



How publics shape innovation

LED lighting in Lyon and Berlin

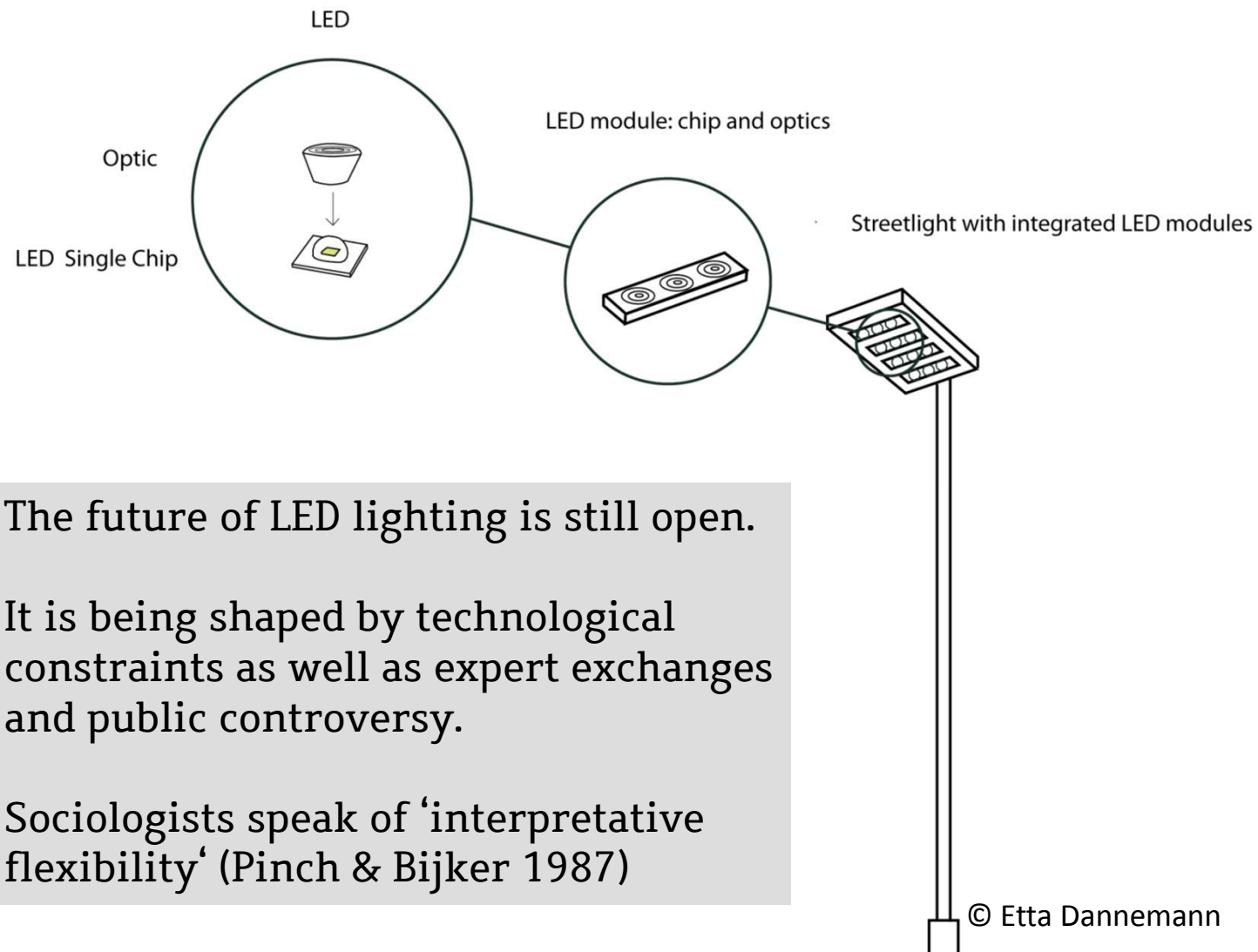
Nona Schulte-Römer



Today

1. Innovating in public
2. 'Publics' & 'innovation'
3. Two cities, six LED projects
4. Public lighting in Lyon
5. Public lighting in Berlin
6. City-specific publics and LEDs
7. Conclusion and outlook

