

Critical Infrastructure Workshop

March 29th 2018, 1-4pm, hosted by King's Digital Lab | King's College London
Staple Inn Buildings South, Chancery Lane, 3rd Floor, London

<http://bit.ly/criticalinfrastructurestudies-london> (Capital 'i')

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Organizing group

James Smithies (King's College London)

Alan Liu (UC Santa Barbara)

Matthew K. Gold (CUNY Graduate Center)

Arianna Ciula (King's College London)

Jane Winters (SAS)

Jonathan Gray (King's College London)

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Background

This is a follow-up event from

<https://www.kdl.kcl.ac.uk/events/infrastructure-symposium/> and <https://criticalinfrastructure.hcommons.org/>.

Purpose

To reset our efforts to build critical infrastructure studies, and decide on some concrete next steps (bibliography, books, websites, articles, events etc).

Agenda

1.00 - 1.30pm: Welcome and group introductions (James Smithies & Alan Liu)

1.30 - 2.20pm: 8 minute talks about infrastructure from the organizing group.

2.30 - 4.00pm: Agenda to be determined by organizing committee. Our primary goal is to generate some meaningful actions / next steps.

4.00pm - 5.30pm: Option of drinks at King's Digital Lab, en route to *Digital Humanities & Digital Modern* book launch.

Resources

- Collective Bibliography Taxonomy:
<https://docs.google.com/document/d/1aD9VlvS7sKzCSJGSVPU2I13JMeIcOBEf4pSd0x0lw4g/edit>
- The stub of a Zotero group, created after the 2016 London symposium:
https://www.zotero.org/groups/704687/critical_infrastructure_collective.
 - [Zotero group bibliography on critical infrastructure studies](#) (in progress)
 - [Taxonomy \(tag structure\) for the Zotero bibliography](#) (in progress)

Attendees

First name	Last name	Email	Twitter :-)
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James	Smithies	james.smithies@kcl.ac.uk	
Jane	Winters	Jane.Winters@sas.ac.uk	

Introductory talks

James - Introduction

- Open-ended workshop
 - Organised on occasion of Alan Liu being in London for James's book launch
 - Agenda-setting
 - Outcomes - book anthology, website, network, Zotero group - everything on table at the moment
 - In order to have not too broad conversation
 - Agenda:
- Intros
 - [Going round table]

Alan - Framing

- Scoping
- Three kinds of questions
 - Whether CIS holds together as a concept - all available for interrogation

- Even before conceptual level - CIS - tactical opening towards new kinds of questions, cannot be asked in terms of dominant intellectual concepts
- What can we think about through concept of infrastructure, and not through media
- Even before tactical - what are natural boundaries, relationship with other fields of critical infrastructure studies
- Whether holds together as other field or domain
- Scoping exercise #1
 - digital humanities and CIS
 - What kind of cultural critical is uniquely appropriate and purposive for DH
 - Cannot be conducted otherwise than through DH methods
 - Answer I'm focusing on is critical study of infrastructure
 - Information technology infrastructure
 - Cyberinfrastructure
 - Critical study/practice
 - Cyberinfrastructure - evolve at lower/minimal levels of scale
 - Learning management, basic support (email, payroll) - climb into cloud. ETS systems. Originating in/for corporate sector.
 - Mukurtu. Stable protocols. Not like Wordpress CMS. Print goes back to Gutenberg.
 - Content Management System. Managerial system.
 - Mukurtu. Aggregative pattern, content/identities, against modern digital capitalist enterprise.
 - Google, Facebook, Apple.
 - Respectful / critical commentary, just one instance of critical study of cyberinfrastructure.
 - How DH can be not just neoliberal tools. Guide between different institutional paradigms.
 - Information technology counter. Portfolio, cyberinfrastructure studies.
 - Operational experience of culture.
 - Raymond Williams - Large Technological Systems.
- Scoping exercise #2
 - What might be involved in critical infrastructure studies.
 - Critical infrastructure studies
- Bibliography
 - Zotero + Google Doc
 - Related fields - verge onto CIS - infrastructure studies
- Alan teaching course on CIS in fall.

