Tools of Choice  Using Data Visualization to Find Insights in Data  Using Visualization to Discover Insights  Which Tools to Use  An Example: Making Sense of US Election Contribution Data  What To Learn From This  Get the Source Code  6. Delivering Data  Presenting Data to the Public  To Visualize or Not to Visualize?  Using Motion Graphics  Telling the World  Publishing the Data  Opening Up Your Data  Starting an Open Data Platform  Making Data Human  Open Data, Open Source, Open News			142
Become Data Literate in Three Simple Steps  1. How was the data collected?  2. What's in there to learn?  3. How reliable is the information?  Tips for Working with Numbers in the News Basic Steps in Working with Data  Know the Questions You Want to Answer  Cleaning Messy Data  Data May Have Undocumented Features  The £32 Loaf of Bread  Start With the Data, Finish With a Story  Data Stories  Data Journalists Discuss Their Tools of Choice  Using Data Visualization to Find Insights in Data  Using Visualization to Discover Insights  Which Tools to Use  An Example: Making Sense of US Election Contribution Data  What To Learn From This  Get the Source Code  6. Delivering Data  Presenting Data to the Public  To Visualize or Not to Visualize?  Using Motion Graphics  Telling the World  Publishing the Data  Opening Up Your Data  Starting an Open Data Platform  Making Data Human  Open Data, Open Source, Open News	5.	Understanding Data	147
1. How was the data collected? 2. What's in there to learn? 3. How reliable is the information? Tips for Working with Numbers in the News Basic Steps in Working with Data Know the Questions You Want to Answer Cleaning Messy Data Data May Have Undocumented Features The £32 Loaf of Bread Start With the Data, Finish With a Story Data Stories Data Journalists Discuss Their Tools of Choice Using Data Visualization to Find Insights in Data Using Visualization to Discover Insights Which Tools to Use An Example: Making Sense of US Election Contribution Data What To Learn From This Get the Source Code  6. Delivering Data Presenting Data to the Public To Visualize or Not to Visualize? Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News		•	148
3. How reliable is the information? Tips for Working with Numbers in the News Basic Steps in Working with Data Know the Questions You Want to Answer Cleaning Messy Data Data May Have Undocumented Features The £32 Loaf of Bread Start With the Data, Finish With a Story Data Stories Data Journalists Discuss Their Tools of Choice Using Data Visualization to Find Insights in Data Using Visualization to Discover Insights Which Tools to Use An Example: Making Sense of US Election Contribution Data What To Learn From This Get the Source Code  6. Delivering Data Presenting Data to the Public To Visualize or Not to Visualize? Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News		· -	149
Tips for Working with Numbers in the News Basic Steps in Working with Data Know the Questions You Want to Answer Cleaning Messy Data Data May Have Undocumented Features The £32 Loaf of Bread Start With the Data, Finish With a Story Data Stories Data Journalists Discuss Their Tools of Choice Using Data Visualization to Find Insights in Data Using Visualization to Discover Insights Which Tools to Use An Example: Making Sense of US Election Contribution Data What To Learn From This Get the Source Code  6. Delivering Data Presenting Data to the Public To Visualize or Not to Visualize? Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News		2. What's in there to learn?	150
Basic Steps in Working with Data Know the Questions You Want to Answer Cleaning Messy Data Data May Have Undocumented Features The £32 Loaf of Bread Start With the Data, Finish With a Story Data Stories Data Journalists Discuss Their Tools of Choice Using Data Visualization to Find Insights in Data Using Visualization to Discover Insights Which Tools to Use An Example: Making Sense of US Election Contribution Data What To Learn From This Get the Source Code  6. Delivering Data Presenting Data to the Public To Visualize or Not to Visualize? Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News		3. How reliable is the information?	151
Know the Questions You Want to Answer Cleaning Messy Data Data May Have Undocumented Features The £32 Loaf of Bread Start With the Data, Finish With a Story Data Stories Data Journalists Discuss Their Tools of Choice Using Data Visualization to Find Insights in Data Using Visualization to Discover Insights Which Tools to Use An Example: Making Sense of US Election Contribution Data What To Learn From This Get the Source Code  6. Delivering Data Presenting Data to the Public To Visualize or Not to Visualize? Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News		Tips for Working with Numbers in the News	152
Cleaning Messy Data Data May Have Undocumented Features The £32 Loaf of Bread Start With the Data, Finish With a Story Data Stories Data Journalists Discuss Their Tools of Choice Using Data Visualization to Find Insights in Data Using Visualization to Discover Insights Which Tools to Use An Example: Making Sense of US Election Contribution Data What To Learn From This Get the Source Code  6. Delivering Data Presenting Data to the Public To Visualize or Not to Visualize? Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News			153
Data May Have Undocumented Features The £32 Loaf of Bread Start With the Data, Finish With a Story Data Stories Data Journalists Discuss Their Tools of Choice Using Data Visualization to Find Insights in Data Using Visualization to Discover Insights Which Tools to Use An Example: Making Sense of US Election Contribution Data What To Learn From This Get the Source Code  6. Delivering Data Presenting Data to the Public To Visualize or Not to Visualize? Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News		Know the Questions You Want to Answer	153
