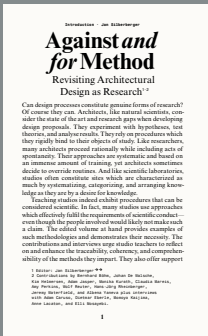


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The New Studio: A Mapping Controversies Experiment

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The New Studio: A Mapping Controversies Experiment¹

As an applied and skills-oriented discipline, architecture's traditional orientation has always been that of a professional education. No matter where architecture is taught—at traditional universities, technical universities, or universities of applied sciences—the design studio remains at the centre of knowledge production and exchange, playing a central role in shaping the fundamental characteristics of the discipline and its pedagogy. Design practice has evolved from apprenticeship through to the Beaux-Arts and then the Bauhaus traditions,² which has resulted in different types of studio teaching.³

The pedagogy of design studios and juries has been studied extensively from different perspectives.⁴ Schön's theory

1 Albena Yaneva is Professor of Architectural Theory at the Department of Architecture, University of Manchester.

2 Mark Crinson and Jules Lubbock, *Three Hundred Years of Architectural Education in Britain* (Manchester: Manchester University Press, 1994).

3 Ashraf M. Salama, *New Trends in Architectural Education: Designing the Design Studio* (Raleigh: Tailored Text and Unlimited Potential Publishing, 1995); Lance N. Green and Elivio Bonollo, 'Studio-Based Teaching: History and Advantages in the Teaching of Design', *World Transactions on Engineering and Technology Education* 2, no. 2 (2003), 269–72.

4 Kathryn H. Anthony, *Design Juries on Trial: The Renaissance of the Design Studio* (New York: Van Nostrand Reinhold, 1991); Thomas A. Dutton, 'Design and Studio Pedagogy', *Journal of Architectural Education* 41, no. 1 (1987), 16–25; Donald A. Schön, *The Design Studio: An Exploration of Its Traditions and Potentials* (London: RIBA Publications, 1985); Garry Stevens, 'Struggle in the Studio: A Bourdivian Look at Architectural Pedagogy', *Journal of Architectural Education* 49, no. 2 (1995), 105–22; Helena Webster, 'A Study of Ritual, Acculturation and Reproduction in Architectural Education', *Arts and Humanities in Higher Education* 4, no. 3 (2005), 265–82.

of ‘reflective practice’⁵ revolutionized design anthropology by founding a new epistemology of practice and by considering the competence and artistry already embedded in skilful practice. This type of studio-based reflexivity can be found in many architectural schools today and is commonly privileged by the professional schools of many research universities. It has, however, been widely criticized for promoting an inadequate idea of design learning as a mostly passive process of observation and replication in which the teacher’s main role is to correct the student’s work rather than to help them develop or hone their skills.

Schön’s well-known understanding of studio teaching involves reflective conversations and a constant reframing of problems posed by students and tutors and implications of design moves. Yet, he explicitly positions students’ prior knowledge as invalid for the task at hand and thereby, according to his critics, perpetuates ‘an abuse of power’ that is unhelpful to the development of architecture as a profession.⁶ This implies a narrow notion that learning takes place through formal interactions only and fails to recognize the other dimensions of learning in addition to the cognitive—the affective and corporeal learning experiences and the student’s potential to be an active learner. The idea of the studio as solely occupied by students and teachers is also to be questioned.

Extending the critique to Schön’s anthropology of design education, I analyse one studio experiment: the use of the controversy mapping method, its format and results, how it adds to the performative dimension of studio pedagogy, and how it advocates an alternative epistemic culture to ‘reflection-in-action’. This experiment allows an exploration and analysis of the specific role of the studio in generating and translating knowledge at the intersection between humanities and the wider social and economic networks of design, as well as the realities of the profession.