1. Innovating in public

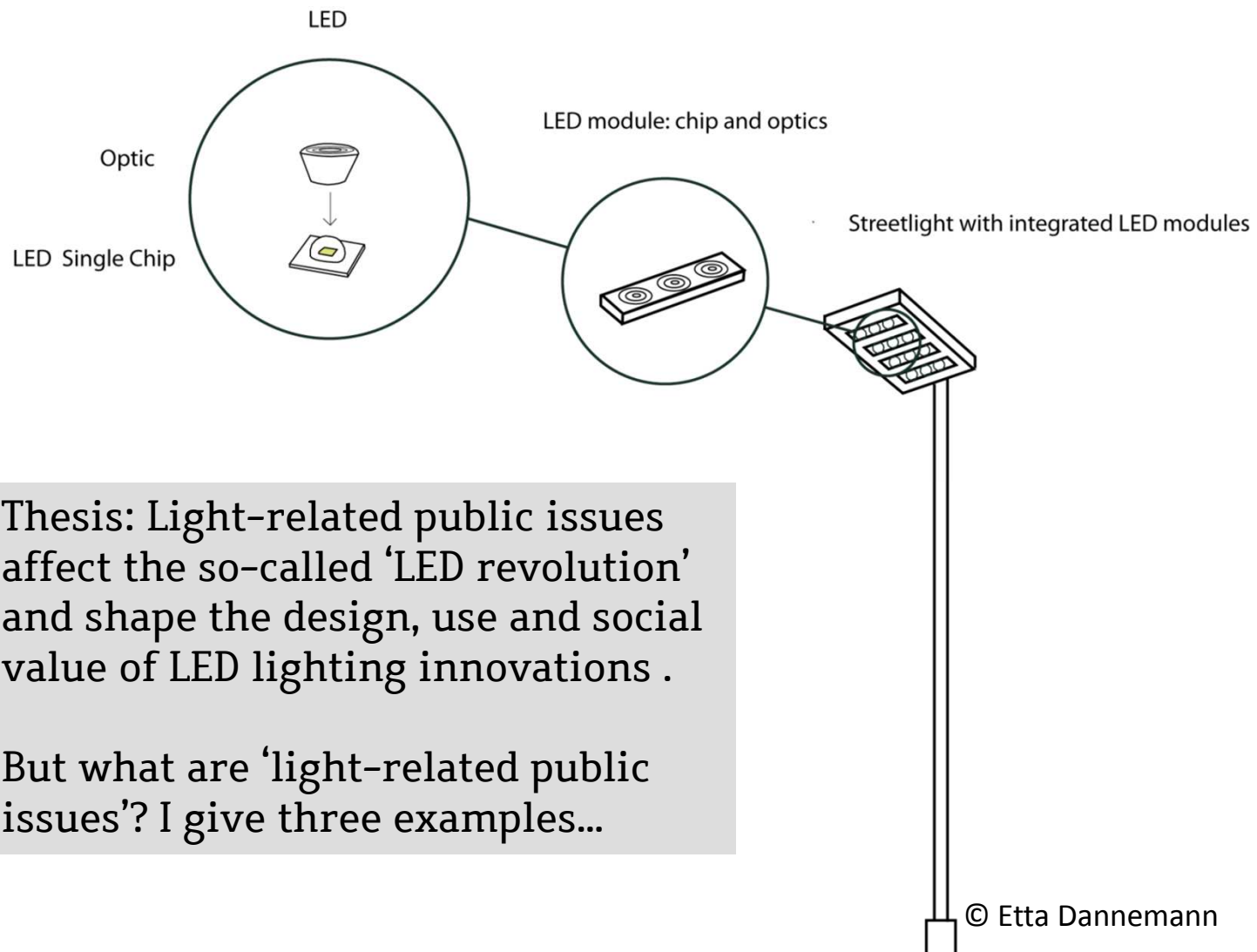


The future of LED lighting is still open.

It is being shaped by technological constraints as well as expert exchanges and public controversy.

