

Degrees of opposition and cooperation

How seating plans and parliament layouts reflect and give rise to political cultures

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Background: Layouts as built social and cultural form

Building layouts have a profound impact on the way humans interact and relate to one another. Walls, ceilings, partitions and furniture placed in one way or another create meaning through the way in which they are assembled, since the resulting configuration affords humans to perceive, move about and use space in specific patterns. For instance, spatial openness creates awareness, visibility and publicity. Occluded space may invite exploration, but also engender privacy. A concrete example for the relation between spatial form and culture is offered by Robin Evans in his comparison of Renaissance and 17th century floor plans. While the former plans were structured as interconnected rooms, accommodating the societal “*fondness for company, proximity and incident*” (Evans, 1997: 69) typical of the time, the latter plans were characterised by the emergence of the corridor as a “*device for removing traffic from rooms*” (ibid: 70), reflecting a society aimed at avoiding human contact. In his seminal book ‘Space is the Machine’ Hillier argued that “*space is more than a neutral framework for social and cultural forms. It is built into those very forms.*” (Hillier, 1996: 29)

Investigating spatial form in relation to cultural and social phenomena has resulted in a rich programme of research under the space syntax paradigm² with a focus on a multitude of different building types, such as museums (Psarra, 2005; Hillier and Tzortzi, 2006), hospitals (Haq and Luo, 2012; Haq, 2018; Pachilova and Sailer, 2020), offices (Grajewski, 1992; Sailer and Koutsolampros, Forthcoming) and schools (Pasalar, 2003). Yet, parliaments have been mostly overlooked to date by space syntax research with some notable exceptions such as a study of the Palace of Westminster (Maclachlan, 2001) and an analysis of the Welsh parliament building (Mason, 2014).

Parliaments come in many physical shapes; likewise, political cultures, voting systems, representation and debating practices vary significantly across the globe, rendering parliament buildings a fascinating

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² Space syntax is a theory and method pioneered by Hillier, Hanson and colleagues at University College London to describe built form systematically based on graph and network notations, and to uncover the relationship between built form and social phenomena across different scales (see: Hillier and Hanson, 1984).

phenomenon for further research. While previous work has mapped layouts in relation to country characteristics such as population size, government type and democracy index (XML, 2016), this paper investigates the micro interior layout of parliaments from a space syntax perspective, bringing aspects of visibility, proximity and group solidarities to bear in order to describe political cultures in relation to their built form. Culture in this context can be defined as a way of ‘how things are done here’ (Deal and Kennedy, 1982), or more formally as a pattern of basic assumptions valid within a given group as “the correct way to perceive, think, and feel in relation to (...) problem [solving]” (Schein, 1990: 111).

Theoretical Framing: Interfaces and Correspondence

Two space syntax theories are applied in the context of parliament buildings: the theory of interfaces and the theory of correspondence and non-correspondence.

Interfaces, Hillier and Hanson (1984) argued are the relationships between different user groups, mainly visitors (those with temporary usage patterns) and inhabitants (whose social knowledge is inscribed into the building) as orchestrated by built forms. An alternative reading of interfaces was offered by Peponis, interpreting them as distinctive syntactic conditions that are systematically created by a pattern (Peponis, 2018). Those interpretations of interfaces will be taken up in this paper by investigating how buildings create interfaces between different political parties via the structuring of parliamentary spatial layouts alongside seating plans. The plans of the UK parliament versus the German parliament will be used for the analysis. This allows the mapping of two contrasting examples – an opposite bench model as is prevalent in the UK and some of its former colonies, versus the semi-circular model of the German parliament, which is typical of many continental European countries. Taking seating plans into account, Germany presents an interesting example due to its political culture of coalition governments and a spread-out political spectrum of parties reflected in the seating plan.

The second part of the paper builds on the theory of correspondence and non-correspondence, which was defined by Hillier and Hanson (1984) as the overlap between social and spatial relations. Systems where spatial and categorical closeness (such as kinship, class or ethnicity) did not match, i.e. non-correspondent systems were argued to create solidarities thriving on openness, inclusivity and equality. Peponis (2001: xxiii-xxiv) therefore called non-correspondence “*a social insurance policy, whereby the strengths deriving from affiliation to social groups are complemented by the strengths derived from affiliation to spatial groups*”. This will be investigated using the seating plan and layout of the

European Parliament in Brussels based on proximity as spatial relation, and grouping as well as represented nation as categorical relation.

Data and Method

Plans for the German and UK parliaments were redrawn from existing sources (XML, 2016).

DepthmapX software (depthmapX_development_team, 2017) was used to construct partial isovists (Benedikt, 1979) from a subsample of parliamentarians, i.e. the 120 degree viewshed from their seat in order to analyse the degrees of opposition and cooperation between political parties afforded by building configuration. This was evaluated on a visual basis.

