

Qualitative Research in Computational Times: Dilemmas of Data Gone Digital

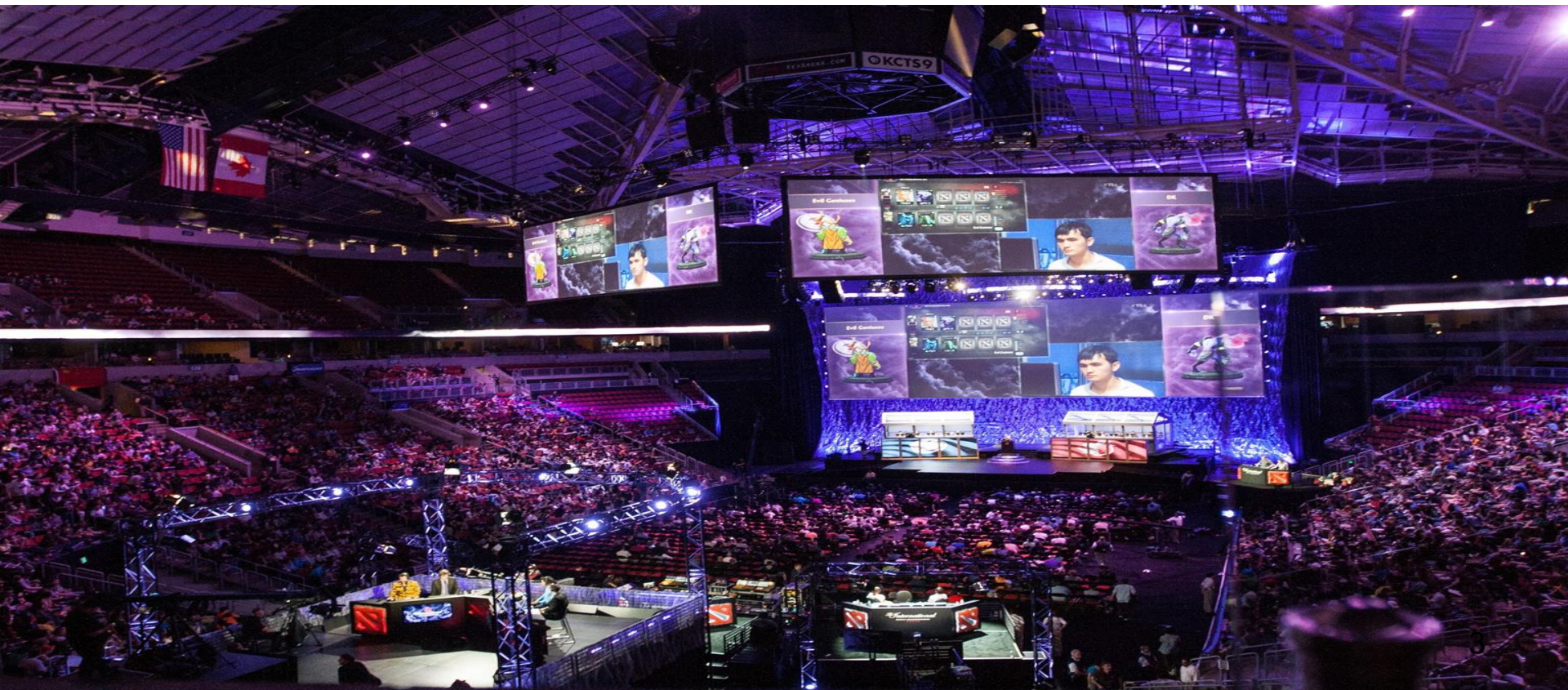
Tom Liam Lynch | Hannah R. Gerber
@tomliamlynch | @hannahgerber

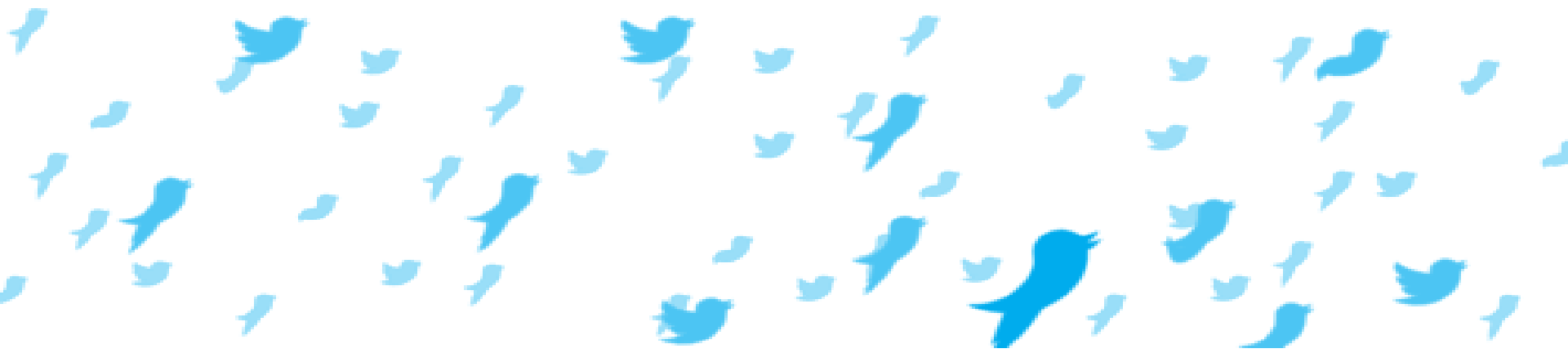


Tom Liam Lynch, Ed.D.



Hannah R. Gerber, Ph. D.

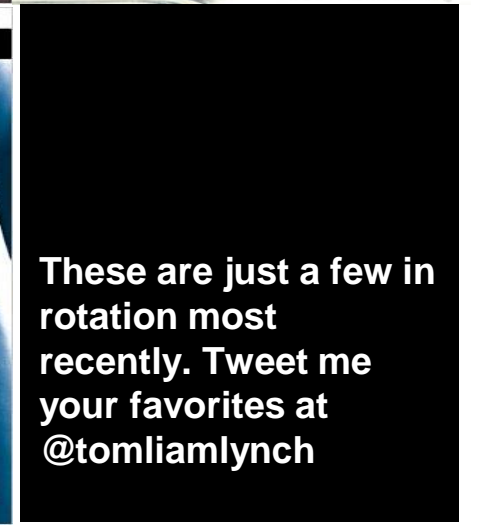
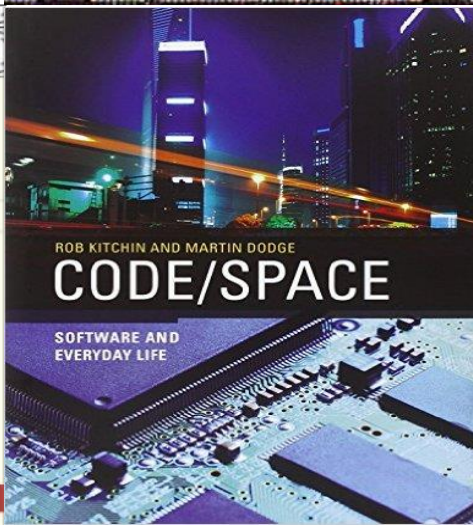
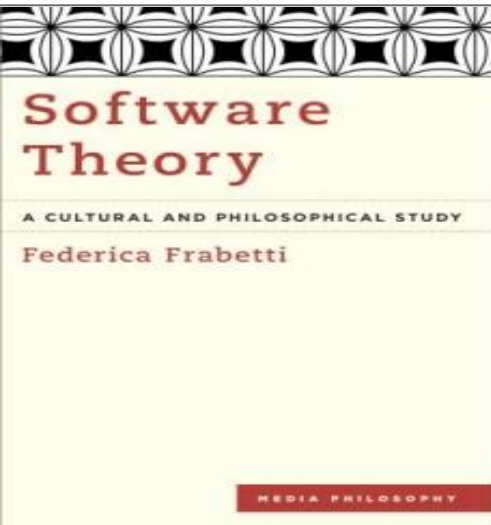
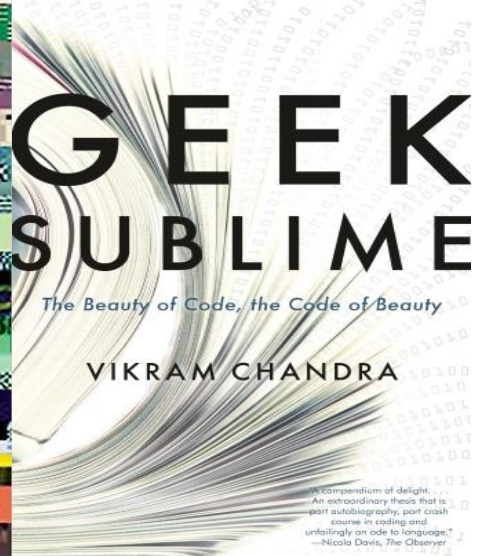
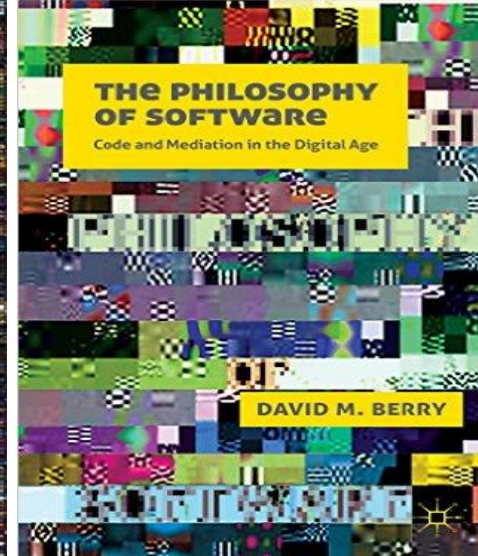
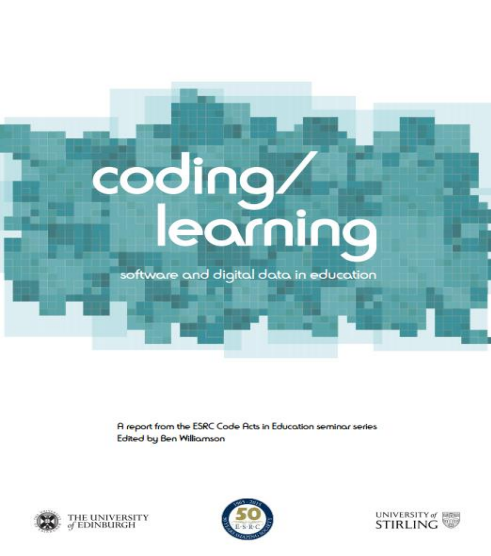




