

D4.2 Comparative typology of street experiments

Experimentation with city streets has emerged as a way to 'try-out' possible solutions to acute liveability challenges including air pollution, noise, traffic-related accidents, and road congestion. **'City street experiments' are intentional and temporary changes to the street use, regulation and form aimed at exploring system change in urban mobility** (VanHoose *et al.*, 2022). In doing so, street experiments aim to improve urban mobility by shifting from "streets for traffic towards streets for people" (Bertolini, 2020). We define five types of city street experiments: (1) re-marking streets, (2) re-purposing parking, (3) partial re-purposing of streets, (4) entire re-purposing of streets and (5) the flexible closure of streets. Amidst their wide diversity in form, aim and initiators, one feature binds city street experiments: their potential **transitional capacity**, or 'ability to address fundamental social and environmental problems and achieve system change' (VanHoose *et al.*, 2022). In this report, we employ a framework for assessing the transitional capacity of street experiments to compare the different typologies in order to understand the dynamics of each type.

● Re-marking streets



Experiments that re-mark streets alter roadways in order to slow down traffic and allocate space to pedestrians and other forms of mobility. The result is a different regulation of street use, pedestrian crossings, and parking spaces. Examples include Portland's Intersection repair' and the Shared Space concept.

● Re-purposing parking



Experiments that transform parking spaces aim to employ unused space leftover when cars are in use. Vehicle parking accounts for a major portion of space use on city streets and public space, in general, and is a very inefficient use of a scarce urban resource. The concept of 'Parklets', officially first launched in San Francisco in 2005, has since spread to other cities.

● Partial re-purposing



Experiments that feature a partial re-purposing attempt to find a balance between car traffic, other transportation modes and public space. In doing so, this type often features multi-modal transportation. Two key examples include the Pavement to Plazas program in New York City and pavement enlargement in Barcelona.

● Entire re-purposing



Experiments that re-purpose the entire street challenge the standard use of roadways by shifting the primary use from motorized to non-motorized traffic and providing opportunities for non-mobility-related uses like playing, socializing, and exercising. Primary examples include 'ciclovias' of Latin and South America, 'living streets' in Europe, and the 'open streets' or 'play streets' of North America.