Today’s studio is based on transdisciplinarity⁷ and requires a complex group learning environment that involves

a larger number of actors. The process of learning to think like an architect implies a composite network where the lecturer is one of many participants in design pedagogy. Design teaching and learning involves different actors—digital tools, people, policies, representations, learning environments, material arrangements, and spatial devices. The studio is a complex spatial setting where different temporalities and spatial arrangements coalesce; it offers a dual context of learning about design and learning to design, endorsed and cultivated through teaching a specific attention to the performativity of design.⁸ Designers today are also ‘browsing practitioners’⁹ who surf large amounts of data, and the studio is heavily influenced by computational methods.¹⁰ In addition, students work in material environments that no longer involve sketches and drawings only but a larger amount of hybrid objects such as simulations, tests, material samples, experimental models, video and audio materials, statistics, archival documents. Instead of being a site of asymmetric reflective practice or power-based coaching, the design studio happens within a larger urban and cultural network and therefore cannot be studied in isolation. Studio pedagogy responds to the social and political challenges of the day.

5 Donald A. Schön, *The Reflective Practitioner: How Professionals Think in Action* (New York: Basic Books, 1983).

6 Laura L. Willenbrock, ‘An Undergraduate Voice in Architectural Education’, in Thomas A. Dutton, ed., *Voices in Architectural Education: Cultural Politics and Pedagogy* (New York: Bergin & Garvey, 1991), 97–120.

7 Isabelle Doucet and Nel Janssens, eds., *Transdisciplinary Knowledge Production in Architecture and Urbanism: Towards Hybrid Modes of Inquiry* (Vienna: Springer, 2011).

8 Inger Mewburn, ‘Lost in Translation: Reconsidering Reflective Practice and Design Studio Pedagogy’, *Arts and Humanities in Higher Education* 11, no. 4 (2012), 363–79.

9 Albena Yaneva, *Mapping Controversies in Architecture* (Farnham: Ashgate, 2012).

10 Malcolm McCullough, William J. Mitchell, and Patrick Purcell, eds., *The Electronic Design Studio: Architectural Education in the Computer Era* (Cambridge, MA: MIT Press, 1990).

In this contribution, I discuss the controversy mapping method as it has been practised in a master of architecture studio at the Manchester School of Architecture and argue that architects today need to engage more with similar pragmatist types of architectural enquiry that are situation-based, distributed ways of learning about architecture and its various entanglements, rather than one that would rely on a stable stock of systematic, scientific knowledge about architectural humanities.

Mapping controversies

The methodological and conceptual roots of the mapping controversies approach stem from the discipline of science and technology studies, developed from French sociologist and philosopher Bruno Latour's analysis of scientific and technological 'controversies.'¹¹ The word 'controversy' refers to every bit of science and technology which is not yet stabilized, closed, or 'black-boxed'. It neither means that there is a fierce dispute nor that it has been politicized; it is used as a general term to describe shared uncertainty. Controversy analysis is the educational application of Actor-Network Theory.¹² It consists in following, documenting, and mapping ongoing controversies.

Developing further disciplinary dialogues between design studies and Actor-Network Theory,¹³ I have introduced controversy studies in different bachelor's-level humanities courses at the Manchester School of Architecture since 2009. For the experiment described in this chapter, I asked students pursuing a master's degree in architecture to use their advanced design skills to draw, map, and visualize not an object (typically a building or a site) but a controversy—that is, a complex ecology of connections of an architectural, cultural, economic, and political nature. They followed and mapped different controversies to focus on the dynamic debates surrounding particular buildings or construction projects ranging from the redevelopment of Manhattan's Ground Zero to the reform of 1930s modernist high-rise

buildings in Sheffield, England. In line with Latour's definition of controversy, we took it not to refer particularly to media debates, scandals, rumours surrounding design plans, uncertain architectural knowledge, buildings-in-progress, tentative technologies, or building innovation but rather to the series of uncertainties that a design project, a building, an urban plan, or a construction process undergoes: a situation of disagreement among different actors over a design issue. It is rather a synonym of 'architecture in the making'.

Why deal with controversies rather than simply with buildings and shapes? Mapping controversies entails analysing controversies through research that enables us to describe the successive stages in the production of architectural knowledge and artefacts, buildings, and urban plans. In tracing how a controversy evolves, students learn about the nature of dissent. They identify the actors involved, follow the different events, and discover a complex timeline of the controversy. By mapping controversies, we also refer to a variety of new representational techniques and tools that permit us to describe the successive stages of controversies.

The Garden Bridge controversy

Here is a controversy example. It is 2019, and we are following the controversy surrounding the Garden Bridge project in London. The original design was proposed by Joanna Lumley and FAT Architects in 1997 but was rejected by the

11 Bruno Latour, *Science in Action: How to Follow Scientists and Engineers through Society* (Cambridge, MA: MIT Press, 1987).