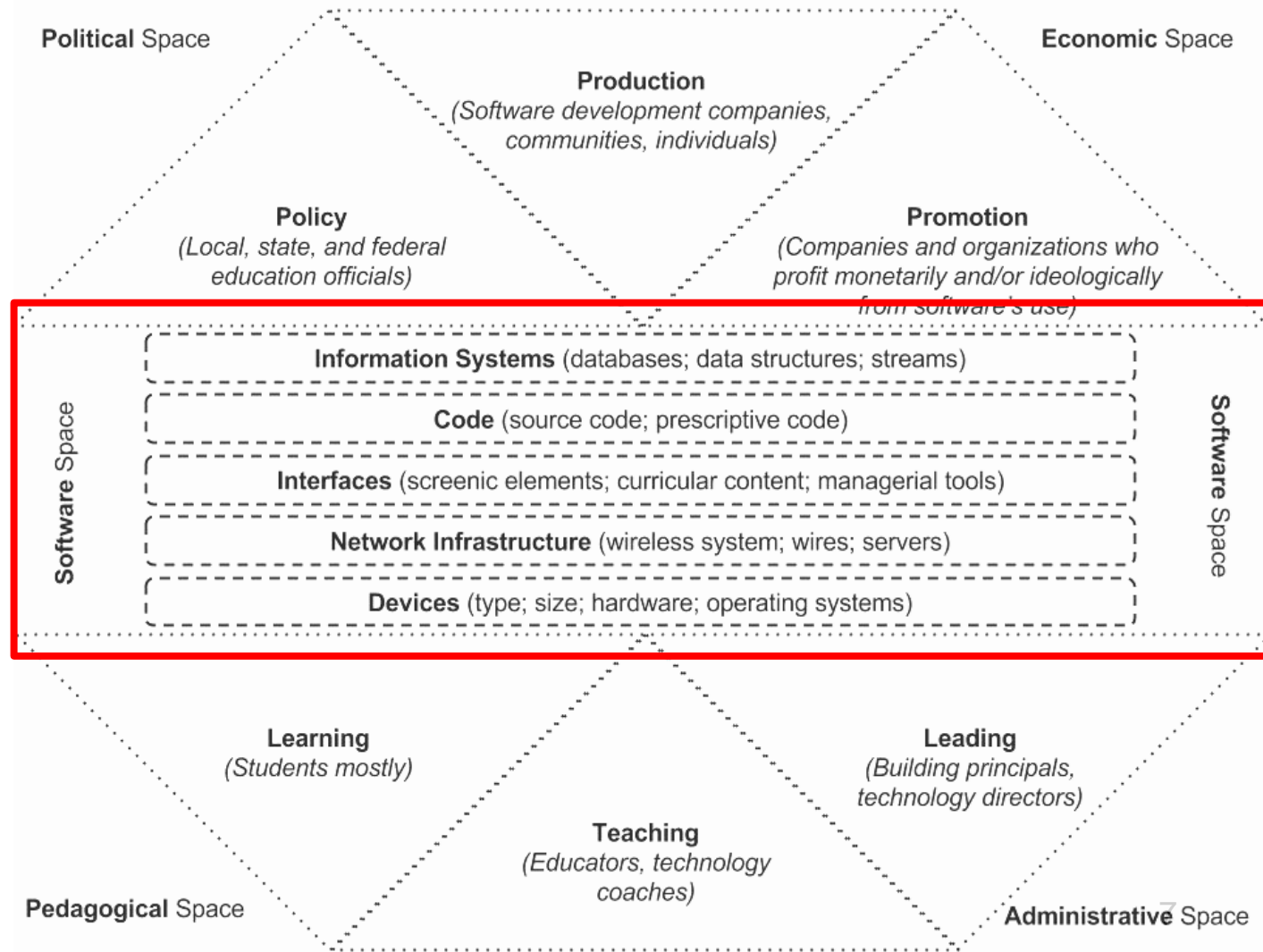
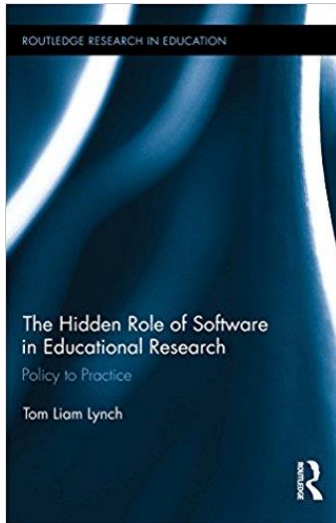
What is the Ontological Imperative?