Sociologists speak of 'interpretative flexibility' (Pinch & Bijker 1987)

1. Innovating in public



Thesis: Light-related public issues affect the so-called 'LED revolution' and shape the design, use and social value of LED lighting innovations .

But what are 'light-related public issues'? I give three examples...

1. Innovating in public

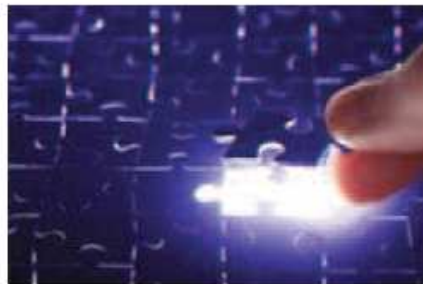


EUROPEAN COMMISSION
Directorate-General for Communications Networks, Content and Technology

I) LED-related EU innovation and climate change mitigation policies

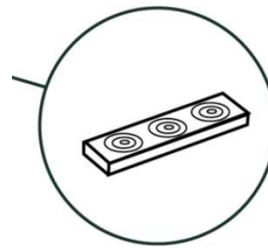
Lighting the Cities

Accelerating the Deployment of Innovative Lighting
in European Cities



April 2013

LED module: chip and optics



Streetlight with integrated LED modules



© Etta Dannemann

II) A concern for light pollution leading to the 'reshaping' of street lighting fixtures in the areas close to several observatories in the San Juan Province in Argentina (March 2015, Barreal)





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Zunehmende Lichtverschmutzung

Umwelt, Naturschutz, Bau und Reaktorsicherheit/Kleine Anfrage - 13.05.2015

Berlin: (hib/PK) Die zunehmende Lichtverschmutzung ist Thema einer Kleinen Anfrage (18/4853) der Fraktion Bündnis 90/Die Grünen. Es handele sich um die Beeinträchtigung des natürlichen nächtlichen Lichts durch künstliches Licht, hervorgerufen beispielsweise durch Straßenbeleuchtung, Lichtreklame, Flutlicht oder Industrieanlagen.

Auch unter Wasser sei die nächtliche Beleuchtung ein Problem. Die Lichtverschmutzung beeinflusse Ökosysteme und habe negative Auswirkungen auf die Gesundheit und das Wohlbefinden von Menschen und Tieren. Die Abgeordneten wollen von der Bundesregierung nun unter anderem wissen, welches Ausmaß die Lichtverschmutzung in Deutschland angenommen hat.

Auch unterwegs aktuell informiert mit der **kostenlosen App "Deutscher Bundestag"** und unter m.bundestag.de.

Herausgeber

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Metz, Annette Sach, Helmut
Stoltenberg, Alexander Weinlein

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Aktuelle Meldungen

→ In den aktuellen Meldungen
suchen

III) A recent inquiry of German Members of Parliament regarding the issue of ‘increasing light pollution’



2. 'Publics' and 'innovation'

'Publics' (*what are they and why are they important?*)

- form around issues and also *create issues* (Marres 2007)
- involve *specialists*, rather than generalists (Han 2009)
- can be best observed in the context of political controversy (Dewey 1927, Lippmann 1922)

My argument:

Innovation processes provoke such controversies



2. 'Publics' and 'innovation'

'Innovation' (*how I define it from a sociological perspective*)

- ...something that is *recognized as 'new'* and *valorized as 'better'* (Braun-Thürmann 2005, Hutter et al. 2009).
- ...an *activity* that goes on in the '*diffusion stage*' (Bijker 1992).