Data on the European Parliament including seating plans as well as information about the MEPs³ (political affiliation, country) was obtained from their website⁴ and analysed in QGIS. Close spatial proximity between MEPs was defined as someone sitting within a 3.6m radius from the seat of an MEP, which includes four people either side sitting in the same row, as well as some of those in the rows adjacent. The average number of close MEPs was 16.9 with a standard deviation of 2.7. The degree of non-correspondence in the seating plan was calculated following the example of workplace seating arrangements provided by Sailer and Thomas (2019). They proposed a single measure called Yule's Q, which is based on an odds ratio⁵ and calculates the likelihood of finding similar others (by affiliation or country) close by given the size of groupings. A Yule's Q of +1 denotes complete positive correspondence, i.e. only similar others are in proximity, whereas a Yule's Q of -1 means complete negative correspondence, i.e. no one close by is similar. A value near zero reflects non-correspondence, i.e. a balance of same and different others in one's own proximate bubble, as well as further afield.

Results: Oppositional and Cooperative Interfaces

The degree to which a building layout and seating plan afford different interfaces becomes immediately obvious when comparing two parliamentary plans with each other: the plan of the Bundestag, the German parliament (figure 1), which was designed by Norman Foster in 1999 and is arranged in a

³ MEP stands for Member of the European Parliament.

⁴ <https://www.europarl.europa.eu/hemicycle/index.htm?lang=en&loc=bru> (Last accessed: 12 October 2020)

⁵ Yule's Q is calculated as: $Yule's\ Q = (a \times d - b \times c) / (a \times d + b \times c)$, where a is the number of MEPs that were spatially close and conceptually close to someone; b is how many were spatially distant, but conceptually close; c is how many were spatially close, but conceptually distant; and d how many were spatially and conceptually distant. For more details on the metric, please refer to Sailer and Thomas (2019).

semi-circle, and the plan of the House of Commons, the UK parliament (figure 2), which was rebuilt after destruction during World War II in 1950 with its opposing benches layout.

[insert figure 1 here]

Figure 1: Seating plan of the Bundestag (German parliament) overlaid with 120° isovists for the first four rows of parliamentarians.

The 120° isovists from parliamentarians seats all face towards the front, where the lectern is placed, but also where the government is seated (to the left of the plan) and the Bundesrat, representatives of the second legislative chamber (to the right of the plan). The political groupings sit in wedges, with party leaders seated in the front row. Due to the curvature of the semi-circle parliamentarians of one political grouping have members of other groups in their visual field, yet the overall viewing direction, as illustrated in figure 1 is directed towards the country's legislature.

In contrast, the opposing benches of the House of Commons (see figure 2) mean that the governing party, seated on the left side of the plan is facing the parties of the opposition, seated on the other side. The front row is reserved for the government, led by the Prime Minister as well as the leader of the opposition and their shadow cabinet. In particular, those so-called front benchers do not see any of their own party members in their visual fields, they only face members of the other side in their day to day viewing perspective in parliament.

[insert figures 2a-c here]

Figure 2: Seating plan of the House of Commons (UK parliament) overlaid with 120° isovists for the first two rows of parliamentarians. Isovists from government benches are coloured in blue and isovists from opposition benches in red; a) Government viewsheds; b) opposition viewsheds; c) all viewsheds overlaid.

Results: Correspondence and Non-Correspondence in the European Parliament

The seating plan in the European Parliament is organised by affiliation to one of seven political groups (see figure 3): the European People's Party (EPP), the Progressive Alliance of Socialists and Democrats (S&D), Renew Europe (Renew), the Greens / European Free Alliance (Greens/EFA), Identity and Democracy (ID), European Conservatives and Reformists (ECR), and the Confederal

Group of the European United Left – Nordic Green Left (GUE/NGL). Members without group affiliation are called non-attached (currently n=29).

We would therefore expect high levels of correspondence, so MEPs in close proximity are those with the same political affiliation. This indeed is the case with Yule's $Q_{\text{group}} = 0.903$. There is only little variation if this is split by political group with values ranging from 0.868 (EPP, sat centrally) to 0.987 (non-attached, seated at the back with little interface to the other groups).

[insert figure 3 here]

Figure 3: Seating plan of the Brussels European Parliament by political grouping

Within the seating space assigned to each political grouping, the front row seats are reserved for the group leaders, yet the remainder are allocated alphabetically. MEPs from different countries should therefore generally find themselves sitting next to a wide range of representatives from different European nations. Investigating Yule's Q by country confirms this (Yule's $Q_{\text{country}} = 0.370$), since the overall value suggests non-correspondence as expected, with a slight tendency towards having others from the same nation within one's close bubble. Partially, this is due to the number of representatives, especially from larger nations⁶. If broken down further by country, the analysis reveals interesting patterns, as shown in table 1.