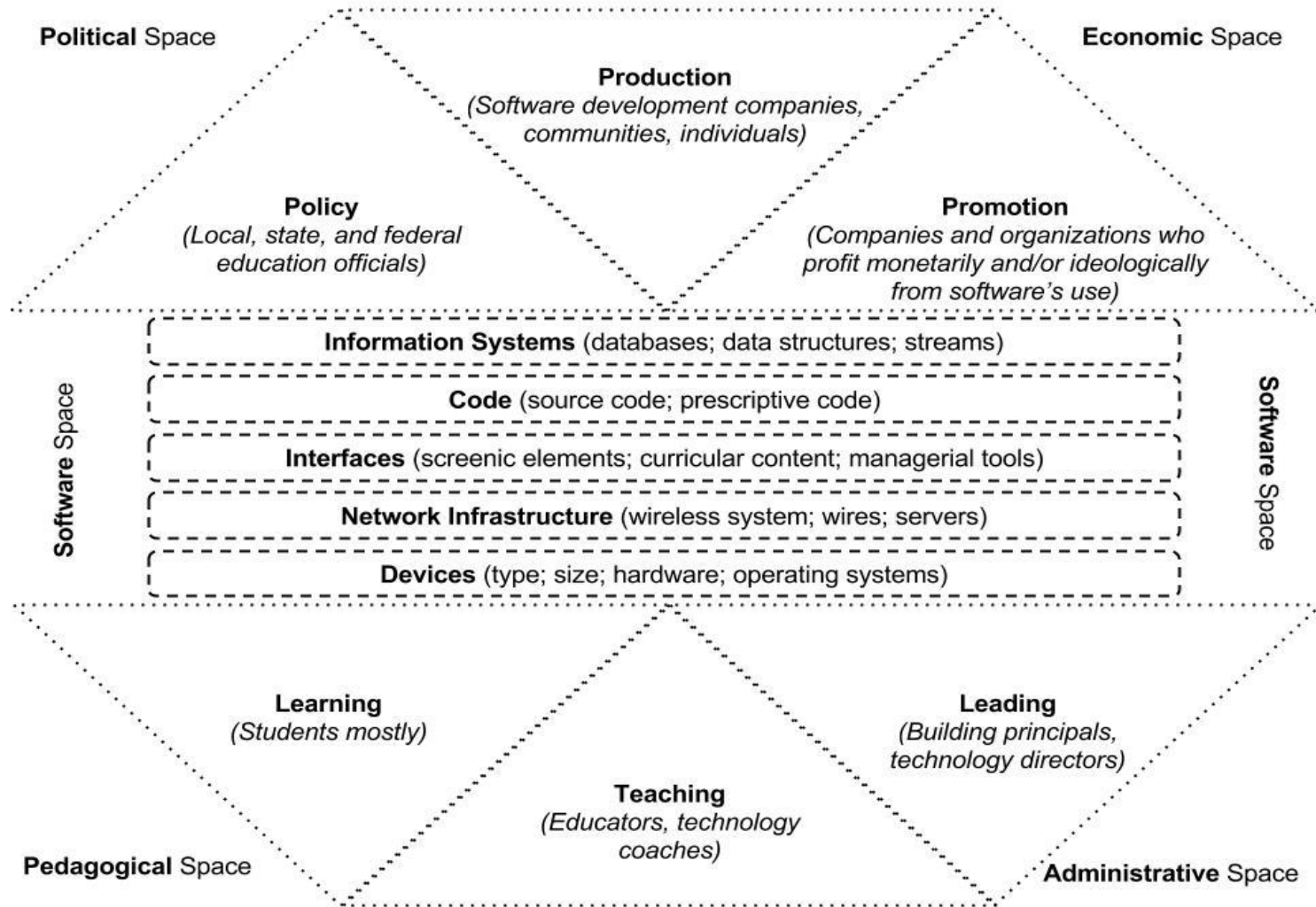


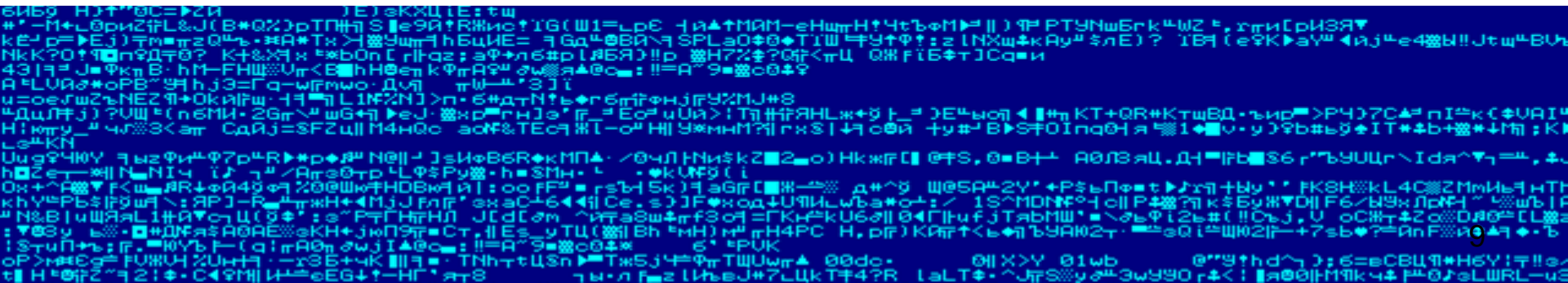
Tom: Critical Software Studies



Critical Software Studies Framework







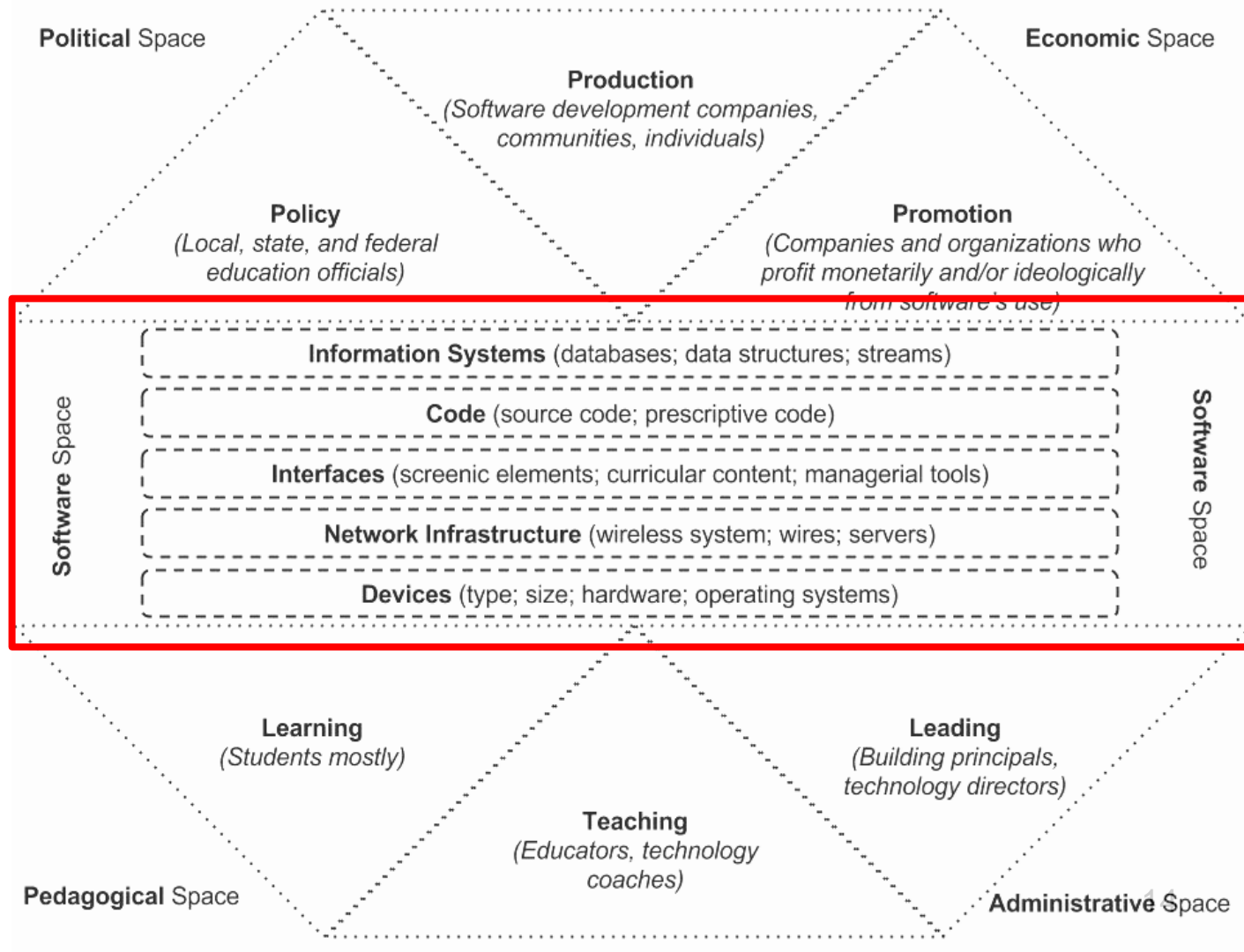
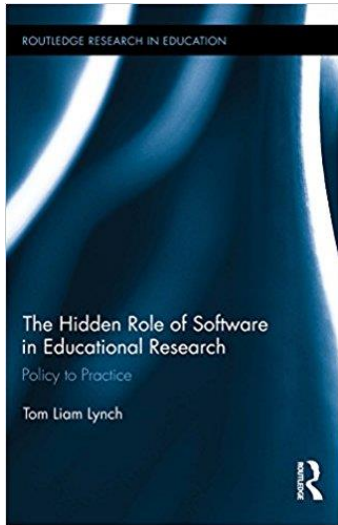
An Example: Social Media Data



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    =
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Critical Software Studies Framework