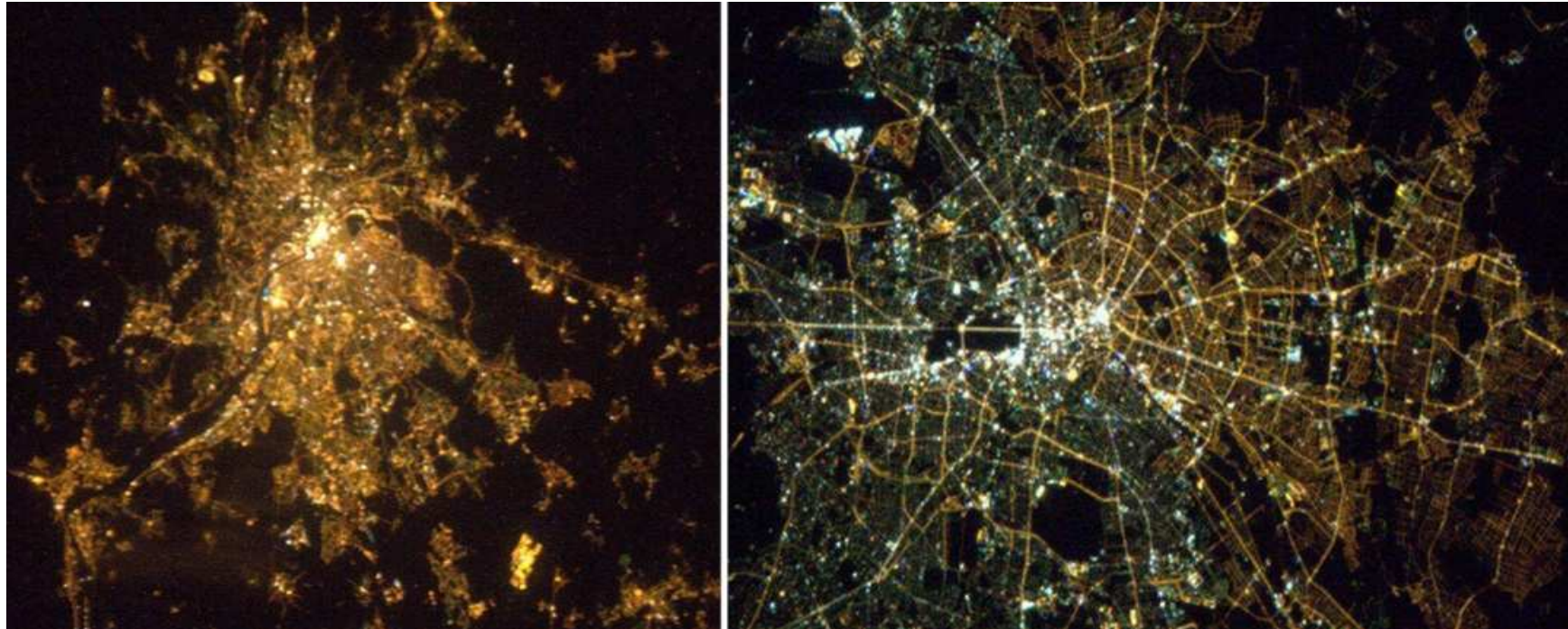
My question:

Do publics shape innovation?

In other words: Which issues are mobilized in the context of and with regard to LED projects in public lighting in Berlin and Lyon?

3. Two cities, six LED projects

In my PhD project I compared the introduction of LED lighting in two very different European cities: Lyon (left) Berlin (right).