● Flexible closures

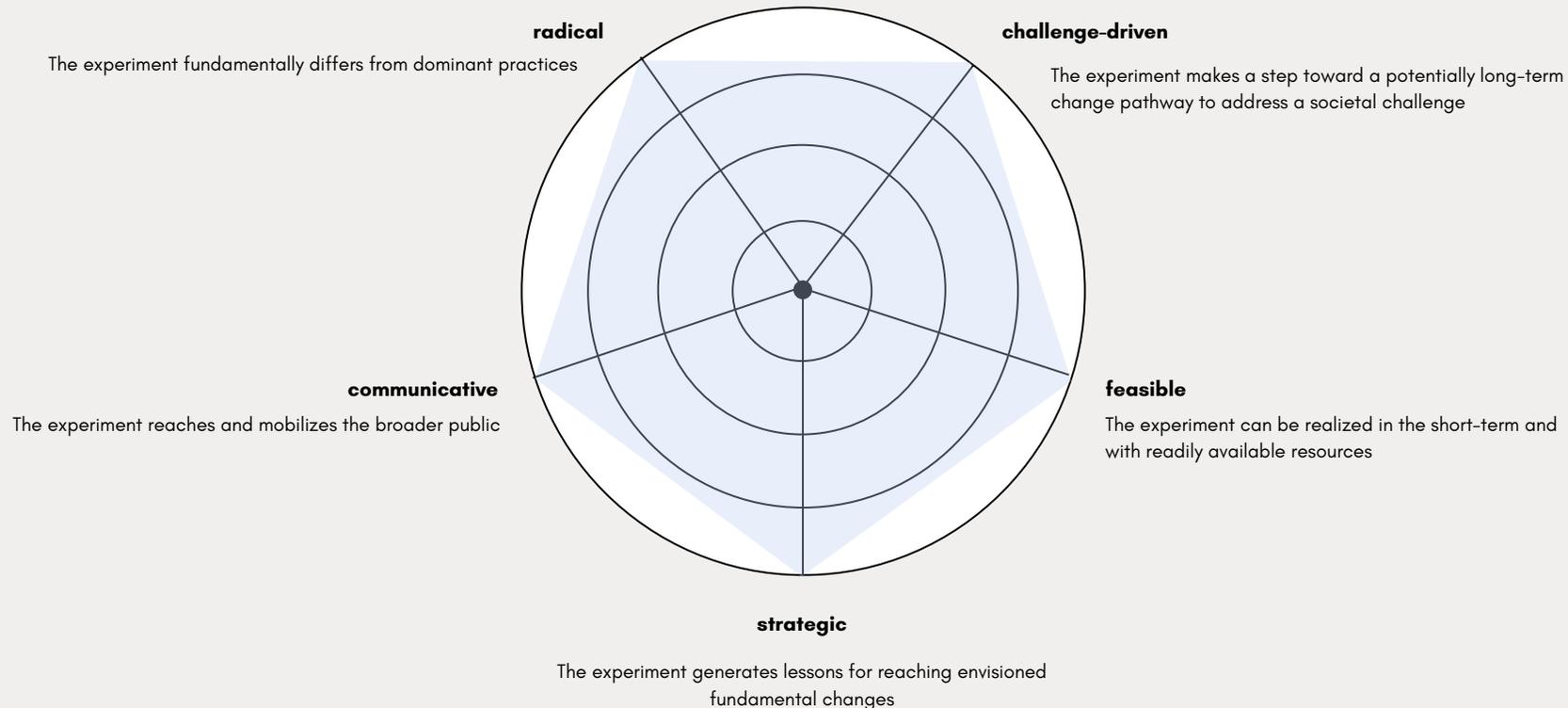


Experiments that feature the closure of roadways to traffic during certain times of the day or week. One example is a School Street, or road near a school with a temporary restriction on motorized traffic at drop-off and pick-up times.

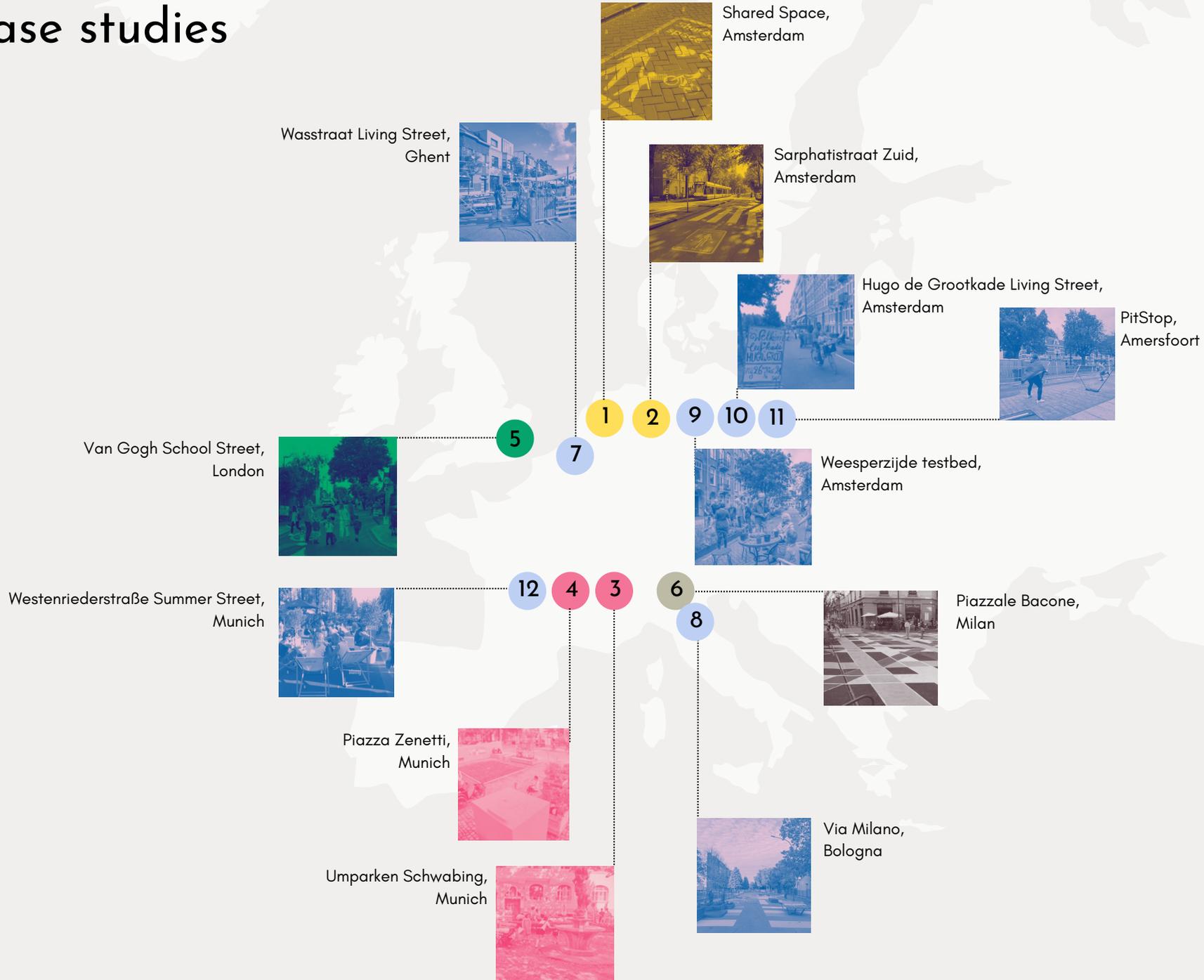
Theoretical considerations and methodology

Within transition studies, experimentation is often considered as the motor for change (Wolfram, 2016; Evans et al., 2016), however theoretical and practical understandings of how experiments can achieve system change are lacking. Recognizing this potential, Bertolini (2020) first suggested framing street experiments as 'transition experiments' or "an inclusive, practice-based and challenge-led initiative designed to promote system innovation through social learning under conditions of uncertainty and ambiguity" (Van den Bosch and Rotmans, 2008, p. 13). Building from this, VanHoose *et al.* (2022) translated the five characteristics of transition experiments outlined by Roorda et al. (2014) into a framework for assessing the **transitional capacity** of street experiments (see diagram below) and applied this to six case studies. The results revealed that the characteristics **radical**, **feasible** and **communicative** were particularly strong, while **strategic** and **challenge-driven** were weaker. Most importantly, VanHoose et al. (2022) highlighted possible trade-offs between the different characteristics (e.g. the more radical the project the less feasible) and also showed how certain characteristics interact with each other (e.g. more radical projects should be more communicative and less strategic projects could be helped by becoming more communicative).