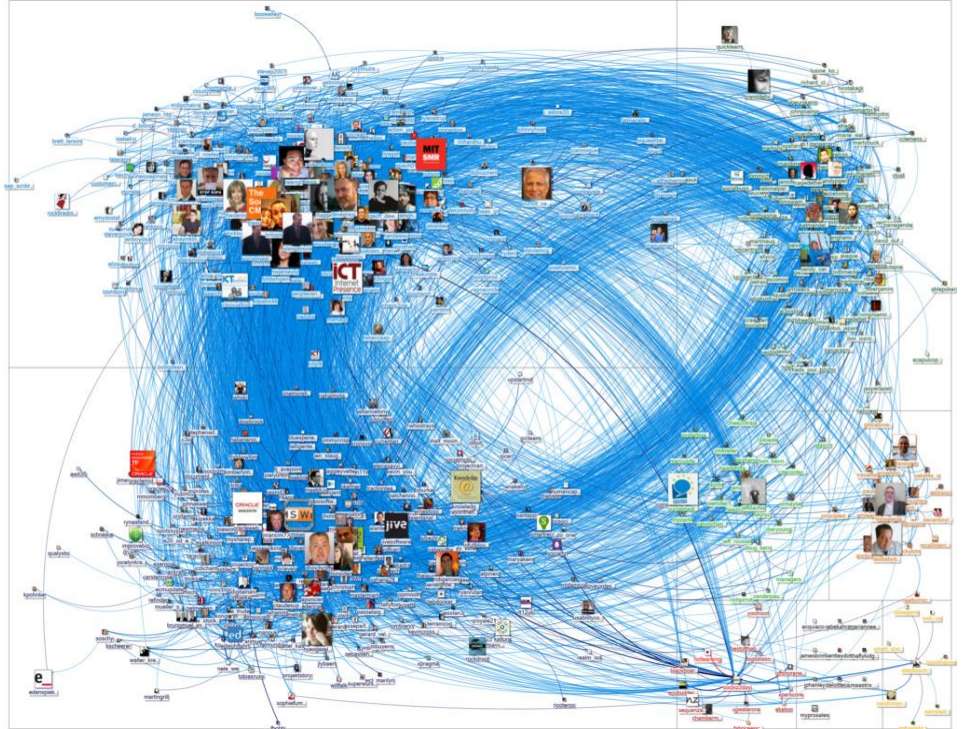


Hannah: Networked Field Sites

Networked Field Sites



Social media network connections among Twitter users



Created with NodeXL (<http://nodexl.codeplex.com>) from the Social Media Research Foundation (<http://www.smrfoundation.org>)

#regeni

322 posts

TOP POSTS

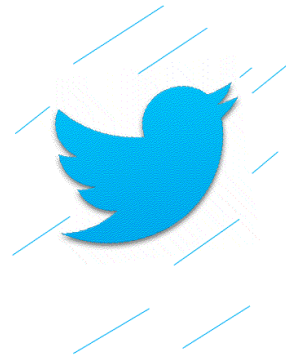


**CASO GIULIO REGENI:
UNA COINCIDENZA CHE**

The background of the slide is a repeating pattern of blue bird silhouettes, similar to the Twitter logo, scattered across a white background. A solid blue horizontal band is positioned in the center of the slide, containing the title text.

Review: Ontological Imperative

Implications for Researchers



5 Key Questions

1. What digital tools, systems, and services are at play in my study? Who created them and why?
2. What data do these digital tools, systems, and services render?
3. What hidden limitations might there be to the data rendered via these digital tools, systems, and services?
4. What are the epistemological implications of this ontological analysis?
5. What are the axiological and ethical implications of this ontological analysis?

Question 1: What digital tools, systems, and services are at play? Who created them and why?

Other Web-based Tools (Over 50 tools)

digital methods initiative

wiki

Digital Methods

- Summer School 2017
- About
- People
- FAQ
- Tools
- Projects by Theme
- Research Protocols
- Summer School
- Winter School
- Papers and Publications

Course

- The Link
- The Website
- The Engine
- The Spheres
- The Webs
- Post-demographics
- Networked Content

DMI Tools

Media Analysis: Media Monitoring | Mapping | Clouding | Comparative Media Analysis

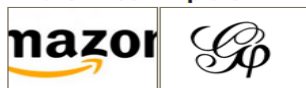
Data Treatment: Data Collection | Data Analysis | Information Visualization

Natively Digital: The Link | The URL | The Tag | The Domain | The PageRank | The Robots.txt

Device Centric: Google | Google Images | Google News | Google Blog Search | Yahoo | Wikipedia | Alexa | IssueCrawler | Twitter | Facebook | Amazon | iTunes | Wayback | YouTube | Instagram | Github

Spherical: Web Sphere | News Sphere | Blogosphere | Tag Sphere | Video Sphere | Image Sphere | Code Sphere

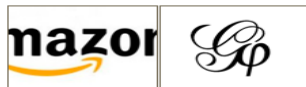
Amazon Book Explorer



Launch tool [Instructions & Scenarios of Use](#)

Provides different analytics for Amazon.com's book search

Amazon Related Product Graph



Launch tool [Instructions & Scenarios of Use](#)

This PHP script allows you to enter a (set of) ASIN(s) and crawl its recommendations up til a user-specified depth.

Bubble Lines

polar bear (73) red fox (11)
lurkie (19) marmot (77) pe
(105) eagle (127) crane (1
puffin (46) walrus (85) wh
(113) dolphin (130) panda
orangutan (90) elephant (1
frog (99) tiger (104) pika (



Launch tool [Instructions & Scenarios of Use](#)

Input tags and values to produce relatively sized bubbles. Output is an svg.

Censorship Explorer

URL	response code for request
www.legalhumanx.com/	503 Service Unavailable
www.abolout.com/	OK
www.ganabash.com/	OK
www.anonymousexpress.net/	OK
www.webdatabases.com/	OK
www.supernews.com/	OK
nature.org/	OK
news.bbc.co.uk/	OK

Launch tool [Instructions & Scenarios of Use](#)

Check whether a URL is censored in a particular country by using proxies located around the world.

Colors For Data Scientists



Launch tool [Instructions & Scenarios of Use](#)

Generate and refine palettes of optimally distinct colors. (by Médialab Sciences-Po)

Twitter Data Available for Direct Calls

Twitter Developer Documentation

Docs / API Overview / Entities

Products & Services

Best practices

API overview

Upcoming changes to Tweets

Object: Tweets

Object: Users

Object: Entities

Object: Entities in Objects

Object: Places

Twitter IDs

Connecting to Twitter API using TLS

Using cursors to navigate collections

Error Codes & Responses

Websites

Cards

OAuth

REST APIs

Streaming APIs

Ads API

Gnip

MoPub

Fabric

Tools & Support

Entities

Entities provide metadata and additional contextual information about content posted on Twitter. Entities are never divorced from the content they describe. Entities are returned wherever [Tweets](#) are found in the API. Entities are instrumental in [resolving URLs](#).

Read [Entities in Objects](#) for a more comprehensive guide to how entities are used throughout Twitter objects.

Field Guide

Consumers of Entities should tolerate the addition of new fields and variance in ordering of fields with ease. Not all fields appear in all contexts. It is generally safe to consider a nulled field, an empty set, and the absence of a field as the same thing.

Field	Type	Description
hashtags	Array of Object	Represents hashtags which have been parsed out of the Tweet text. Example: <pre>"hashtags": [{"indices": [32, 36], "text": "lol"}]</pre>
media	Array of Object	Represents media elements uploaded with the Tweet. Example: <pre>"media": [{"type": "photo", "sizes": {"thumb": {"h": 150, "resize": "crop", "w": 150}, "medium": {"h": 238, "resize": "fit", "w": 226}, "small": {"h": 238, "resize": "fit", "w": 226}, "large": {"h": 238, "resize": "fit", "w": 226}}, "url": "http://t.co/r3C5Pxsu", "media_url": "http://p.twimg.com/AZVmp-CIAAbkyy.jpg", "display_url": "pic.twitter.com/r3C5Pxsu", "id": 114080493840997688, "id_str": "114080493840997688", "http://twitter.com/vunorno/status/114080493840997688/photo/1", "media_url_https": "https://p.twimg.com/AZVmp-CIAAbkyy.jpg"}]</pre>
urls	Array of Object	Represents URLs included in the text of a Tweet or within textual fields of a user object. Tweet Example: <pre>"urls": [{"indices": [32, 52], "url": "http://t.co/1Dw8rTZR", "display_url": "youtube.com/watch?v=ng53YRH40*", "expanded_url": "http://www.youtube.com/watch?v=ng53YRH40*"}]</pre> User Example: <pre>"urls": [{"indices": [32, 52], "url": "http://t.co/1Dw8rTZR", "display_url": "youtube.com/watch?v=ng53YRH40*"}]</pre>
user_mentions	Array	Represents other Twitter users mentioned in the text of the Tweet. Example:

Click here for data: <https://dev.twitter.com/overview/api>

Twitter Data via Web-based Tool

1_bowie_geoTweets (1).tsv

Verdana 10

Sheets Charts SmartArt Graphics WordArt

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
<	id	time	created_at	from_user_name	text	filter_level	possibly_sens	withheld_copy	withheld_scope	truncated	retweet_count	favorite_count	lang	to_user_name	in_reply_to_status_id	source	location	lat	lng
1	6.8645E+17	1452496332	#####		Trend Alert: 'C low		0			0	0	0	en					0.1097	113.917
2	6.8645E+17	1452496335	#####		Trend Alert: 'C low		0			0	0	0	en					15.5931	120.739
3	6.8645E+17	1452496372	#####		Hoax, atrev low		0			0	0	0	en					40.430134	-3.647
4	6.8645E+17	1452496405	#####		I don't know low		0			0	0	0	en					42.223949	-87.84
5	6.8645E+17	1452496418	#####		R.I.P. David B low		0			0	0	0	en					51.589352	0.000
6	6.8645E+17	1452496501	#####		#Breaking News low		0			0	0	0	en					34.722588	-97.253
7	6.8645E+17	1452496520	#####		Bowie you will low		0			0	0	0	en					-37.790745	144.97
8	6.8645E+17	1452496547	#####		Thanks for the low		0			0	0	0	en					34.11871	-118.2
9	6.8645E+17	1452496565	#####		#bowie v@ or low		0			0	0	0	it					45.463699	9.18
10	6.8645E+17	1452496571	#####		Oh no David B low		0			0	0	0	en					50.415855	-4.113
11	6.8645E+17	1452496677	#####		Blimey, Bowie low		0			0	0	0	et					53.806973	-1.656
12	6.8645E+17	1452496730	#####		Toch niet Bowie low		0			0	0	0	pl					53.293697	5.877
13	6.8645E+17	1452496734	#####		Music legend t low		0			0	0	0	de					51.550274	0.633
14	6.8645E+17	1452496734	#####		David Bowie's low		0			0	0	0	de					-36.791637	174.719
15	6.8645E+17	1452496760	#####		David Bowie v low		0			0	0	0	tr					40.989319	29.029
16	6.8645E+17	1452496786	#####		RIP David Bow low		0			0	0	0	en					49.121216	6.16
17	6.8645E+17	1452496788	#####		RIP David Bow low		0			0	0	0	en					51.737457	0.494
18	6.8645E+17	1452496795	#####		So sad David l low		0			0	0	0	en					51.965118	0.493
19	6.8645E+17	1452496802	#####		wait DAVID B low		0			0	0	0	en					42.22393	-87.845
20	6.8645E+17	1452496805	#####		What sh*t nev low		0			0	0	0	en					51.355347	-0.148
21	6.8645E+17	1452496828	#####		1. David Bowi low		0			0	0	0	pl					50.500999	4.4
22	6.8645E+17	1452496829	#####		1. #GoldenGic low		0			0	0	0	en					-34.608501	-58.373
23	6.8645E+17	1452496830	#####		1. #GoldenGic low		0			0	0	0	en					4.6564	-74.117
24	6.8645E+17	1452496830	#####		1. David Bowi low		0			0	0	0	cy					-24.916201	133.393
25	6.8645E+17	1452496847	#####		1. David Bowi low		0			0	0	0	de					-43.5877	170.366
26	6.8645E+17	1452496852	#####		Music legend t low		0			0	0	0	en					53.891891	-2.751
27	6.8645E+17	1452496904	#####		"David Bowie low		0			0	0	0	en					33.459457	-86.820
28	6.8645E+17	1452496936	#####		David Bowie low		0			0	0	0	en					19.035526	-98.173
29	6.8645E+17	1452497006	#####		@adiltamm low		0			0	0	0	en					-32.242886	115.821
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35	6.8645E+17	1452497155	#####		David Bowie # low		0			0	0	0	pl					22.34001	114.175
36	6.8645E+17	1452497226	#####		I cant believe low		0			0	0	0	en					55.86404	-4.291
37	6.8645E+17	1452497229	#####		David Bowie h low		0			0	0	0	en					39.39998	-75.166
38	6.8645E+17	1452497233	#####		"David Bowie low		0			0	0	0	es					-33.463001	-70.647
39	6.8645E+17	1452497236	#####		Not Bowie low		0			0	0	0	pl					51.463001	-0.
40	6.8645E+17	1452497239	#####		Trend Alert: 'C low		0			0	0	0	en					-0.0244	37.9
41	6.8645E+17	1452497255	#####		REPORTS: Dav low		0			0	0	0	en					30.32633	-81.653
42	6.8645E+17	1452497255	#####		Music legend t low		0			0	0	0	en					36.161449	-115.13
43	6.8645E+17	1452497277	#####		Bowie low		0			0	0	0	pl					-33.876732	151.216
44	6.8645E+17	1452497316	#####		No Bowie. tv low		0			0	0	0	es					18.917042	-98.42

Question 2: What data do these digital tools, systems, and services render?

Twitter Data via Web-based Tool

1_bowie_geoTweets (1).tsv

Verdana 10

Sheets Charts SmartArt Graphics WordArt

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	
<	id	time	created_at	from_user_name	text	filter_level	possibly_sens	withheld_copy	withheld_scope	truncated	retweet_count	favorite_count	lang	to_user_name	in_reply_to_status_id	source	location	lat	lng	
1	6.8645E+17	1452496332	#####		Trend Alert: 'C	low	0				0	0	en					0.1097	113.917	
2	6.8645E+17	1452496335	#####		Trend Alert: 'C	low	0				0	0	en					15.5931	120.739	
3	6.8645E+17	1452496372	#####		Hoax, atrev low		0				0	0	en					40.430134	-3.647	
4	6.8645E+17	1452496405	#####		I don't know low		0				0	0	en					42.223949	-87.84	
5	6.8645E+17	1452496418	#####		R.I.P. David B	low	0				0	0	en					51.589352	0.000	
6	6.8645E+17	1452496501	#####		#Breaking News	low	0				0	0	en					34.722588	-97.253	
7	6.8645E+17	1452496520	#####		Bowie you will	low	0				0	0	en					-37.790745	144.97	
8	6.8645E+17	1452496547	#####		Thanks for the	low	0				0	0	en					34.11871	-118.2	
9	6.8645E+17	1452496565	#####		#bowie v@ or	low	0				0	0	it					45.463699	9.18	
10	6.8645E+17	1452496571	#####		Oh no David B	low	0				0	0	en					50.415855	-4.113	
11	6.8645E+17	1452496677	#####		Blimey, Bowie	low	0				0	0	et					53.806973	-1.656	
12	6.8645E+17	1452496730	#####		Toch niet Bowi	low	0				0	0	pl					53.293697	5.877	
13	6.8645E+17	1452496734	#####		Music legend t	low	0				0	0	de					51.550274	0.633	
14	6.8645E+17	1452496734	#####		David Bowie's	low	0				0	0	de					-36.791637	174.719	
15	6.8645E+17	1452496760	#####		David Bowie v	low	0				0	0	tr					40.989319	29.029	
16	6.8645E+17	1452496786	#####		RIP David Bow	low	0				0	0	en					49.121216	6.16	
17	6.8645E+17	1452496788	#####		RIP David Bow	low	0				0	0	en					51.737457	0.494	
18	6.8645E+17	1452496795	#####		So sad David I	low	0				0	0	en					51.965118	0.493	
19	6.8645E+17	1452496802	#####		wait DAVID B	low	0				0	0	en					42.22393	-87.845	
20	6.8645E+17	1452496805	#####		What sh*t nev	low	0				0	0	en					51.355347	-0.148	
21	6.8645E+17	1452496828	#####		1. David Bowi	low	0				0	0	pl					50.500999	4.4	
22	6.8645E+17	1452496829	#####		1. #GoldenGic	low	0				0	0	en					-34.608501	-58.373	
23	6.8645E+17	1452496830	#####		1. #GoldenGic	low	0				0	0	en					4.6564	-74.117	
24	6.8645E+17	1452496830	#####		1. David Bowi	low	0				0	0	cy					-24.916201	133.393	
25	6.8645E+17	1452496847	#####		1. David Bowi	low	0				0	0	de					-43.5877	170.366	
26	6.8645E+17	1452496852	#####		Music legend t	low	0				0	0	en					53.891891	-2.751	
27	6.8645E+17	1452496904	#####		"David Bowie	low	0				0	0	en					33.459457	-86.820	
28	6.8645E+17	1452496936	#####		David Bowie	low	0				0	0	en					19.035526	-98.173	
29	6.8645E+17	1452496993	#####		@adiltamm	low	0				0	0	en	adiltamm	6.8644E+17			-32.242886	115.821	
30	6.8645E+17	1452497006	#####		David Bowie	low	0				0	0	es					-33.456902	-70.6	
31	6.8645E+17	1452497018	#####		Rip Bowie	low	0				0	0	pl					-34.746792	-58.377	
32	6.8645E+17	1452497059	#####		David Bowie h	low	0				0	0	en					51.918335	0.921	
33	6.8645E+17	1452497117	#####		Evenin en v	low	0				0	0	tr					51.516434	-0.129	
34	6.8645E+17	1452497123	#####		Wg mlie najle	low	0				0	0	pl					50.090092	14.406	
35	6.8645E+17	1452497130	#####		David Bowie #	low	0				0	0	pl					22.34001	114.175	
36	6.8645E+17	1452497155	#####		I cant believe	low	0				0	0	en					55.86404	-4.291	
37	6.8645E+17	1452497226	#####		David Bowie h	low	0				0	0	en					39.39998	-75.166	
38	6.8645E+17	1452497229	#####		"David Bowie"	low	0				0	0	es					-33.463001	-70.647	
39	6.8645E+17	1452497233	#####		Not Bowie	low	0				0	0	pl					51.463001	-0.	
40	6.8645E+17	1452497236	#####		Trend Alert: 'C	low	0				0	0	en					-0.0244	37.9	
41	6.8645E+17	1452497239	#####		REPORTS: Dav	low	0				0	0	en					30.32633	-81.653	
42	6.8645E+17	1452497255	#####		Music legend t	low	0				0	0	en					36.161449	-115.13	
43	6.8645E+17	1452497255	#####		Bowie	low	0				0	0	pl					-33.876732	151.216	
44	6.8645E+17	1452497277	#####		No Bowie. tv	low	0				0	0	es					18.917042	-98.42	
45	6.8645E+17	1452497316	#####																	