Matthew Gold

- MLA session
- Work on cloud
- Human and non-human actors
- Complex assemblages of infrastructures
- Affective dimension to that
- Sense of feeling normal that these social networks give us
- As we continue to explore critical infrastructure studies we shouldn't ignore affective dimension, and interplay of human/non-human forces
- Intro to DH - response to how it can sometimes be understood as set of tools which can be applied to text. Towards epistemology and ways of knowing
- To what extent can we describe an infrastructural perspective that would be in line with feminist or Marxist perspective.
- What that perspective would help us to pay attention to.
- Elements of materialism that infrastructure studies calls us to.
- Bureaucratic practices that Alan describes.
- PhD on IT purchasing. How enterprise contracts tends to structure work in academy. Lots of things to explore there.
- Generative and possibly activist side. Possibility of building infrastructural systems. In line with what Alan is thinking. Building out new systems for scholarly exchange. That can perhaps decentre systems and platforms like academia.edu.
- Thinking about free software. Building out scholarly communications

Arianna

- Slides:
https://drive.google.com/file/d/1wjTPc1_yBk34SoNttDTuTcgSD-CCxL1-/view?usp=sharing
- Previous work at European organisation on Research Infrastructures (ERC)
 - Entangled with political /financial pressures
 - Various models of RIs (national, international, institutional, funding etc)
- Different levels and scales - national, European, international
- "Best" infrastructure :-)
- Science and technology councils
- Used to support national infrastructures
- Humanities not included in that effort
- UK Roadmap 2012 - humanities mentioned very briefly

Jane

- Human part of infrastructure
- Libraries and archives as part of infrastructures
- Often ignored when decisions about infrastructures which are made
- Survey

- Quite skewed towards south east
- National picture
 - 13 centres - specifically on DH
 - 13 research groups / networks
 - Funding part of infrastructure
 - Not much funding available
 - Very little DH funded in UK apart from British Council and AHRC
 - Ability to respond to current roadmap to secure funding is important
 - Majority of funding from outside Europe - particularly EU funding (concern for UK)
- Human part - advocacy, securing funding, training, skills, career pathways
- Nobody agreed on anything - good idea, but much vaguer
- Learned society model

Jonathan

- Slides:
 - https://www.dropbox.com/s/o9glxx42zagwy4g/CriticalInfrastructureStudies_RadicalEdit.pdf?dl=0
- Response from Alan
 - Not just data - also other infrastructures (do questions spend at different scales)
 - Also not just visualisation - but also writing (how do we account for infrastructures)

James

- “Doable problems”
- Is CIS a doable problem?
- Most important infrastructure - human infrastructure
- Biggest risk is loss of staff
- Working at College level to define career paths
- Defined roles - software engineer, analyst, etc
- Aligned to industry framework
- Skills framework for information age
- Linux
- Systems Infrastructure in full-stack terms
- Heterogeneous software
- Related to organisational change
- Software stack based on Python and Django
- Aligns quite well to digital humanities
- Procedural infrastructure
- Constructing doable problems in cancer research, articulating alignment
- Technology alone cannot make problems doable, doability is product of organisational work
- Align three different world

- social world (organisational politics, funding agencies),
- laboratory level (analysis, procurement, grant-writing, administrative),
- experiment level (lab coats)
- Articulation between levels which makes doable
- Analysts will sit down with someone to develop software products
- Lab and social work above it
- Fujimura (1997)
- Young scientists not trained enough - forcing undoable problems
- Over time they get better at alignment
- Our lab
- Doable problems

Discussion

- Robin Williams
 - 12 years of infrastructure studies
 - The 'I' word
 - Scale
 - Geof Bowker, Leigh Star
 - Identical agenda, different sides of pond
 - Cyberinfrastructure and also commercial/service delivery infrastructures
 - Jointly organised event - Association Information Systems
 - Build for longevity
 - Language of systems design no longer helped, not built in any one place
 - No longer building, but growing
 - Imperfect tenses - perennially unfinished nature
 - Default methodology - is the laboratory ethnography
 - Entirely unhelpful - not built in any one place at one time
 - Actors trying to manage inheritance from past, and manage to future
 - Methodologies
 - Tries to link together multiple studies - different
 - Snapshot studies - produce wrong accounts
 - Sociology - systems only survive because Oracle
 - Now our organisation dependent on Oracle
 - Future does not lie with mega-packages - *Software and Organisations: The Biography of the Enterprise-Wide System - Or how SAP Conquered the World, Routledge 2009 (Neil Pollock and Robin Williams)*
 - Went to write book - went back to writings
 - Robustness and functionality per unit price
 - Generic functionalities can be
 - Computer scientists, organisational studies, information systems background - very particular account -
 - Michigan