Taking these results into consideration, we built upon this framework assessing a total of 12 case studies of varying typologies mentioned on page 1. Each local research team conducted interviews with persons directly involved in the experiment. Where possible, secondary data provided by policy documents, research articles, news articles and social media was collated to contextualize and triangulate interview responses and assessment results. Based on this material, cases were scored by the local research team on a scale from '0-2' (0 = weak, 1 = average, 2 = strong) according to the transitional capacity rubric (see appendix).



Case studies



Re-marking streets

Re-purposing parking

Partial re-purposing

Entire re-purposing

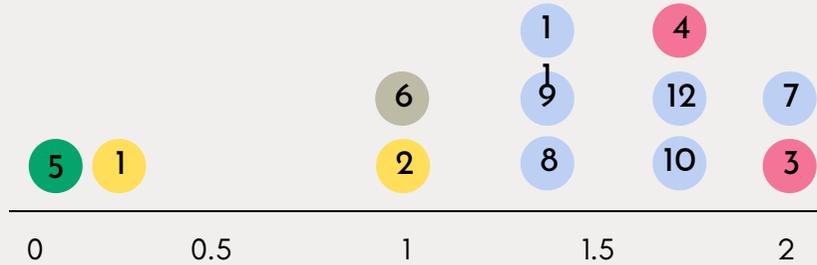
Flexible closures

Findings

Radical

Average score: 1.3

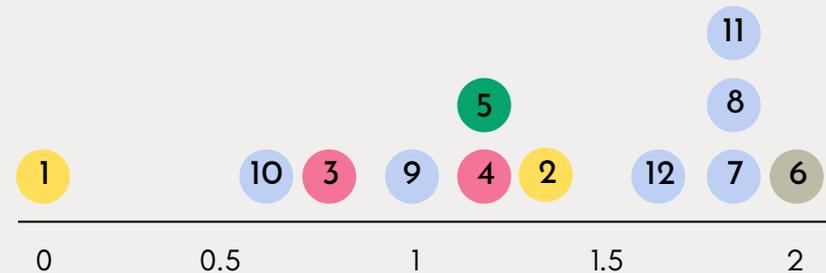
Radical experiments **fundamentally differ from dominant practices**. This includes the experiment being the first of its kind in its urban context, activating the use of the streetscape as more than a channel for traffic (e.g. socializing, playing, exercising) and includes a shift from motorized to non-motorized mobility. Only two cases scored a '2', including the Wasstraat in Ghent and Piazza Zenetti in Munich. The cases featuring an entire re-purposing and the re-purposing of parking spaces scored the highest (1.2-1.8). The flexible closure and re-marking streets typologies scored the lowest in terms of radicality.



Challenge-driven

Average score: 1.3

An experiment is considered challenge-driven when it **makes a step toward a potentially long-term change pathway to address a societal challenge**. While most current examples of street experiments seem to be focused on the event itself, they do have the potential to connect to long-term pathways towards system wide change. This characteristic includes the experiment being interdisciplinary in its ambition, combining objectives and goals (e.g. mobility, public space, social) and aiming to trigger a transition towards a post-car city. It also involves experiments being connected to existing policies or programs within the same city, having the intention to become permanent, and the ambition to scale up or be repeated (e.g. in other locations, or in more locations). For this characteristic, the entire re-purposing projects scored relatively higher than the other typologies, with the exception of the two examples from Amsterdam. Here, the differences in scores seem not only related to type (i.e. large internal variation of entire re-purposing and re-marking streets) and are therefore experiment specific.



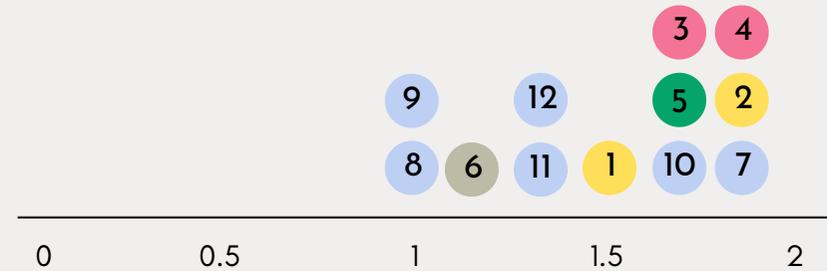
1: Shared Space; 2: Sarphatistraat Zuid; 3: Upmarken Schwabing; 4: Piazza Zenetti; 5: Van Gogh School Street; 6: Piazzale Bacone; 7: Wasstraat; 8: Via Milano; 9: Weesperzijde Testbed; 10: Hugo de Grootkade; 11: Westenriederstraße Summer Street; 12: PitStop