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- API overview
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- Object: Tweets
- Object: Users
- Object: Entities
- Object: Entities in Objects
- Object: Places
- Twitter IDs
- Connecting to Twitter API using TLS
- Using cursors to navigate collections
- Error Codes & Responses
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- Streaming APIs
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Entities

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Consumers of Entities should tolerate the addition of new fields and variance in ordering of fields with ease. Not all fields appear in all contexts. It is generally safe to consider a nulled field, an empty set, and the absence of a field as the same thing.

Field	Type	Description
hashtags	Array of Object	Represents hashtags which have been parsed out of the Tweet text. Example: <pre>"hashtags": [{"indices": [32,36], "text": "lol"}]</pre>
media	Array of Object	Represents media elements uploaded with the Tweet. Example: <pre>"media": [{"type": "photo", "sizes": {"thumb": {"h": 150, "resize": "crop", "w": 150}, "medium": {"h": 238, "resize": "fit", "w": 226}, "small": {"h": 238, "resize": "fit", "w": 226}, "large": {"h": 238, "resize": "fit", "w": 226}}, "url": "http://t.co/r3C5Pxsu", "media_url": "http://p.twimg.com/AZVmp-CIAAbkyy.jpg", "display_url": "pic.twitter.com/r3C5Pxsu", "id": 114080493840997688, "id_str": "114080493840997688", "http://twitter.com/vunorno/status/11408049383677378v/photo/1", "media_url_https": "https://p.twimg.com/AZVmp-CIAAbkyy.jpg"}]</pre>
urls	Array of Object	Represents URLs included in the text of a Tweet or within textual fields of a user object. Tweet Example: <pre>"urls": [{"indices": [32,52], "url": "http://t.co/1Dw8rTZR", "display_url": "youtube.com/watch?v=ng53YRH40*", "expanded_url": "http://www.youtube.com/watch?v=ng53YRH40*"}]</pre> User Example: <pre>"urls": [{"indices": [32,52], "url": "http://t.co/1Dw8rTZR", "display_url": "youtube.com/watch?v=ng53YRH40*"}]</pre>
user_mentions	Array	Represents other Twitter users mentioned in the text of the Tweet. Example:

Click here for data: <https://dev.twitter.com/overview/api>

Question 3: What hidden limitations might there be to the data rendered via these digital tools, systems, and services?

Twitter Data via Web-based Tool

1_bowie_geoTweets (1).tsv

Verdana 10

Sheets Charts SmartArt Graphics WordArt

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
	id	time	created_at	from_user_name	text	filter_level	possibly_sens	withheld_copy	withheld_scope	truncated	retweet_count	favorite_count	lang	to_user_name	in_reply_to_status_id	source	location	lat	lng
2	6.8645E+17	1452496332	#####		Trend Alert: 'C low		0			0	0	0	en			<a href="http	Indonesia	0.1097	113.917
3	6.8645E+17	1452496335	#####		Trend Alert: 'C low		0			0	0	0	en			<a href="http	Philippines	15.5931	120.739
4	6.8645E+17	1452496372	#####		Hoax, atrev low		0			0	0	0	en			<a href="http	Madrid	40.430134	-3.647
5	6.8645E+17	1452496405	#####		I don't know low		0			0	0	0	en			<a href="http	Lake Forest, IL	42.223949	-87.84
6	6.8645E+17	1452496418	#####		R.I.P. David B low		0			0	0	0	en			<a href="http	London	51.589352	0.000
7	6.8645E+17	1452496501	#####		#Breaking News low		0			0	0	0	en			<a href="http	Ithaca, NY	34.722588	-97.253
8	6.8645E+17	1452496520	#####		Bowie you will low		0			0	0	0	en			<a href="http	Melbourne	-37.790745	144.97
9	6.8645E+17	1452496547	#####		Thanks for the low		0			0	0	0	en			<a href="http	Planet Earth	34.11871	-118.2
10	6.8645E+17	1452496565	#####		#bowie v@ or low		0			0	0	0	it			<a href="http	Italy	45.463699	9.18
11	6.8645E+17	1452496571	#####		Oh no David B low		0			0	0	0	en			<a href="http	Wirral, Plymouth	50.415855	-4.113
12	6.8645E+17	1452496677	#####		Blimey, Bowie low		0			0	0	0	et			<a href="http	Yorrrrrrrksher	53.806973	-1.656
13	6.8645E+17	1452496730	#####		Toch niet Bowi low		0			0	0	0	pl			<a href="http	Cape Town, Sc	53.293697	5.877
14	6.8645E+17	1452496734	#####		Music legend t low		0			0	0	0	de			<a href="http	Southend on S	51.550274	0.633
15	6.8645E+17	1452496734	#####		David Bowie's low		0			0	0	0	de			<a href="http	Auckland City,	-36.791637	174.719
16	6.8645E+17	1452496760	#####		David Bowie v low		0			0	0	0	tr			<a href="http	Kadf#kv&y	40.989319	29.029
17	6.8645E+17	1452496786	#####		RIP David Bow low		0			0	0	0	en			<a href="http	Metz	49.121216	6.16
18	6.8645E+17	1452496788	#####		RIP David Bow low		0			0	0	0	en			<a href="http://twitter.com/		51.737457	0.494
19	6.8645E+17	1452496795	#####		So sad David l low		0			0	0	0	en			<a href="http	1/3 matys ho	51.965118	0.493
20	6.8645E+17	1452496802	#####		wait DAVID B low		0			0	0	0	en			<a href="http	Lake Forest, IL	42.22393	-87.845
21	6.8645E+17	1452496805	#####		What sh*t nev low		0			0	0	0	en			<a href="http	London	51.355347	-0.148
22	6.8645E+17	1452496828	#####		1. David Bowi low		0			0	0	0	pl			<a href="http	Belgium	50.500999	4.4
23	6.8645E+17	1452496829	#####		1. #GoldenGic low		0			0	0	0	en			<a href="http	Argentina	-34.608501	-58.373
24	6.8645E+17	1452496830	#####		1. #GoldenGic low		0			0	0	0	en			<a href="http	Colombia	4.6564	-74.117
25	6.8645E+17	1452496847	#####		1. David Bowi low		0			0	0	0	cy			<a href="http	Australia	-24.916201	133.393
26	6.8645E+17	1452496852	#####		1. David Bowi low		0			0	0	0	de			<a href="http	New Zealand	-43.5877	170.366
27	6.8645E+17	1452496904	#####		Music legend t low		0			0	0	0	en			<a href="http	Wigan and all	53.891891	-2.751
28	6.8645E+17	1452496936	#####		"David Bowie low		0			0	0	0	en			<a href="http	Homewood, Al	33.459457	-86.820
29	6.8645E+17	1452496993	#####		David Bowie low		0			0	0	0	en			<a href="http	Puebla, Mv@x	19.035526	-98.173
30	6.8645E+17	1452497006	#####		@adiltamm low		0			0	0	0	en	adiltamm	6.8644E+17	<a href="http	Earth, NOW	-32.242886	115.821
31	6.8645E+17	1452497018	#####		David Bowie low		0			0	0	0	es			<a href="http	Chile	-33.456902	-70.6
32	6.8645E+17	1452497059	#####		Rip Bowie low		0			0	0	0	pl			<a href="http://www.twitter.		-34.746792	-58.377
33	6.8645E+17	1452497117	#####		David Bowie h low		0			0	0	0	pl			<a href="http	Colchester	51.918335	0.921
34	6.8645E+17	1452497123	#####		Evenin en v&l low		0			0	0	0	tr			<a href="http	kadf#kv&y/	51.516434	-0.129
35	6.8645E+17	1452497130	#####		Wg mlie najle low		0			0	0	0	pl			<a href="http	Prague, Czech	50.090092	14.406
36	6.8645E+17	1452497155	#####		David Bowie # low		0			0	0	0	pl			<a href="http	Cardiff/Hong k	22.34001	114.175
37	6.8645E+17	1452497226	#####		I cant believe low		0			0	0	0	en			<a href="http	Kilmarnock/Gl	55.86404	-4.291
38	6.8645E+17	1452497229	#####		David Bowie h low		0			0	0	0	en			<a href="http	Philadelphia	39.39998	-75.166
39	6.8645E+17	1452497233	#####		"David Bowie low		0			0	0	0	es			<a href="http	Chile	-33.463001	-70.647
40	6.8645E+17	1452497236	#####		Not Bowie low		0			0	0	0	pl			<a href="http	Brixton/Chelse	51.463001	-0.
41	6.8645E+17	1452497239	#####		Trend Alert: 'C low		0			0	0	0	en			<a href="http	Kenya	-0.0244	37.9
42	6.8645E+17	1452497255	#####		REPORTS: Dav low		0			0	0	0	en			<a href="http	Jacksonville, F	30.32633	-81.653
43	6.8645E+17	1452497255	#####		Music legend t low		0			0	0	0	en			<a href="http	Las Vegas, NV	36.161449	-115.13
44	6.8645E+17	1452497277	#####		Bowie low		0			0	0	0	pl			<a href="http	Sydney	-33.876732	151.216
45	6.8645E+17	1452497316	#####		No Bowie. tv low		0			0	0	0	es			<a href="http://twitter.com/		18.917042	-98.42