12 Bruno Latour, *Reassembling the Social: An Introduction to Actor-Network-Theory* (Oxford: Oxford University Press, 1985).

13 Bruno Latour and Albena Yaneva, 'Give Me a Gun and I Will Make Buildings Move: An Ant's View of Architecture', in Reto Geiser, ed., *Explorations in Architecture: Teaching, Design, Research* (Basel: Birkhäuser, 2008), 80–9; Albena Yaneva, 'Making the Social Hold: Towards an Actor-Network-Theory of Design', *Design and Culture* 1, no. 3 (2009), 273–88.

London mayor at the time, Ken Livingstone. The most recent proposal was produced by Heatherwick Studio in 2013 as part of a design competition put forward by Transport for London. Adam, a M.Arch student, and his colleagues plunge into the press clippings and image galleries on the web to try to unravel all the traces this controversy has left in the digital sphere: archives, governmental papers, press clippings covering the community protests, images, and videos. Articles, images, and YouTube material inform us about the key actors, and we can literally hear their voices of protest: ‘Officials at St Paul’s Cathedral Complaining That the Bridge Will Spoil the View of Sir Christopher Wren’s Famous Dome’, ‘Protesters Trying to Save Public Space on the South Bank and over the River Thames’. We continue to list all those groups who voice concerns about the proposal as being democratically and environmentally damaging.

The students immerse themselves in the complex data sets that allow them to reflect on not only the design of Garden Bridge but all those issues design is related to: How will the bridge affect the surroundings? How will it affect landscapes? How will the new design affect the residents? How much public money will be spent on it? Will the campaigns against Garden Bridge change the design plans? As the students collect data on the controversy and try to analyse and visualize it, they actively engage in the pragmatist enquiry known as mapping controversies.

The steps of mapping

How does this type of enquiry lead us to a different epistemology of practice in design education? How does it complement both the systematic way of knowing and ‘reflection-in-action’ that rejects a linear methodical way of knowing? As opposed to reflective studio-based design learning, mapping controversies implies a way of learning about design that is simultaneously an out-of-the-studio mode of questioning the multifarious connections of architecture, society, economics, culture, and politics.

To witness the learning effect, follow the students for a moment. In their attempt to map a controversy, they spend many hours browsing the Internet. First, they start by following the course of the controversy: the actors (individuals, groups or institutions), their arguments, the different positions and how they change over time, the spaces in which they develop, the many ways of closing and reopening the debates, and the extent of public involvement and participation in the process. Second, they document the controversy, collect a variety of materials, and compile a research dossier of press clippings, images, and interviews with architects, clients, investors, public bodies, concerned citizens, and users. They add materials and literature extracts related to other buildings of a similar type, look for information from governmental papers and archives, and examine architectural plans, drawings, and diagrams. In a third, and more challenging step, they map, analyse, and visualize their findings to present the chronological development of the disputes surrounding the airport expansion design plans. They visualize the dynamics, timeline, chronology of the controversies, weight of the different actors' positions, how they disperse or converge, and how a personal position might change the whole configuration of arguments and the spacing and timing of these arguments. They also sometimes make or use videos or podcasts. The software used to embed actors into a representational space ranges from basic web tools such as web page editors, Flash, and Java to 3D visual software and VOSviewer in accordance with the content. Overall, the design students create novel modes of visually incorporating controversy studies suited to a digital format. The creative use of visuals helps them to trace the dynamics of the controversy and its changing argumentative spaces.

The students have no definitions to learn and no strict recipes to follow; they simply describe what they see with the variety of tools available, meaning that they must be attentive to the details to find a uniquely adequate account

of a given situation. This is an experiment for two reasons. First, because the students should restrain themselves from explaining the design through a single theory or viewpoint—for instance, the political or the ecological perspective that would give a particular shape to the design. Second, they should try to observe the controversy not only through a singular design viewpoint or through the narrow lens of the sketch. Instead, Adam and his colleagues had to consider the design project from as many viewpoints as possible. Attempting to ignore the design critics and theorists that could provide quick and easy explanatory schemes, the students listen to what the actors say and forget (for a while) all assumptions of what this controversy might be about.