Findings

Feasible

Average score: 1.4

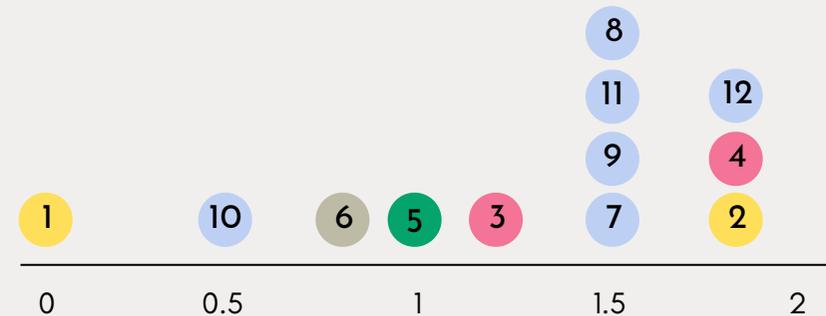
Feasible experiments can be **realized in the short-term (less than six months) and the necessary resources for implementing the experiment are made available**. This characteristic also includes experiments being well-organized and coordinated (e.g. arranging of permits, street markings, signs), garnering support of residents, local business and other stakeholders and arranging alternative transport (passenger and freight) and parking options (if this is applicable). The less radical and arguably less complex typologies (re-marking streets, re-purposing parking, flexible closures) scored the highest on this indicator. Interestingly, the two examples of Living Streets (#10 and #7) scored relatively high, significantly higher than the other examples of entire street closures.



Strategic

Average score: 1.2

Strategic experiments **generate lessons for reaching envisioned fundamental changes**. Strategic includes experiments recognizing drivers and barriers in the transition towards a post-car city. It also means being monitored, assessed by way of different forms (e.g. qualitative (interviews; observation), quantitative (surveys, traffic patterns) and/or evaluated and using evaluations as input for long-term policy development. Here, entire street re-purposing and re-purposing of parking were the highest scoring typologies. The Sarphatistraat Zuid was an outlier, scoring much higher than its fellow re-marking street experiment, Shared Space.



1: Shared Space; 2: Sarphatistraat Zuid; 3: Upmarken Schwabing; 4: Piazza Zenetti; 5: Van Gogh School Street; 6: Piazzale Bacone; 7: Wasstraat; 8: Via Milano; 9: Weesperzijde Testbed; 10: Hugo de Grootkade; 11: Westenriederstraße Summer Street; 12: PitStop

Findings

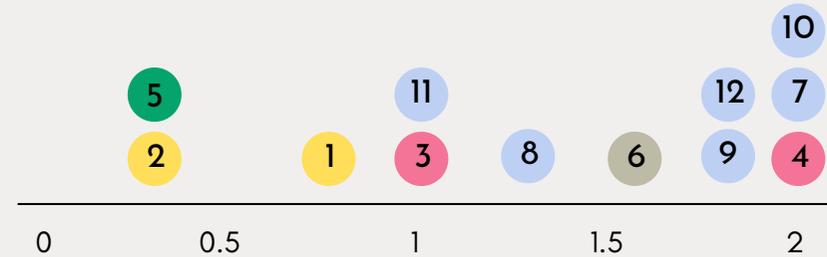
Communicative

Average score: 1.2

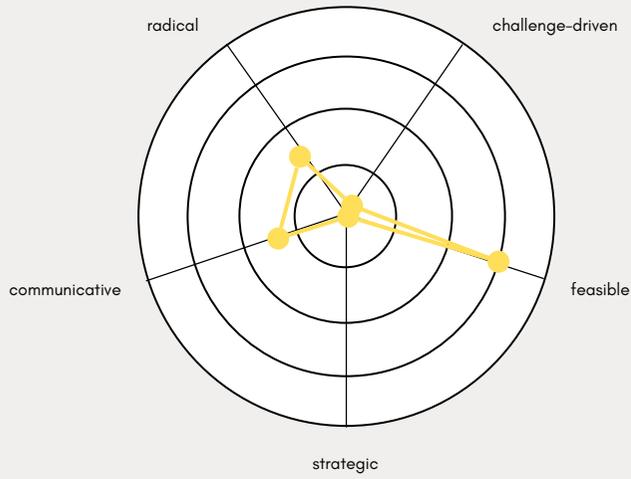
Communicative experiments reach and mobilize the broader public.

This characteristic involves experiments garnering media attention from the outside (e.g. media coverage) but also actively promoting itself and creating awareness about its program (e.g. outreach programs, promotion, flyers, social media).