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urls	Array of Object	Represents URLs included in the text of a Tweet or within textual fields of a user object. Tweet <pre>"urls": [{"indices": [32, 52], "url": "http://t.co/1Dw8rTZR", "display_url": "youtube.com/watch?v=ng53YRH40"}]</pre> User Example: <pre>"urls": [{"indices": [32, 52], "url": "http://t.co/1Dw8rTZR", "display_url": "youtube.com/watch?v=ng53YRH40"}]</pre>
user_mentions	Array	Represents other Twitter users mentioned in the text of the Tweet. Example:

Click here for data: <https://dev.twitter.com/overview/api>

Twitter Data via Direct Call

The screenshot displays an RStudio session with the following R code in the editor:

```
8 require("httr")
9 require("devtools")
10 require("base64enc")
11 require("RCurl")
12 devtools::install("https://github.com/ropensocialmedia/twitterR")
13 api_key <- "K41D..."
14 api_secret <- "..."
15 access_token <- "..."
16 access_token_secret <- "..."
17 setup_twitter_oauth(api_key,api_secret,access_token,access_token_secret)
18 ## End of initial setup
19 searchTwitter("ncte2016", n=1000)
20 searchTwitter("trump")
21 searchTwitter(userTimeline("HillaryClinton", n=1000))
22 searchTwitter("tomliamlynch")
23 searchTwitter("charliesheen", since="2011-03-01", until="2011-03-02")
24 searchTwitter("tomliamlynch", since = "2016-03-01", until="2016-08-02")
```

The console output shows the results of the searchTwitter calls:

```
[[17]]
[1] "weareteamtrump: Join the Trump Hotels team! See our latest #job opening here: https://t.co/mnxJg9yeZW #Hospitality #LasVegas, NV #Hiring"
```

```
[[18]]
[1] "martylawson: RT @immigrant4trump: The Democrat Party #JeffSessions #Sessions #Trump https://t.co/cQWkrjx39W"
```

```
[[19]]
[1] "GLOBALFIREWORKS: The bar is so low for Donald Trump that people praise him when he reads straight from an autocue | The Independent https://t.co/d9NLLvIYEi"
```

```
[[20]]
[1] "Flashmobnewhere: RT @KamalaHarris: Weeks ago I said Sessions should recuse himself from the investigation into Russia and Trump's campaign. That is no longe..."
```

```
[[21]]
[1] "broll1820: RT @LeahRBoss: Yep. Sessions totally had clandestine meetings with the Russians for Trump...at his own office. And then at a public event..."
```

The Environment pane on the right shows the following variables:

Variable	Value
access_secret	"..."
access_token	"..."
access_token_secret	"..."
accessToken	"..."
accessTokenSecret	"..."
accessURL	"..."
api_key	"..."
api_secret	"..."
apiKey	"..."

The Packages pane shows the following installed packages:

Package	Description	Version
base64enc	Tools for base64 encoding	0.1-3
devtools	Tools to Make Developing R Packages Easier	1.12.0
RCurl	General Network (HTTP/FTP/...) Client Interface for R	1.95-4.8
ROAuth	R Interface For OAuth	0.9.6
twitterR	R Based Twitter Client	1.1.9

Question 4: What are the epistemological implications of this ontological analysis?

Twitter Data via Web-based Tool

1_bowie_geoTweets (1).tsv

Verdana 10

Sheets Charts SmartArt Graphics WordArt

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	
<	id	time	created_at	from_user_name	text	filter_level	possibly_sensitive	withheld_copy	withheld_scope	truncated	retweet_count	favorite_count	lang	to_user_name	in_reply_to_status_id	source	location	lat	lng	
1	6.8645E+17	1452496332	#####		Trend Alert: 'C	low	0				0	0	en					0.1097	113.917	
2	6.8645E+17	1452496335	#####		Trend Alert: 'C	low	0				0	0	en					15.5931	120.739	
3	6.8645E+17	1452496372	#####		Hoax, atrev low		0				0	0	en					40.430134	-3.647	
4	6.8645E+17	1452496405	#####		I don't know low		0				0	0	en					42.223949	-87.84	
5	6.8645E+17	1452496418	#####		R.I.P. David B low		0				0	0	en					51.589352	0.000	
6	6.8645E+17	1452496501	#####		#Breaking News low		0				0	0	en					34.722588	-97.253	
7	6.8645E+17	1452496520	#####		Bowie you will low		0				0	0	en					-37.790745	144.97	
8	6.8645E+17	1452496547	#####		Thanks for the low		0				0	0	en					34.11871	-118.2	
9	6.8645E+17	1452496565	#####		#bowie v@ or low		0				0	0	it					45.463699	9.18	
10	6.8645E+17	1452496571	#####		Oh no David B low		0				0	0	en					50.415855	-4.113	
11	6.8645E+17	1452496677	#####		Blimey, Bowie low		0				0	0	et					53.806973	-1.656	
12	6.8645E+17	1452496730	#####		Toch niet Bowie low		0				0	0	pl					53.293697	5.877	
13	6.8645E+17	1452496734	#####		Music legend t low		0				0	0	de					51.550274	0.633	
14	6.8645E+17	1452496734	#####		David Bowie's low		0				0	0	de					-36.791637	174.719	
15	6.8645E+17	1452496760	#####		David Bowie v low		0				0	0	tr					40.989319	29.029	
16	6.8645E+17	1452496786	#####		RIP David Bow low		0				0	0	en					49.121216	6.16	
17	6.8645E+17	1452496788	#####		RIP David Bow low		0				0	0	en					51.737457	0.494	
18	6.8645E+17	1452496795	#####		So sad David l low		0				0	0	en					51.965118	0.493	
19	6.8645E+17	1452496802	#####		wait DAVID B low		0				0	0	en					42.22393	-87.845	
20	6.8645E+17	1452496805	#####		What sh*t nev low		0				0	0	en					51.355347	-0.148	
21	6.8645E+17	1452496828	#####		1. David Bowi low		0				0	0	pl					50.500999	4.4	
22	6.8645E+17	1452496829	#####		1. #GoldenGic low		0				0	0	en					-34.608501	-58.373	
23	6.8645E+17	1452496830	#####		1. #GoldenGic low		0				0	0	en					4.6564	-74.117	
24	6.8645E+17	1452496830	#####		1. David Bowi low		0				0	0	cy					-24.916201	133.393	
25	6.8645E+17	1452496847	#####		1. David Bowi low		0				0	0	de					-43.5877	170.366	
26	6.8645E+17	1452496852	#####		Music legend t low		0				0	0	en					53.891891	-2.751	
27	6.8645E+17	1452496904	#####		"David Bowie l low		0				0	0	en					33.459457	-86.820	
28	6.8645E+17	1452496936	#####		David Bowie l low		0				0	0	en					19.035526	-98.173	
29	6.8645E+17	1452496993	#####		@adiltamm low		0				0	0	es	adiltamm	6.8644E+17			-32.242886	115.821	
30	6.8645E+17	1452497006	#####		David Bowie C low		0				0	0	en					-33.456902	-70.6	
31	6.8645E+17	1452497018	#####		Rip Bowie low		0				0	0	pl					-34.746792	-58.377	
32	6.8645E+17	1452497059	#####		David Bowie h low		0				0	0	en					51.918335	0.921	
33	6.8645E+17	1452497117	#####		Evenin en v low		0				0	0	tr					51.516434	-0.129	
34	6.8645E+17	1452497123	#####		Wg mnie naj low		0				0	0	pl					50.090092	14.406	
35	6.8645E+17	1452497130	#####		David Bowie # low		0				0	0	pl					22.34001	114.175	
36	6.8645E+17	1452497155	#####		I cant believe low		0				0	0	en					55.86404	-4.291	
37	6.8645E+17	1452497226	#####		David Bowie h low		0				0	0	en					39.39998	-75.166	
38	6.8645E+17	1452497229	#####		"David Bowie l low		0				0	0	es					-33.463001	-70.647	
39	6.8645E+17	1452497233	#####		Not Bowie u low		0				0	0	pl					51.463001	-0.	
40	6.8645E+17	1452497236	#####		Trend Alert: 'C	low	0				0	0	en					-0.0244	37.9	
41	6.8645E+17	1452497239	#####		REPORTS: Dav low		0				0	0	en					30.32633	-81.653	
42	6.8645E+17	1452497255	#####		Music legend t low		0				0	0	en					36.161449	-115.13	
43	6.8645E+17	1452497255	#####		Bowie u low		0				0	0	pl					-33.876732	151.216	
44	6.8645E+17	1452497277	#####		No Bowie. tv low		0				0	0	es					18.917042	-98.42	
45	6.8645E+17	1452497316	#####																	