Using new techniques of representation, the students do not simply tell a story about a possible or impossible new design. They also tackle the classic question of representing the subjects of design, whose composition is always variable. The mapping refers to the variety of tools that permit us to describe the consecutive steps in the production of architectural knowledge, focusing on visual representations of the stakeholders, linking their various interests, and tracing their development through time. The same tools used by students in the studio to document and represent static objects are used here to trace their dynamics and become immersed in design ecologies. Students can employ many digital technologies, and I encourage them to choose freely from both what we provide and also what they may find on their own.

Thus, following these steps helps describe and analyse the controversy. The aim is not to unveil some general structure of social and political factors concealed behind the phenomena. The only purpose is to provide the most detailed description of the phenomena as seen by their protagonists. As Latour says, 'If your description needs an explanation, it's not a good description'.¹⁴ The visuals used by architects in the studio do not simply represent but rather deploy—this is the distinction between description

and deployment. In the first step (following the controversy) and the second step of the enquiry (documenting the controversy) the students observe and describe what they see and find, thus putting aside any social theory, any meta-reflexive frameworks that would explain particular courses of actions or the specific nature of actors. Then, in the third step of mapping, they develop further their design skills when studying a controversy on the move. The results are presented in interactive portfolios in the form of descriptive accounts of design controversies.

Back in the studio, we witness that in tracing the actors' trajectories, drawing their diagrams of relations and the timeline of the controversy while collecting the data, the students interact with a much vaster and heterogeneous assembly of actors: the London Mayor Sadiq Khan and his predecessor Boris Johnson, Joanna Lumley, Thomas Heatherwick and his studio, Arup, Transport for London, public money, sponsors such as Apple Store and SKY, officials at St Paul's Cathedral, protesting communities, environmental impacts, democratic concerns, activist groups, Westminster Council, and Garden Bridge Trust. All these actors become part of the complex ecology of the proposed design.

The mapping analytics

Let us now zoom into some specific visuals from the mapping portfolio of the Garden Bridge controversy. This project had a vast amount of media coverage (around one thousand articles written over a five-year period from sources like *The Times*, *Evening Standard*, *The Guardian*, *The Financial Times*, *The Independent*, *The Telegraph*, and *The Architects' Journal*) which allowed the students to perform large mapping studies. After introducing the nature of the disagreement

14 Bruno Latour, 'On Using ANT for Studying Information Systems: A (Somewhat) Socratic Dialogue', in Chrisanthi Avgerou, Claudio Ciborra, and Frank F. Land, eds., *The Social Study of Information and Communication Study* (Oxford: Oxford University Press, 2004), 62–76, here 67.

and the history of the controversy, Adam carefully put together a timeline that represents the key events during the project. The timeline does not simply present a chronology of events; it illustrates that this project was unique due to its amount of media coverage by playing a diagram below the timeline that shows the increase of media reports over time in line with the key events happening within the same frames with a peak in 2016 and 2017. He collected this data using the Dow Jones¹⁵ news database website Factiva's article search builder and setting the parameters to UK news sources for the search term 'Garden Bridge'. He used the database to extract specific data for each map so he could draw clear comparisons between certain aspects of the controversy. The total number of articles for each year was extracted and put into an Excel file to create the graph and match to the key events' timeline to show the relationship between the two.

Adam identified and mapped an actor diagram and a diagram that connected the key actors' positions to videos or media sources. Through this technique, we can trace the main positions of key actors like Lumley, Heatherwick, Johnson, Khan, Arup, Transport for London, sponsors, St Paul's Cathedral officials, and protesters. To further understand these actors, Adam compared data from the timeline, the press, and the actors' diagram to compile a frequency graph to show the frequency of the actors' involvement in the controversy over time. Adam extracted data from Factiva every three months, downloading text files to analyse each time period. Using the data and the search term 'Garden Bridge', key terms for the individual actors were extracted using VOSviewer. The total number of mentions were extracted, carefully avoiding duplicates (such as Boris Johnson being referred to as 'Boris', 'Mr Johnson', and 'Mayor'). The frequency of the data was then put into Excel to extract the data curves.