Country	# MEP	my country close	other country close	my country distant	other country distant	Yule's Q
TOTAL	703	2.2	14.1	45.3	640.5	0.370
AT	19	0.8	14.4	17.2	669.6	0.390
BE	21	0.6	15.2	19.4	666.8	0.127
BG	17	0.7	15.6	15.3	670.4	0.330
CY	6	0.7	14.2	4.3	682.8	0.762
CZ	21	1.5	16.0	18.5	666.0	0.549
DK	14	0.6	16.1	12.4	672.9	0.316
DE	96	3.9	12.3	91.1	594.7	0.352
EE	7	0.3	15.3	5.7	680.7	0.380
ES	58	1.8	13.6	55.2	631.4	0.211
FI	14	0.6	14.5	12.4	674.5	0.363
FR	79	3.4	12.7	74.6	611.3	0.375

⁶ Germany, France and Italy have the largest contingents with a total number of 96, 79 and 76 MEPs in the European Parliament respectively. The numbers of other MEPs from the same nation within their close proximity bubble are 3.9 (DE), 3.4 (FR) and 4.3 (IT), which are the highest overall.

GR	21	1.5	14.1	18.5	667.9	0.591
HR	12	0.5	16.5	10.5	674.5	0.321
HU	21	0.9	15.4	19.1	666.6	0.320
IE	12	0.2	16.1	10.8	674.9	-0.215
IT	76	4.3	10.5	70.7	616.5	0.564
LT	11	0.4	16.9	9.6	675.1	0.202
LU	6	0.0	17.5	5.0	679.5	-1.000
LV	8	0.0	15.0	7.0	680.0	-1.000
MT	6	0.3	14.0	4.7	683.0	0.554
NL	29	0.8	15.1	27.2	658.9	0.140
PL	52	3.4	12.7	47.6	638.3	0.567
PT	21	1.1	14.5	18.9	667.5	0.472
RO	33	1.2	15.0	30.8	655.0	0.240
SE	21	0.3	15.5	19.7	666.5	-0.231
SI	8	0.0	17.4	7.0	677.6	-1.000
SK	14	0.3	15.7	12.7	673.3	-0.019

Table 1: Numbers of MEP in total as well as by country including average group sizes of those close / distant and from same / other countries; and resulting Yule's Q (values in blue tend towards non-correspondence, i.e. $-0.5 < Q < 0.5$, whereas those in orange tend towards negative or positive correspondence, i.e. $Q > 0.5$ or $Q < -0.5$).

Some of the smaller countries such as Luxembourg, Latvia or Slovenia show complete negative correspondence ($Q = -1.0$), which means none of their compatriots sit close to them. In contrast, some of the smaller countries, such as Cyprus tend towards positive correspondence ($Q = 0.762$), as shown in figure 4a below, where two pairs of MEPs sit close to each other within their political groupings.

[insert figures 4a-d here]

Figure 4: Seating plan of the Brussels European Parliament by country; each MEP is shown as a small circle, coloured by country; proximity bubbles of selected countries are shown in larger circles: a) Cyprus; b) Poland; c) Greece and d) Sweden.

This leads to another observation on countries leaning more towards one side of the political spectrum than others. Poland and Greece are interesting cases in that regard (see figures 4b and 4c), as both show a tendency towards correspondence ($Q = 0.567$ and $Q = 0.591$) due to a clustering of high numbers of Polish MEPs on the right affiliated with the ECR and ID and high numbers of Greek MEPs affiliated with the left GUE/NGL grouping.

Finally, countries with a balanced mix of nationals from other countries as well as their own can be found, evident by a Q value close to zero, such as Sweden ($Q = -0.231$, see figure 4d).

Discussion and Conclusions

Bringing both arguments together, the one on interfaces and the one on correspondence and non-correspondence, the relationship between building layouts and political cultures can be described.

The comparison of the German and UK parliament with its two different layout alternatives, superimposed by a strategic seating plan highlighted the creation of a range of different interfaces: on the one hand a German political culture of pragmatic cooperation, which is reflected in a system of proportional representation and a practice of coalition governments; and on the other hand the UK political culture of fierce opposition, which is characterised by a competitive first past the post representation and narratives surrounding the parliament building, such as that the distance between the two opposing benches is supposedly two sword lengths apart.

Following the argument brought forward by Maclachlan, who argued that “scrutinization in the UK parliament works by maximising encounters for confrontation” (Maclachlan, 2001: 7), it could be argued that scrutinization happens to the same degree in the German parliament, albeit with a different political culture, one whereby all members of parliament face the legislature together.