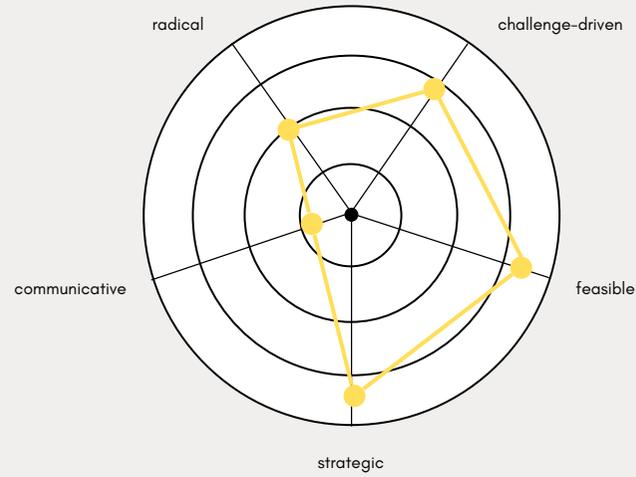
Communicative experiments further include a diverse group of stakeholders (e.g. residents, street users, policy-makers, experts) and create opportunities for increased interactions between stakeholders. Lastly, the physical aspect of the experiment draws visible attention. The highest scoring type was entire street re-purposing, despite the Westenriederstraße Summer Street and Via Milano scoring less high. The re-marking street typology and flexible closures scored low on this characteristic.



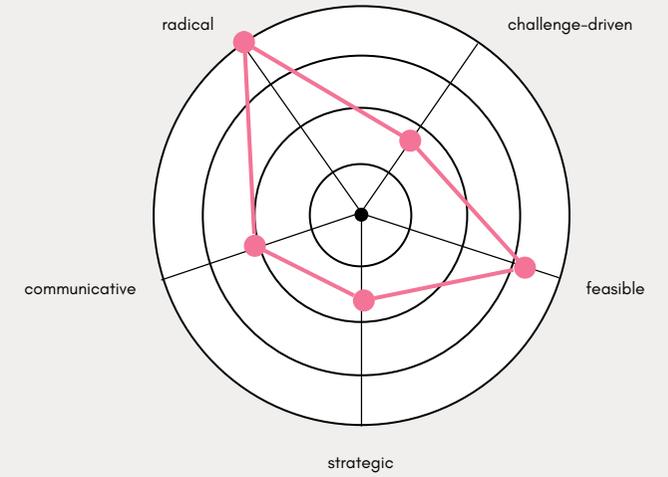
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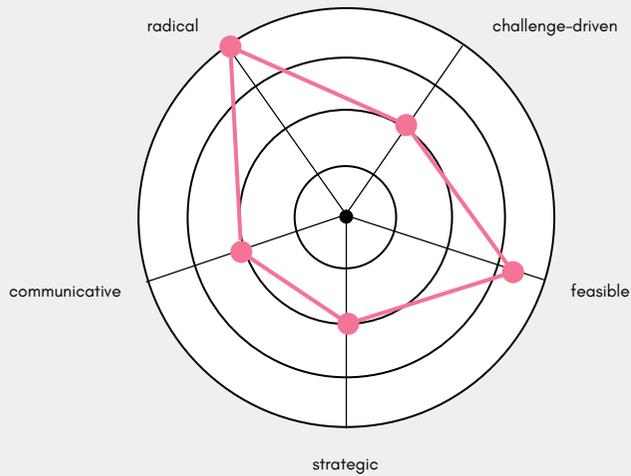
1 Shared Space,
Amsterdam
Transition score: 0.6



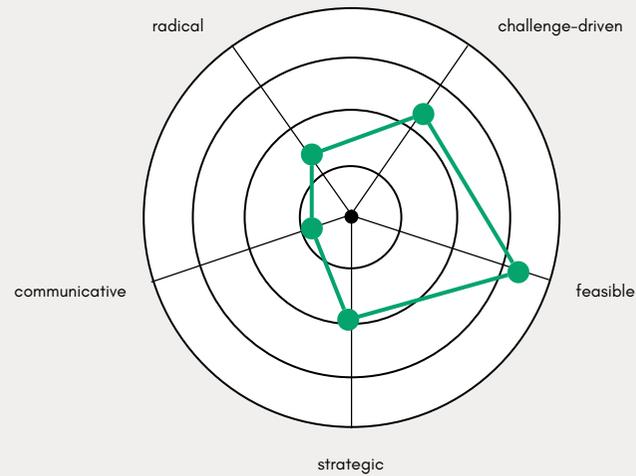
2 Sarphatistraat Zuid,
Amsterdam
Transition score: 1.3



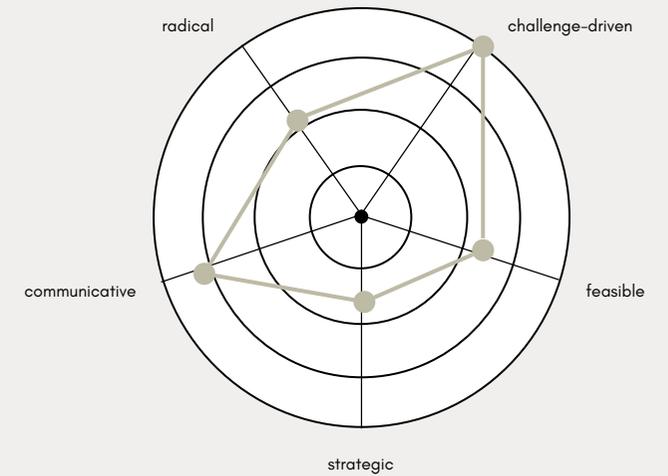
3 Umparken Schwabing,
Munich
Transition score: 1.3