Through the actor frequency graph, we witness that, contrary to the students' expectations, Heatherwick as a

designer was not the key actor in the public limelight, despite his consistent presence in the press and a constant level of involvement. Arup, although heavily involved in the technical development, was mentioned far less. Khan's and Johnson's involvement as the mayors during the project is also interesting—soon after the project ended, Khan's involvement dwindled but Johnson's increased massively.

Adam further filtered the database search results by each specific news source and downloaded a set of data for each of them. Due to the varying number of results, he allowed for up to 300 terms to be included. This enables an accurate cross-comparison of data that is altered according to the difference in size of the news outlets. The maps reveal different media outlets' concerns—while all of them focus on budgets and politics, *The Architects' Journal*, for example, focuses on the architectural and engineering features of the project.

Further on, Adam analysed the Dame Margaret Hodge report. Through carefully produced maps, he concluded that this report was the reason for cancelling the project due to the high costs. The process revealed surprising findings: the designer's name is not linked to the costs, as there seems to be a disconnection between design and feasibility; the gap between estimated costs at the start (60 million pounds) and later estimates (200 million pounds) is huge; the name of Richard de Cani, which was not visible in the other maps, appears clearly here in relation to his work for Arup and Transport for London.

Mapping the controversy further, each transcript was downloaded and run through VOSviewer to produce individual maps based on documents used for the report (interviews with different protagonists). Adam found out that only two of the key actors did not see the rising costs of the project as a concern. Money was not mentioned by Heatherwick or

15 <https://professional.dowjones.com/factiva>
(accessed 5 March 2021).

RIBA president Jane Duncan, whose focus remained on the aesthetically pleasing design of Garden Bridge in the heart of London. All other actors stated concerns about procurement and budgets.

Finally, filtering data downloaded exclusively from articles that referenced the Garden Bridge published after the project had officially been scrapped allowed Adam to generate a map of the aftermath in VOSviewer. It provided an overview: 38 million pounds of public money was spent on an unrealized project; while the blame was easily placed on politicians, little was done to question the design, procurement, and tender processes or to ensure a realistic planning. Overall, the students found that an unrealistic and overambitious design combined with an unfair procurement method based on a biased competition is not a good investment of public money in iconic design.

The new studio: integrating controversy studies

Through this mapping controversies project, the students did not learn what design is; they rather learnt about what design does—what kind of effects it can trigger and how it can affect citizens, divide communities, and provoke disagreements. They immersed themselves into the many consequences of design practice and gained an awareness of its various implications. If they were to design a new bridge, especially after the controversy of this one, would they still stay in the studio, absorbed in a meditative dialogue with the sketch, staring at a model and ‘engaging in a dialogue with materials and shapes’, trying to solve the paradoxes of design? No. They would rather plunge into the design world outside the studio and face its complex ontology.

What kind of enquiry is this, and how does it differ from the studio type of reflection-in-action? It is neither a purely meta-reflexive enquiry on design nor one that situates it into reflexive frameworks (that is, a critical theory-inspired view of architecture). As compared to the studio reflection-in-action that deals with the uncertainty of design, taken in the

specific materiality of cognition, mapping is rather a self-exemplifying type of enquiry that deals with the consequences of the manoeuvres of all actors involved in situations of uncertainty and their implications, changing positions, and opinions. As Adam and his colleagues searched among the piles of articles and navigated databases and image galleries on the Internet, they witnessed a web of actors' stances involved in the controversy. This exercise is not about designing a building and trying to 'fit it into a slot' but rather about weighing the impacts a proposed building could have, evaluating the consequences of design and its implications. Mapping does not advance a subsequent reframing of the problem or offer sketching and re-sketching of different options and possible scenarios; it rather follows extending webs and multiplies their proliferation. Adam and his colleagues tried to comprehend the consequences of design and the web of shifting positions within the controversy.

In studio teaching, learning about architecture by mapping controversies can cultivate a specific attention to the performativity of design and can ultimately result in better design. In the studio today, designers consider various digital datasets when designing; they no longer engage in solitary coach-and-student problem-solving with the help of a sketch. Drawing is instead complemented by an intense data search of information, design precedents, image retrieval, actors' statements, archival materials, government papers, and information about the architects in charge. Mobilizing these new digital sources in design would imply a different mode of communication with materials and shapes, a different type of cognitive practice.