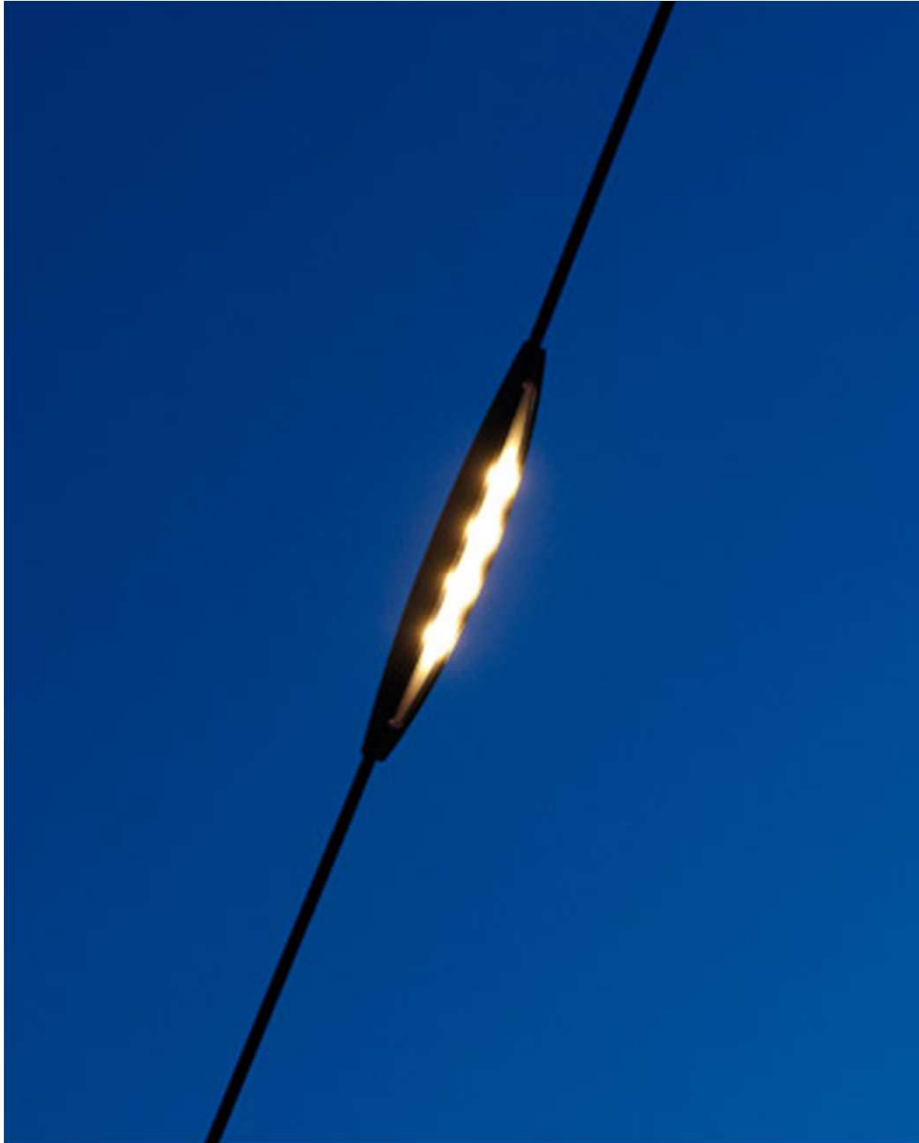


I studied, analysed and compared three ‘early LED installations’ in both cities (‘multi-sited ethnography’ & ‘situational analysis’) >