- Unmanageability
- Steve Jackson's work on repair
- What happens when things do breakdown
- Repair studies
- Putting bandaids over things
- Steve Sawyer
- If you have these huge systems of systems - doesn't mean they have same orientation
- Different computers
- Responses:
 - James: reminder of depth or work from STS perspective
 - Alan: data systems, organisational systems or general problems - extending back to prehistoric times (building of huts, houses, etc) - **continuity vs change**
- David
 - Throw in a few critical remarks
 - Is it coherent?
 - Is it even critical?
 - Critical infrastructures might do
 - Tends towards managerial/therapeutic discourse
 - Interesting at positioning intellectuals
 - Dangers of co-option
 - What are the ends of critical infrastructure studies?
 - Kind of maybe all agree
 - Under the surface - critique that falls into craft question, localism, openness, participation
 - Historicising, what is critical infrastructure studies
 - Maybe question not what are infrastructures for, but what do infrastructures mean
 - Bernard Stiegler - working on similar set of questions - infrastructure studies speaks to that concept already
- Responses
 - Hear very well whether hangs together
 - Critical, infrastructure (right objects), studies (what is investment of academic)?
 - Managerial - critical has to be different from a manager. Can manager also be critical? Future of intellectuals. In some countries, only true critics are engineers.
- Pip
 - Theoretical framing interesting if not immediately relevant
 - People who are not yet engaged but are curious
- Responses
 - James Smithies
 - Ambivalent about Critical Infrastructure Studies label
 - Libraries, archives, metadata, anthropologists who build huts
 - Put that all together

- Matthew Gold: managerial discourse as well - amplify Alan's point. Other side of attention to infrastructure. Critical Infrastructural Studies perspective. How can it help us to explore issues in the academy in a new way.
- Jonathan: just as point of clarification, infrastructure studies is a (sub-)field already.
- Infrastructure Studies has been around - primary contributors Bowker, Star, built environment studies. More players coming to the table. More movements have potential to intertwine. Boundary object.
- Function of field such as critical infrastructure studies - could be to negotiate.
- Questions about critical infrastructure studies very similar to questions about digital humanities.
- Social machines.
- Business analysis and change management.
- Libraries create lots of different infrastructures.
- Mia: Importance of mapping across languages (e.g. business analysis and change management, information studies); Sneak in humanities ideas and infrastructure ideas in making projects. Must have computational literacy to articulate ideas for DH, infrastructure projects, but don't want to lose wild crazy 'undoable' ideas for new research questions. Who are the people who create, design, sustain infrastructure.
- James: change management, business management. Struggle with this language. Intellectual collision. Humanities tradition.
- Big challenges that was fleshed out.
- Anne Alexander: listening at the moment :-)
- Leif:
 - Critical Infrastructure from being oxymoronic, to being genuinely useful. Solutionist discipline. Introspection, reflection. What digital humanists do.
 - Fruitful dialogue.
- Scott
 - Simple thing. Study critical infrastructure. Cyberinfrastructure. Risk.
 - Power network.
 - Issues somehow different.
 - Who are system builders.
 - Who is building energy systems?
- Responses:
 - Alan:
 - Critical infrastructure (as in essential). Cannot fail technical systems.
 - Critical / critique - critical to who, in what purpose.
 - James
 - Elusive character of concept of infrastructure.
- Paul Spence:
 - Global perspectives on digital humanities.
 - Aware of Bowker/Star