Twitter Data via Direct Call

The screenshot displays an RStudio session with the following R code in the editor:

```
8 require("twitter")
9 require("devtools")
10 require("base64enc")
11 require("RCurl")
12 devtools::install("https://github.com/ropensci/twitter")
13 api_key <- "K41D..."
14 api_secret <- "..."
15 access_token <- "..."
16 access_token_secret <- "..."
17 setup_twitter_oauth(api_key,api_secret,access_token,access_token_secret)
18 # End of initial setup
19 searchTwitter("ncte2016", n=1000)
20 searchTwitter("trump")
21 searchTwitter(userTimeline("HillaryClinton", n=1000))
22 searchTwitter("tomliamlynch")
23 searchTwitter("charliesheen", since="2011-03-01", until="2011-03-02")
24 searchTwitter("tomliamlynch", since = "2016-03-01", until="2016-08-02")
```

The console output shows the results of the search operations:

```
[[17]]
[1] "weareteamtrump: Join the Trump Hotels team! See our latest #job opening here: https://t.co/mnxJg9yeZW #Hospitality #LasVegas, NV #Hiring"
```

```
[[18]]
[1] "martylawson: RT @immigrant4trump: The Democrat Party #JeffSessions #Sessions #Trump https://t.co/cQWkrjx39W"
```

```
[[19]]
[1] "GLOBALFIREWORKS: The bar is so low for Donald Trump that people praise him when he reads straight from an auto cue | The Independent https://t.co/d9NLLvIYEi"
```

```
[[20]]
[1] "Flashmobnewhere: RT @KamalaHarris: Weeks ago I said Sessions should recuse himself from the investigation into Russia and Trump's campaign. That is no longe..."
```

```
[[21]]
[1] "bro11820: RT @LeahRBoss: Yep. Sessions totally had clandestine meetings with the Russians for Trump...at his own office. And then at a public event..."
```

The Environment pane on the right shows the following variables:

Variable	Value
access_secret	"..."
access_token	"..."
access_token_secret	"..."
accessToken	"..."
accessTokenSecret	"..."
accessURL	"..."
api_key	"..."
api_secret	"..."
apiKey	"..."

The Packages pane shows the following installed packages:

Package	Description	Version
base64enc	Tools for base64 encoding	0.1-3
devtools	Tools to Make Developing R Packages Easier	1.12.0
RCurl	General Network (HTTP/FTP/...) Client Interface for R	1.95-4.8
ROAuth	R Interface For OAuth	0.9.6
twitterR	R Based Twitter Client	1.1.9

Question 5: What are the axiological and ethical implications of this ontological analysis?

Public, Private, Continuum?



Table 7.1 Common Elements in Institutional Policy for Online Research Ethics

Common Points	Key Considerations
Understanding public and private scales	<ul style="list-style-type: none"> • Are the data publicly available? • If identity was made public, could these data damage or stigmatize the participant?
Obtaining permission and gaining entry	<ul style="list-style-type: none"> • Who manages the site? • Are there site-use rules that govern becoming a member of the site? • Are opt-out procedures in place that do not force a participant to leave the community?
Exercising caution with vulnerable populations	<ul style="list-style-type: none"> • Are the participants minors or from other vulnerable populations? • Can consent be cross-validated to ensure that participants are, indeed, providing consent? In other words, can researchers use techniques that require participants to sign informed consent in two different methods and places that allow for cross-checking and validation of permission?
Using data encryption techniques	<ul style="list-style-type: none"> • Is the proper data encryption software being used during online data transmission? • Is the researcher using data encryption software that is approved by the site of study and the institution where the researcher is employed?

Gerber, H. R., Abrams, S. S., Curwood, J. C. & Magnifico, A. M. (2017). *Conducting qualitative research of learning in online spaces*. Thousand Oaks, CA: SAGE Publishers

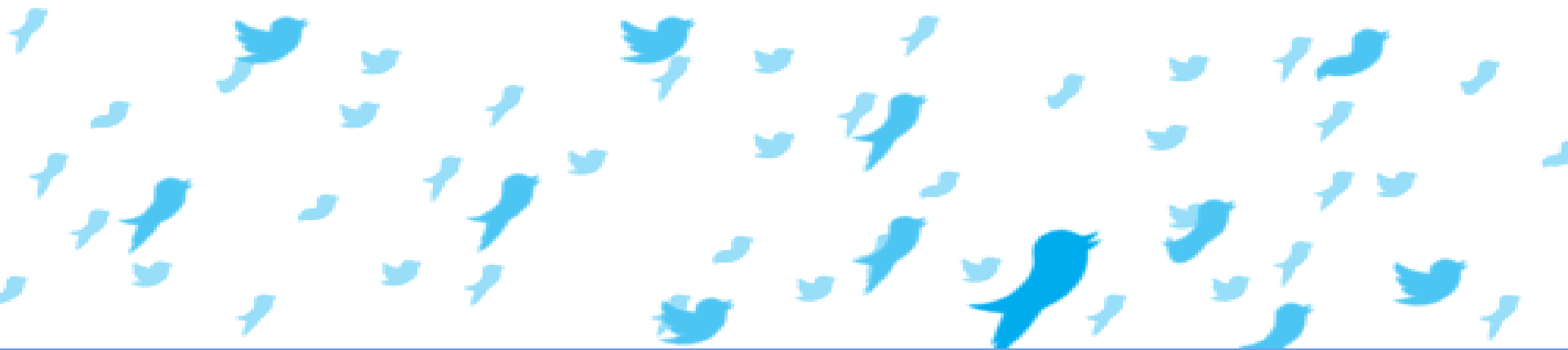
Levels of Concealment



Table 7.3 Bruckman's Levels of Concealment

Level	Key Elements
Unconcealed	Participants' names and community are revealed and verbatim quotes are used.
Minimum Concealed	Participants' names are changed; however, community names may remain the same.
Medium Concealed	There is a blend of changing participants' names, community name, and rephrasing of direct quotes.
Maximum Concealed	All identifying information is changed; fictive language is used for pseudonyms and the rephrasing of direct quotes.

Gerber, H. R., Abrams, S. S., Curwood, J. C. & Magnifico, A. M. (2017). *Conducting qualitative research of learning in online spaces*. Thousand Oaks, CA: SAGE Publishers.



Thank You!

@tomliamlynch @hannahgerber