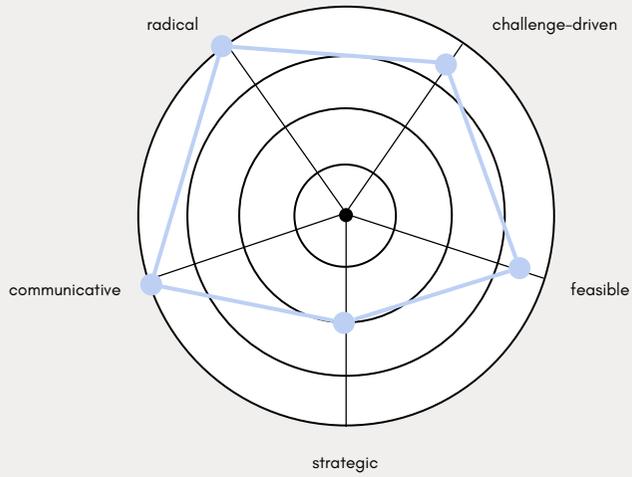
4 Piazza Zenetti,
Munich
Transition score: 1.7



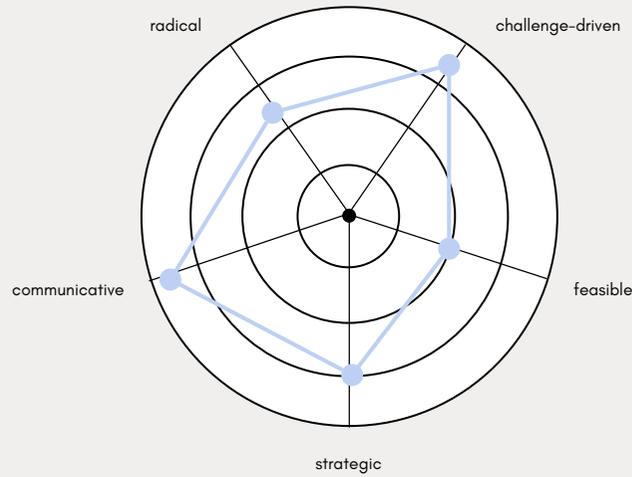
5 Van Gogh School Street,
London
Transition score: 0.9



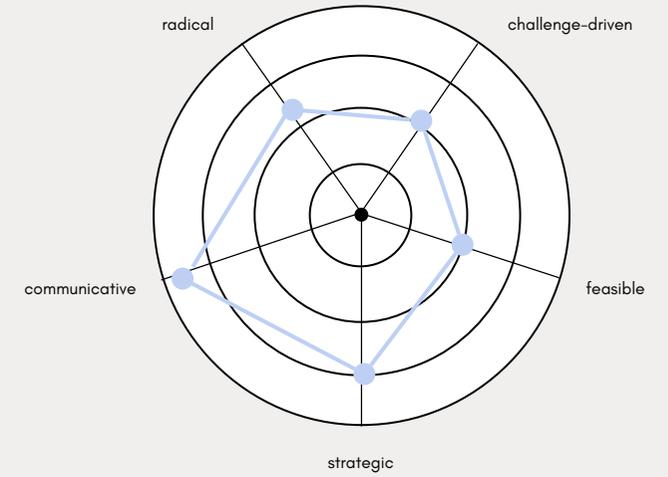
6 Piazzale Bacone,
Milan
Transition score: 1.3



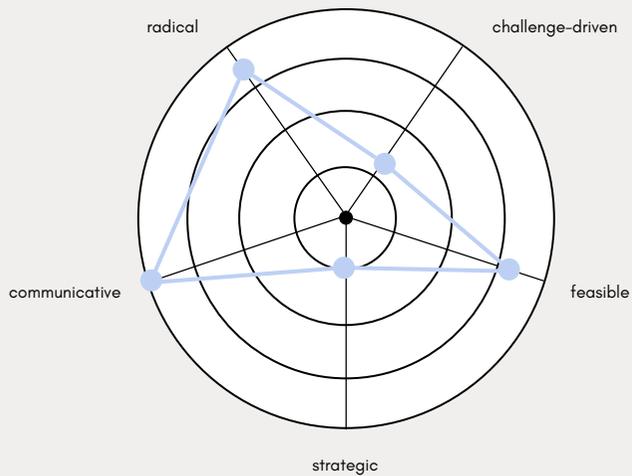
7 Wasstraat Living Street,
Ghent
Transition score: 1.8



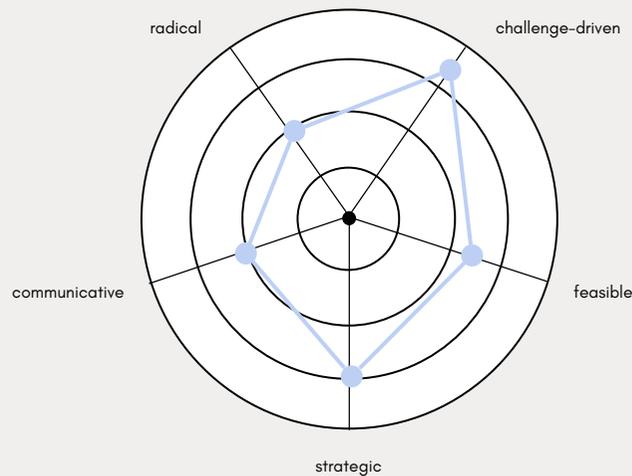
8 Via Milano,
Bologna
Transition score: 1.4