I found two different cities, two different LED approaches





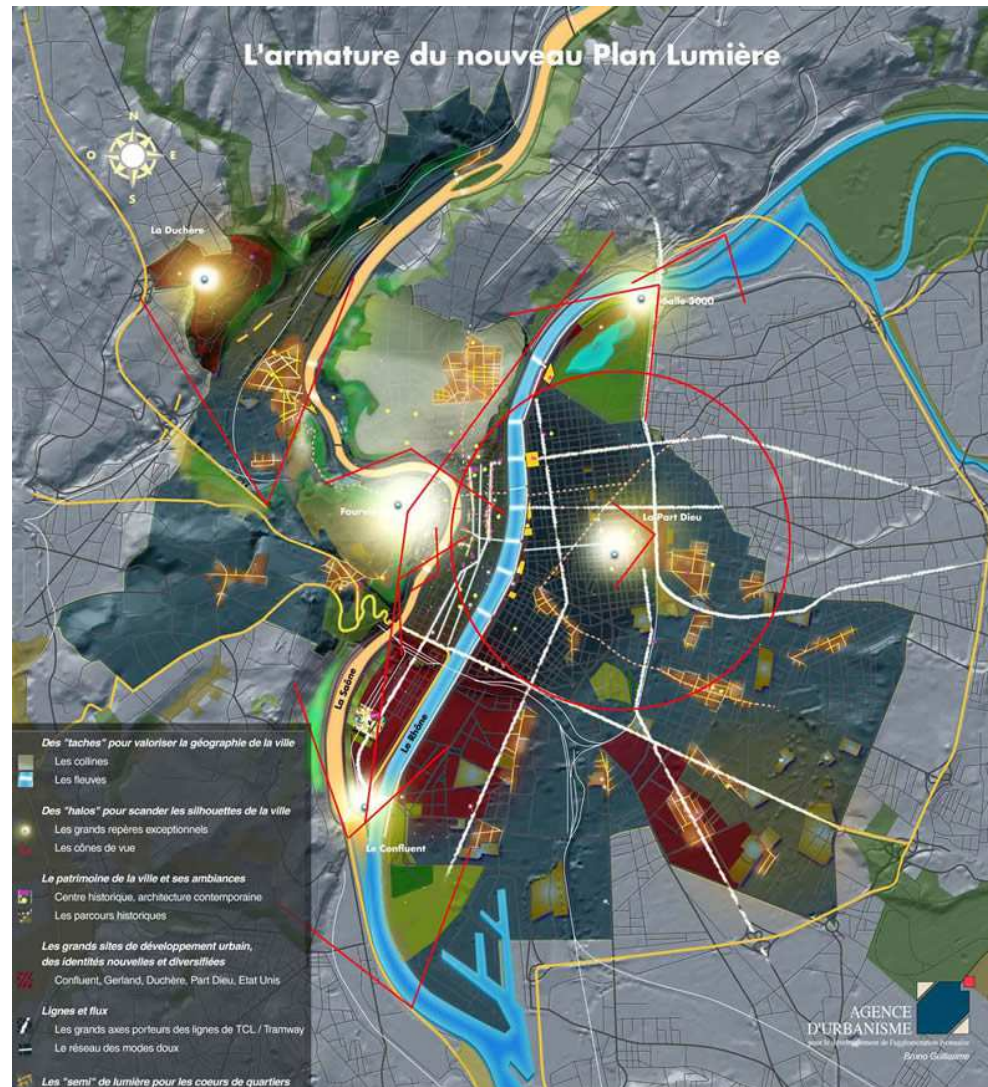
4. Public lighting in Lyon



4. Public lighting in Lyon

Lyon is famous for its integrated light planning since 1989.

Architectural lighting design prevailed in the first *Plan Lumière*. Today the issue of energy efficiency has become a key objective.



Lyon 'City of Light' (the 2011 Fête des Lumières)



4. Public lighting in Lyon

The principle of 'temporalité': Public decorative lights are switched off



4. Public lighting in Lyon



LED retrofits are installed city-wide to reduce light trespass



An international Lyon 'lighting public': LUCI (*lighting urban community international*), an international expert network of city representatives, urbanists, light planners, lighting engineers, researchers and innovators.



5. Public lighting in Berlin



‘Berlin is dark. And dark is beautiful!’

In 2011, Berlin published its first Light Plan.

The concept accounts for several, partly contradictory public issues including cost and energy efficiency, the urban image and ecological concerns.