The £32 Loaf of Bread Start With the Data, Finish With a Story Data Stories Data Journalists Discuss Their Tools of Choice Using Data Visualization to Find Insights in Data Using Visualization to Discover Insights Which Tools to Use An Example: Making Sense of US Election Contribution Data What To Learn From This Get the Source Code  6. Delivering Data Presenting Data to the Public To Visualize or Not to Visualize? Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News		Cleaning Messy Data	154
Start With the Data, Finish With a Story Data Stories Data Journalists Discuss Their Tools of Choice Using Data Visualization to Find Insights in Data Using Visualization to Discover Insights Which Tools to Use An Example: Making Sense of US Election Contribution Data What To Learn From This Get the Source Code  6. Delivering Data Presenting Data to the Public To Visualize or Not to Visualize? Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News		Data May Have Undocumented Features	155
Data Stories Data Journalists Discuss Their Tools of Choice Using Data Visualization to Find Insights in Data Using Visualization to Discover Insights Which Tools to Use An Example: Making Sense of US Election Contribution Data What To Learn From This Get the Source Code  6. Delivering Data Presenting Data to the Public To Visualize or Not to Visualize? Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News		The £32 Loaf of Bread	157
Data Journalists Discuss Their Tools of Choice Using Data Visualization to Find Insights in Data Using Visualization to Discover Insights Which Tools to Use An Example: Making Sense of US Election Contribution Data What To Learn From This Get the Source Code  6. Delivering Data Presenting Data to the Public To Visualize or Not to Visualize? Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News		Start With the Data, Finish With a Story	158
Using Data Visualization to Find Insights in Data Using Visualization to Discover Insights Which Tools to Use An Example: Making Sense of US Election Contribution Data What To Learn From This Get the Source Code  6. Delivering Data Presenting Data to the Public To Visualize or Not to Visualize? Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News		Data Stories	159
Using Visualization to Discover Insights Which Tools to Use An Example: Making Sense of US Election Contribution Data What To Learn From This Get the Source Code  6. Delivering Data Presenting Data to the Public To Visualize or Not to Visualize? Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News		Data Journalists Discuss Their Tools of Choice	161
Which Tools to Use An Example: Making Sense of US Election Contribution Data What To Learn From This Get the Source Code  6. Delivering Data Presenting Data to the Public To Visualize or Not to Visualize? Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News			165
An Example: Making Sense of US Election Contribution Data What To Learn From This Get the Source Code  6. Delivering Data Presenting Data to the Public To Visualize or Not to Visualize? Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News		Using Visualization to Discover Insights	165
What To Learn From This Get the Source Code  6. Delivering Data		Which Tools to Use	170
Get the Source Code  6. Delivering Data		An Example: Making Sense of US Election Contribution Data	170
6. Delivering Data		What To Learn From This	176
Presenting Data to the Public To Visualize or Not to Visualize? Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News		Get the Source Code	176
To Visualize or Not to Visualize? Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News	6.	Delivering Data	177
Using Motion Graphics Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News		Presenting Data to the Public	178
Telling the World Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News		To Visualize or Not to Visualize?	178
Publishing the Data Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News		Using Motion Graphics	178
Opening Up Your Data Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News		Telling the World	178
Starting an Open Data Platform Making Data Human Open Data, Open Source, Open News		Publishing the Data	179
Making Data Human Open Data, Open Source, Open News		Opening Up Your Data	179
Open Data, Open Source, Open News		Starting an Open Data Platform	180
		Making Data Human	180
Add A Download Link			181
ridd i'r Dowinodd Emik		Add A Download Link	181

Know Your Scope	182
How to Build a News App	182
Who Is My Audience and What Are Their Needs?	183
How Much Time Should I Spend on This?	184
How Can I Take Things to the Next Level?	184
Wrapping Up	185
News Apps at ProPublica	185
Visualization as the Workhorse of Data Journalism	186
Tip 1: Use small multiples to quickly orient yourself in a large dataset	187
Tip 2: Look at your data upside down and sideways	189
Tip 3: Don't assume	189
Tip 4: Avoid obsessing over precision	190
Tip 5: Create chronologies of cases and events	190
Tip 6: Meet with your graphics department early and often	190
Tips For Publication	190
Using Visualizations to Tell Stories	191
Seeing the Familiar in a New Way	192
Showing Change Over Time	193
Comparing Values	194
Showing Connections and Flows	195
Designing With Data	196
Showing Hierarchy	197
Browsing Large Databases	198
Envisioning Alternate Outcomes	199
When Not To Use Data Visualization	200
Different Charts Tell Different Tales	201
Data Visualization DIY: Our Top Tools	206
Google Fusion Tables	207
Tableau Public	208
Google Spreadsheet Charts	210
Datamarket	210
Many Eyes	211
Color Brewer	212
And Some More	212
How We Serve Data at Verdens Gang	212
Numbers	212
Networks	213
Maps	213
Text Mining	215
Concluding Notes	215
Public Data Goes Social	216
Engaging People Around Your Data	218