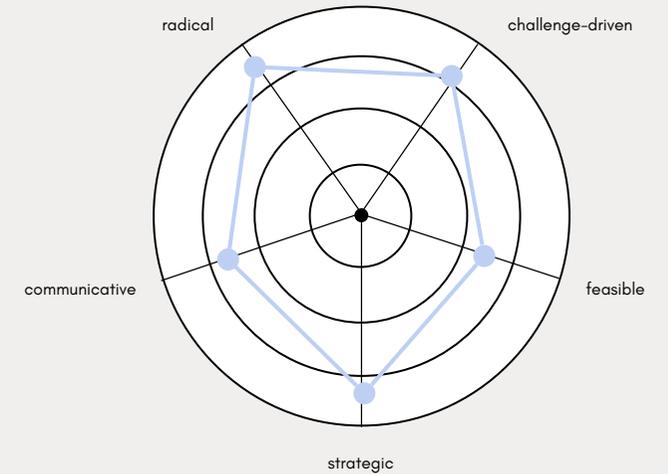
9 Weesperzijde Testbed,
Amsterdam
Transition score: 1.3



10 Hugo de Grootkade Living Street,
Amsterdam
Transition score: 1.3



11 Westenriederstraße Summer Street
Munich
Transition score: 1.4



12 PitStop,
Amersfoort
Transition score: 1.5

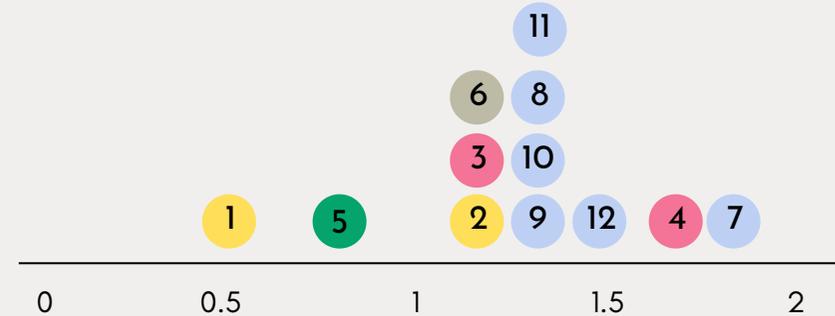
Analysis and conclusions

City street experiments are increasingly being implemented as ways to explore possible solutions to the challenges and tensions of contemporary urban mobility. This report explored the transitional capacity of five different typologies of street experiments. The comparative nature of the assessment framework revealed how the transitional capacity differs per typology, but also per experiment within each typology. Based on these results, the following conclusions can be made, which are potentially useful for city-makers interested in experimenting to cause system change in urban mobility.

- With the exception of the characteristic **feasible**, a large variety of scores is observed. **Re-making streets** are the **least radical** typology and along with **flexible closures** have the **lowest Transition Score**. On the other hand, these are some of the **most feasible** cases, contrary to the suggestion made by VanHoose et al. (2022) that there is a trade-off between the characteristics radical and feasible.
- The **entire street re-purposing** typology and **re-purposing parking** featured the **highest Transition Scores** of all of the typologies (average 1.5). Among the six examples of entire street closure, the Living Street Wasstraat was the highest scoring case with 1.8.
- **Feasible** is one of the highest scoring characteristics, even for the more complex typologies re-making entire streets.
- **Communicative** was **not as high as expected**, as based on the results of VanHoose et al. (2022).
- Contrary to the literature, **challenge-driven scored quite high**. The entire re-purposing projects scored relatively higher than the other typologies on this characteristic, with the exception of the two examples from Amsterdam, which could be related to a disconnect between local initiatives and connecting these to city-wide ambitions.
- Street experiments typically do not feature a strong presence of the characteristics **challenge-driven** and **strategic** (Bertolini, 2020). These two characteristics did not coincide to a specific typology. For instance, one example of re-marking streets (#1 Shared Space) scored extremely low while another example of the same typology and in the same city (#2 Sarphatistraat Zuid) scored extremely high. When present, they were specific elements that were thought about while organizing the experiment. The presence of these two characteristics therefore seem more related to the experiment design and **the result of the choice to use (or not use) the experiment (or not) as a component of a broader, longer term change strategy**.
- **Similar typologies are found in the same city**. This is most likely explained by the existence of a larger policy goals (e.g. Munich's new parking policy under the Mobility Strategy 2035)
- This assessment framework **does not consider the duration of the event**. For instance, one example of entire re-purposing, PitStop in Amersfoort, was a two day event, but had a relatively high Transition Score of 1.5. Does the duration of the event have influence on its ability to cause system change?