- Rethink how we do things
- Global perspectives.
- Comparative study of infrastructures, but also potentially infrastructures to make things global.
- Caroline Bassett
 - Are critical infrastructures critical?
 - Infrastructure coherent?
 - No and no
 - Two things: involved in infrastructures. If we don't make them critical, then what are we doing? (Divided)
 - Otherwise what kind of humanities scholars work in DH.
 - Question back to James: being sustainable. What is sustainable? Being the right size. What you thought about that. Make you think about scale and size.
 - Why that you can ask about sustainability?
 - Not coherent - go with. But like to question it. Interested in stakes of coherent
 - About stacks. Not sure about stacks as a good topology.
- Responses:
 - Alan: Open dialectical question.
 - Arianna: Form, rules. (two different senses of 'form' in modelling: Morgan, Mary S. (2012) The world in the model: how economists work and think Cambridge University Press, Cambridge, UK. ISBN 9781107002975)
- Caroline
 - Different reason - how it arises. Why you want it.
 - Text cultures can't handle something - scale.
 - Object oriented stuff - which feels it can handle material differently.
 - Concern: peril of that - necessary peril.
 - Performative, as well as materialised performance.
 - Models matter and the models you make matter.
- Beatrice
 - What is infrastructure?
 - Not word that have used in my work often.
 - But structure does.
 - But before we can talk about structure.
 - S word - structure. Bad word for a long time.
 - But we do care now. What is structure has come back with a vengeance.
 - Technoscience instead of language.
 - Very brief personal contribution - any critical infrastructure studies can bring forth studies.
- Responses:
 - Alan: Genealogy - what is the relation between critical infrastructure studies, structuralism, systems theory and Marx
- Beatrice:
 - Are we talking about systems or something else.
- Jonathan:

- The “risk” on CIS as an object of study
- Robin
 - Infrastructure studies
 - Local/global tensions - between irreconcilable tensions
 - Infrastructure studies
 - Italian business schools - platform
 - Counted and dealt with in large numbers
 - Who is owning the discourse
 - We haven’t owned the platform concept
 - We have owned the infrastructure concept
- Scott
 - Study internet memes
 - Two questions
 - Purchase on cultural complexity
 - Horizons of intelligibility / sense
 - Media and thinking - Peters, Innis, McLuhan
 - Epistemological question - think through machines that we think with
 - Can that make it critical
 - Give it an epistemological perspective
 - Infrastructural conditions - for negativity, for alt-right
 - Are they infrastructural conditions for emotions for aesthetic categories
 - Can you solve some of the problems that media studies was able to solve
- Bernard
 - Critical Infrastructure Studies
 - Carrying out critical investigations
 - Pushing inquiry in new directions
 - Rise of family therapy in 1950s/1960s - two different sites of infrastructural work. Family therapy. Suburbs. Intertwines with other models.
 - 19th century spiritualism. Telegraphy, canals. Communicating with the dead.
 - Social and cultural forms.
 - Critically interrogating other social and cultural forms.
 - Infrastructure a useful way of getting a handle on particular way of concretising and stabilising what has become invisible.
 - I don’t necessarily want to define the term infrastructure. Want to use to to study culture and society.
- Alan: next steps
 - Volume
 - Conference
 - Anthology
 - Bibliography
 - Syllabi
 - What if a group like this were to build an object together. Build some infrastructural thing. Subgroups involved in design of that - would bring together different perspective from field. Star/Bowker/Edwards crowd.

- What table would look like once we have learned lessons? Could drive a conference.
- Would you take a concept development?
- Making an infrastructure theme.
- Alan:
 - Imagine a system adapted for people who die
 - Build systems which are tolerant of decoherence and decay
- Discussion
 - Entropy - things go wrong
- Matthew
 - Conference, edited collection
 - Speculative design could be chapter in book / couple of presentation
 - In favour of book-object
 - Set of focused critical intervention
- Anne
 - Decolonisation - particular model

Action items

- Set up a channel
 - What is the channel?
- Organise collaboration
 - Convene proper scope of participants in project using also examples
 - Self-participants organise into subgroups (e.g. STS group, feminist group)
 - Create a menu of 3 wish items to build
- Initial call for participation
 - For book
 - For group
- Menu of activities
 - Organising an event
 - Speculative design
 - Publications