Two insights can be drawn from the correspondence analysis presented in the second half: firstly, the seating plan of the European Parliament in Brussels enables an experience of togetherness, whereby parliamentarians from all EU nations work together side by side on European policies. Unity and cohesion lie at the heart of the European project and as such the layout of the parliament reflects this vision. Secondly, it can be noted that the experience of togetherness is not consistently experienced throughout, as some nations have less exposure to parliamentarians from other countries. Not everyone benefits from the ‘social insurance policy’ that Peponis assigned to the phenomenon of non-correspondence, despite best intentions to mix parliamentarians up. It is particularly those countries where nationalist and partisan tendencies are on the rise that show some of the highest correspondence patterns and therefore inward-looking tendencies might become exacerbated by the seating plan and a lack of opportunities for mingling arise from the layout and seating plan.

In his analysis of power and built form, Dovey argued that “buildings necessarily both constrain and enable certain kinds of life and experience” (Dovey, 2008: 208). The contribution of the paper lies in the analysis of layouts and seating plans and how they constrain and enable political cultures with a differential degree of opportunities built into them.

Bibliography

- Benedikt ML. (1979) To take hold of space: isovists and isovist fields. *Environment and Planning B: Planning and Design* 6: 47-65.
- Deal TE and Kennedy AA. (1982) *Corporate Cultures. The Rites and Rituals of Corporate Life*, Reading / MA: Addison-Wesley Publishing Group.
- depthmapX_development_team. (2017) depthmapX. 0.6.0 ed.
- Dovey K. (2008) *Framing Places. Mediating power in built form*, London / New York: Routledge.
- Evans R. (1997) Figures, Doors and Passages. In: Evans R (ed) *Translations from drawing to buildings and other essays*. London: Architectural Association, 55-91.
- Grajewski T. (1992) Spatial configurations and interaction patterns within office buildings. *Bartlett School of Architecture and Planning*. London: University College London.
- Haq S. (2018) Where We Walk Is What We See: Foundational Concepts and Analytical Techniques of Space Syntax. *HERD: Health Environments Research & Design Journal* 12: 11-25.
- Haq S and Luo Y. (2012) Space Syntax in Healthcare Facilities Research: A Review. *HERD: Health Environments Research & Design Journal* 5: 98-117.
- Hillier B. (1996) *Space is the machine. A configurational theory of architecture*, Cambridge. Online at: <http://eprints.ucl.ac.uk/3881/>; Cambridge University Press.
- Hillier B and Hanson J. (1984) *The social logic of space*, Cambridge: Cambridge University Press.
- Hillier B and Tzortzi K. (2006) Space Syntax: The Language of Museum Space. In: Macdonald S (ed) *A Companion to Museum Studies*. Malden/Oxford: Blackwell Publishing, 282-301.
- Maclachlan B. (2001) Scrutiny and consensus in the Palace of Westminster. In: Peponis J, Wineman J and Bafna S (eds) *3rd International Space Syntax Symposium*. Atlanta / Georgia: A. Alfred Taubman College of Architecture and Urban Planning, University of Michigan, 44.41-44.47.
- Mason T. (2014) Creating adaptable architecture. *The Journal of Space Syntax* 5: 221-226.
- Pachilova R and Sailer K. (2020) Providing care quality by design: a new measure to assess hospital ward layouts. *The Journal of Architecture* 25: 186-202.
- Pasalar C. (2003) The Effects of Spatial Layout on Students' Interaction in Middle Schools: Multiple Case Analysis. Raleigh: North Carolina State University.
- Peponis J. (2001) Interacting Questions and Descriptions. How do they look from here? In: Peponis J, Wineman J and Bafna S (eds) *3rd International Space Syntax Symposium*. Atlanta / Georgia: A. Alfred Taubman College of Architecture and Urban Planning, University of Michigan, xiii-xxvi.
- Peponis J. (2018) What Does the Syntax of Space Say? Understanding and Designing Buildings as Interfaces. *World Architecture Review*: 32-41.
- Psarra S. (2005) Spatial culture, way-finding and the educational message. The impact of layout on the spatial, social and educational experiences of visitors to museums and galleries. In: MacLeod S (ed) *Reshaping Museum Space. Architecture, Design, Exhibitions*. London / New York: Routledge, 78-94.
- Sailer K and Koutsolampros P. (Forthcoming) Space Syntax: Understanding human movement, co-presence and encounters in relation to the spatial structure of workplaces. In: Appel-Meulenbroek R and Danivska V (eds) *Theories for Achieving Fit between People and the Office Environment: A Transdisciplinary Handbook*. Abingdon-on-Thames, UK: Routledge, Forthcoming.
- Sailer K and Thomas M. (2019) Correspondence and Non-Correspondence. Using office accommodation to calculate and organization's propensity for new ideas. *12th International Space Syntax Symposium*. Beijing, China, 166:161 - 166:117.
- Schein EH. (1990) Organizational Culture. *American Psychologist* 45: 109-119.
- XML. (2016) *Parliament*, Amsterdam: XML Architecture.