Transition Score

Average score: 1.3



1: Shared Space; 2: Sarphatistraat Zuid; 3: Upmarken Schwabing; 4: Piazza Zenetti; 5: Van Gogh School Street; 6: Piazzale Bacone; 7: Wasstraat; 8: Via Milano; 9: Weesperzijde Testbed; 10: Hugo de Grootkade; 11: Westenriederstraße Summer Street; 12: PitStop

According to this assessment framework which is grounded in theory on transition experiments and transition studies, **entire street re-purposing and re-purposing parking have the greatest potential impact**. Likewise, **re-marking streets have the least potential impact**. At the same time, there is a substantial difference between the two cases of re-purposing parking examined in this study. On this note, it is important to remember that this framework indicates a *potential* capacity, rather than an actual capacity. The impact of experiments is highly dependent on a number of factors, including context, duration, timing and specific choices made by the actors involved related to their long-term value. Overall, the analysis demonstrated the applicability and heuristic value of both the typology and the assessment framework, but also stressed the importance of refraining from too easy generalizations and always also focus on individual and contextual features.

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Appendix

Table 1: Transitional capacity rubric

		1	2	3	4	5	6	7	8	9	10	11	12
Characteristic	Indicators	Shared Space	Sarphatistraat Zuid	Umparken Schwabing	Piazza Zenetti	Van Gogh School Street	Piazzale Bacone	Wasstraat Living Street	Via Milano	Weesperzijde testbed	Hugo de Grootkade Living Street	Summer Streets	PitStop
Radical: The experiment fundamentally differs from dominant practices	The experiment is the first of its kind in its urban context	2	2	2	2	0	0	2	2	1	2	1	2
	The experiment activates the use of the streetscape as more than a channel for traffic (e.g. socializing, playing, exercising)	0	0	2	2	1	2	2	2	1	2	2	2
	The experiment includes a shift from motorized to non-motorized mobility	0	1	2	1	0	1	2	0	2	1	1	1
		1,3	0,7	1,0	2	1,7	0,3	1,0	2	1,3	1,3	1,7	1,3
Challenge-driven: The experiment makes a step toward a potentially long-term change pathway to address a societal challenge	The experiment aims to trigger a transition towards a post-car city	0	1	1	1	0	2	2	1	2	0	2	2
	The experiment is connected to existing policies or programs within the same city (e.g. car free city program in Munich)	0	2	0	1	2	2	1	2	1	1	2	2
	The experiment has the intention to become permanent	0	2	0	2	1	2	2	2	0	0	1	1
	The experiment has the ambition to scale up or be repeated (e.g. in other locations, or in more locations)	0	2	1	0	2	2	2	2	0	1	2	1
	The experiment is interdisciplinary in its ambition, combining objectives and goals (e.g. mobility, public space, social)	0	0	2	2	1	2	2	2	2	1	2	2
	1,3	0,0	1,4	0,8	1,2	1,2	2,0	1,8	1,8	1,0	0,6	1,8	1,6
Feasible: The experiment can be realized in the short-term and with readily available resources	Preparations for the experiment took no longer than six months	2	1	2	1	2	1	1	0	1	2	2	2
	Necessary resources for implementing the experiment were made available (0 = experiment took place but with insufficient support, 1 = bare necessities, 2 = ample resources)	2	2	2	2	1	1	2	1	1	2	2	1
	The experiment is well organized and coordinated (e.g. arranging of permits, street markings, signs)	2	2	1	2	1	1	2	2	0	1	2	1
	The experiment was able to garner support of residents, local business and other stakeholders	0	2	1	2	2	1	2	2	1	2	1	1
	The experiment arranged alternative transport (passenger and freight) and parking options	-	-	2	2	2	2	2	0	2	1	0	1
		1,5	1,5	1,8	1,6	1,8	1,6	1,2	1,8	1	1	1,6	1,4
Strategic: The experiment generate lessons for reaching envisioned fundamental changes	The experiment recognizes drivers and barriers in the transition towards a post-car city	0	1	1	2	2	1	2	1	2	0	2	1
	The experiment was monitored, assessed and/or evaluated	0	2	2	2	1	1	2	2	1	1	1	2
	The evaluation of the experiment is used as input for long-term policy development	0	2	0	1	1	0	0	1	1	0	1	2
	The experiment uses different forms of monitoring and assessing the experiment (e.g. qualitative (interviews; observation), quantitative (surveys, traffic patterns))	0	2	2	2	0	1	2	2	2	1	2	2
	1,2	0	1,8	1,25	1,8	1,0	0,8	1,5	1,5	1,5	0,5	1,5	1,8
Communicative: The experiment reaches and mobilizes the broader public	The experiment garners media attention from the outside (e.g. media coverage)	1	1	1	2	0	2,0	2	1,0	2	2	2	2
	The experiment garners momentum by promoting itself and creating awareness about its program (e.g. outreach programs, promotion, flyers, social media)	2	0	1	2	1	0	2	1	2	2	1	2
	The experiment includes a diverse group of stakeholders in its organization (e.g. residents, street users, policy-makers, experts)	0	0	1	2	1	2	2	1	2	2	0	1
	The experiment creates opportunities for increased interactions between stakeholders	0	0	1	2	0	2	2	1	2	2	1	1
	The physical aspect of the experiment draws visible attention	1	1	1	2	0	2	2	2	1	2	1	1
	1,2	0,8	0,4	1	2	0,4	1,6	2	1,2	1,8	2	1	1,4
Transition Experiment score		1,32	0,6	1,3	1,7	0,9	1,3	1,8	1,4	1,3	1,3	1,4	1,5