If design happens by surfing and drawing at the same time, how can this type of enquiry generate a new type of design practice? What epistemology of practice is implied in this new type of studio? The introduction of the mapping controversies approach in studios demonstrates the impact of digital technologies on studio learning and how digital tools influence the ways knowledge is generated, communicated,

and used. The cartography of controversies provides a toolkit to cope with the different hybridizations of knowledge as a dispute often cuts across disciplinary boundaries. Mapping design controversies in studios pushes the investigation of architecture students far beyond the limits of humanities and towards technology and even natural sciences. It provides an opportunity for students to showcase independent and valid knowledge; often they become experts of the specific controversy they have mapped more than any tutor could be. Rather than being an asymmetrical power game, studio learning becomes symmetrical in its temporal and epistemic rhythms of studio praxis.

The students gain valuable insights into the meaning of design through these enquiries. They learn that, when seen through a series of contested projects and users' demands, a building resembles much more a complex ecology than it does a static object. According to Schön, designers deal with uncertainty and with complex, incoherent, and messy situations and convert them to a determined form; they 'construct and impose a coherence of their own'.¹⁶ In our mapping controversies case, the designer is one who recognizes and accounts for the complexity of design by observing a dispute before making sense of it through the production of descriptions and visualizations that account for the rhythm, intensity, and scope of the disagreement; the dispersion of the actors' positions; the trajectory of their arguments; the spacing and timing; and the different ways of ending the controversy. When we observe controversies, we focus on the liquid side of social relations¹⁷ as new actors and concerns become visible. The description of controversies contributes to the solidification of these relations, reducing the complexity.

The experiment of mapping controversies makes us perceive design as part of the entire web of moves that are traced by the actions of design, including landscapes, trees, climate, affected nature, pollution, London landmarks, skyline coherence, contested regulations, public money,

mayoral politics, tender processes, legacy, and community concerns. Visuals (interactive diagrams, timelines, actor diagrams) reveal the complex, networked nature of architecture and conflicting demands on urban projects. Designing is indeed much more complex than simply trying to put a building on a site and adjust its scale to solve building problems.

Surfing designers like Adam nevertheless dream about ‘putting a building on a site’. Mapping controversies make them realize that design controversies involve all kinds of actors: activists’ groups, single architects, mayors, communities, landmarks, transport organizations, and public budgets. They all need a space to meet and debate different issues and important technical choices. In addition, the people involved and their representatives are heterogeneous: experts, politicians, clients, architects, technicians, and concerned people of the community. Their concerns are equally diverse, from politics to ethics, mechanical engineering, procurement, and aesthetics. These actors are always connected in a network. Thus, mapping controversies provides a realistic view of the social and economic complexity of the practice of designers and prepares them better for these realities. Students learn about tender and procurement processes, the role of the different public bodies involved, and the importance of acknowledging the local urban dynamics and the concerns of local communities, as well as the professional regulations at a national level.

Aiming to understand controversies in architecture, this experiment also brings theory and practice together by reconnecting and strengthening the synergies between them. It prevents students from falling into the trap of reductionism—of reducing and explaining the protest to

16 Donald A. Schön, *Educating the Reflective Practitioner: Toward a New Design for Teaching and Learning in the Professions* (San Francisco: Jossey-Bass, 1987), 42.

17 Tommaso Venturini, ‘Diving in Magma: How to Explore Controversies with Actor-Network Theory’, *Public Understanding of Science* 19, no. 3 (2010), 258–73.

Garden Bridge, with political, cultural, or social factors. These are easy frameworks of explanation. Instead, following controversies allows designers to witness the social and the architectural in a state not yet stabilized and to follow the actors through agreement and disagreement, how they shape alliances, how they scale and rescale the spaces where they move, and how they create spatial disjunctions. Here is where you find the social; here is where you can fully unpack the complex realities of design. Questioning the failed Garden Bridge proposal led designers to tackle issues of politics, urban design, climate change, iconicity, ecology, and community life. All these issues deserve more attention. The mapping controversies approach provides a new epistemic repertoire for studio teaching and better prepares students for the new political and economic realities of design practice today. It paves new pedagogical avenues that can guide architectural practitioners in further explorations of design. Moreover, this pragmatist methodology can ignite new possibilities for practitioners to be present in a world that is constantly changing.