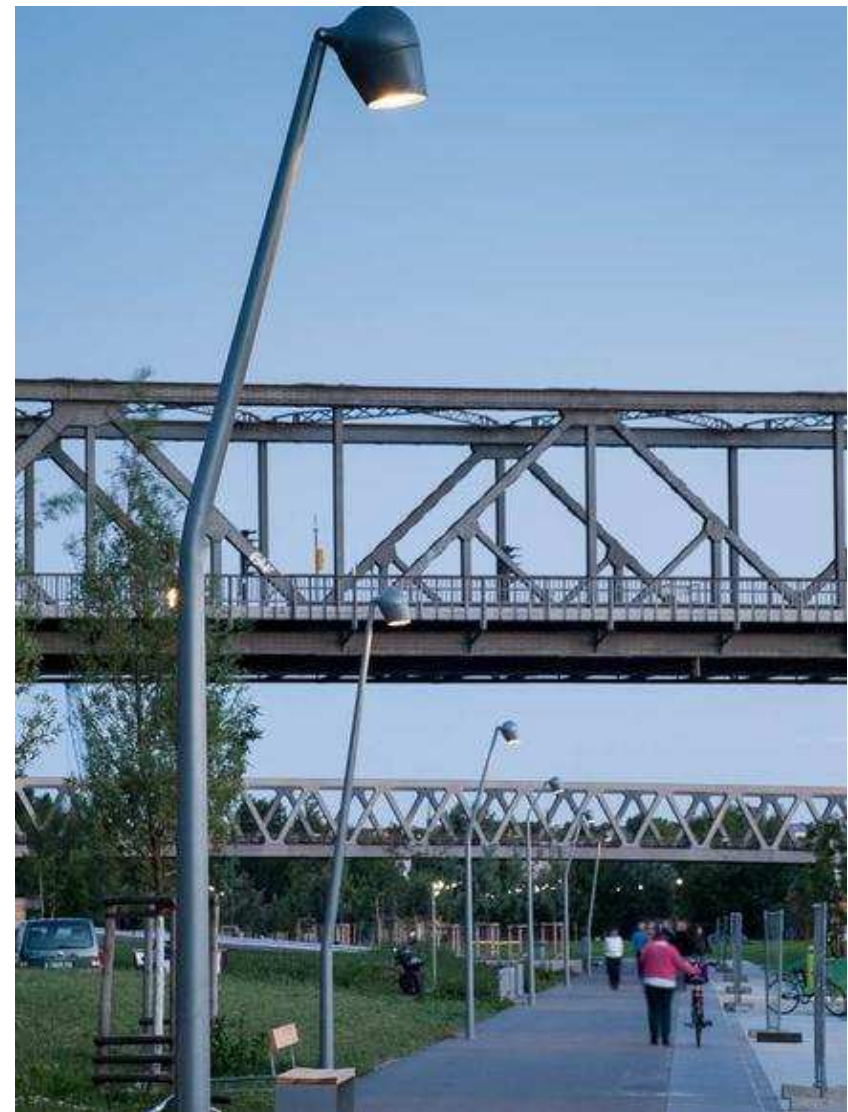
5. Public lighting in Berlin



The example of the ‚Gleisdreieck Park‘: Cycle and pedestrian paths in the new park are lit according to local standards as outlined in the Berlin Light Plan.

Thus, light levels remain below the EU standard for road lighting.

5. Public lighting in Berlin





A local Berlin 'lighting public': The friends of the Berlin gas lights protesting against the electrification of this 'unique cultural world heritage'.





Lanterns in the open-air gas light museum: dark, beautiful and typical West Berlin.

5. Public lighting in Berlin



The Berlin gas lights are also expensive to maintain and comparatively energy-inefficient. They are therefore being replaced with the twofold objective to make lighting more efficient but without changing the city image.



A Berlin innovation: Gas lights are replaced with LEDs that mimic gas lights.
Which is which? The answer can be found on:
http://www.stadtentwicklung.berlin.de/bauen/beleuchtung/de/gaslicht/aufsatz_kreuzberg.shtml



'Smart' LED solutions find no public support in Berlin (left). In Berlin, the future of this revolutionary innovation looks like 19th century gas lights (right).

6. City-specific publics and LEDs



In contrast, Lyon tests new LED applications and designs in pilot projects: 'Cutting-edge' LED solutions (left) vs. 'reassuring' gas light imitations (right).

6. City-specific publics and LEDs



The Berlin citizens protest publically against the electrification of gas lights making street lighting a public, political issue (politician with LED lantern, right). In contrast, the Lyonnais discuss the benefits and problems of the annual light festival (left) and show little concern for municipal tests of adaptive LED solutions.

6. City-specific publics and LEDs



Conclusion: City-specific publics have formed around and shape light-related issues. Lyon's LED projects are observed and applauded by an international expert audience, Berlin LED projects are observed and criticized by friends of the Berlin gas lights.



7. Conclusion and outlook

Findings from Lyon and Berlin

- **Expert and amateur publics** shape technological innovation.
- Outcomes are **compromises**, the result of social negotiations.

How are city-specific public issues and concerns translated?

- **Issues are 'scaled up'** by institutional innovations like light plans
- Issue networks and site visits can translate **from local to local**.

Issue formation is a 'soft' power game

- Resources that allow actors and groups to set agendas, voice issues or silence others are not equally distributed.
- Issue formation allocates power & is potentially non-democratic.
- Issues that are not made public have no 'social life', do not exist.

Thank you!



nona.schulte-roemer@wzb.eu



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