

Rethinking transport

27–30 April 2020



Proceedings of 8th Transport Research Arena TRA 2020, April 27-30, 2020, Helsinki, Finland

Transforming city neighbourhoods in a child-friendly way to increase the quality of life for all citizens

Wong, A.^{a[*]}, Apeldoorn, N. van^b, Wrighton, S.^c, Reiter, K.^c, Glock, J.P.^d, Dazzo, L.^d, Preston, J.M.^a

^a University of Southampton, University Road, Southampton, SO17 1BJ, United Kingdom

^b Breda University of Applied Sciences, Claudio Prinsenlaan 12, 4811 DK Breda, Netherlands

^c Forschungsgesellschaft Mobilität (FGM-AMOR), Schönaugasse 8a, 8010 Graz, Austria

^d Technische Universität Dresden, Hettnerstr. 1, Dresden 01069, Germany

Abstract

City planning has historically been largely top down, with a focus on economic development and association with motor car use, which has led to many problems in our cities. There is now growing appetite for change, with a move towards liveable neighbourhoods that also encourage active mobility, but the mechanisms for delivering this for the benefit of the wider population are still being investigated, and city planners and policy makers need further ideas and inspirations in order to achieve these objectives. This paper therefore uses the findings from the EU Horizon 2020 Metamorphosis Project to show how a bottom-up approach that engage children, as well as wider communities as a whole, can provide the inspirations for change, and improve the existing processes and schemes for increasing active travel in the cities highlighted, as well as enhancing the liveability of its streets and shared spaces for people, especially children.

Keywords: Child-friendly neighbourhoods; Future cities; Active mobility; Interventions in public space; Temporary street closures; Tactical urbanism

[Note: This document has 4 pages, not including the abstract, acknowledgement and references.]

* Corresponding author. Tel.: +44 (0) 2380-599576
E-mail address:a.wong@soton.ac.uk

1. Introduction

City planning has historically tended to adopt a top-down approach, where car accessibility and usage are often seen as a sign of economic prosperity, and therefore prevailing over other modes (Hiblin et al., 2016). This so-called Modernist approach to city planning has encouraged decades of growing car use (Gehl, 2013), leading to severe congestion problems in our cities, particularly at peak periods, along with concerns over poor road safety; and air quality problems near busy roads, as well as wider public health issues, as people have tended to walk and cycle less. Tied into this, facilities and infrastructure provision for active modes of travel are generally secondary to car use, which has not helped the social aversion to cycling in particular (Spotswood, 2015), which is still perceived as a dangerous activity when unsegregated from vehicle traffic. The infrastructure imposed for parking provision and to facilitate the flow of traffic instead of free movement of people and socialisations also has negative consequences in terms of social exclusion, including a restricted sense of territory, diminishing privacy, and a shrinking network of acquaintances and interactions (Preston and Rajé, 2007).

In recent years however, city politicians and policy makers, especially in Europe, have reacted to some of these concerns, and there has been a steady movement towards more 'liveable' cities, that encourage healthy and sustainable urban mobility, without high levels of car dependency. This has led to the use of city performance indicators that measure 'quality of life', with cities such as Vienna, Melbourne and Copenhagen cited as model examples (Giap et al., 2014). However, the techniques available for reducing car use at a grassroots level and bringing about changes towards more liveable cities are still to be understood, and the extent to which these can influence a change in the wider population towards more sustainable mobility requires further investigation. This paper therefore looks at the work and early findings from 'Metamorphosis', an EU Horizon 2020 research and innovation project that seeks to develop more liveable and sustainable city neighbourhoods, which focus on engaging people and sustainable travel rather than centred around cars, through the empowerment of children.

2. Purpose and approach to Metamorphosis

Metamorphosis aims to create more 'child-friendly neighbourhoods', by transforming streets and public places in seven cities in Europe away from being car-oriented places, through a focus on the needs and engagement of children, to improve physical and mental health, and make city neighbourhoods more vibrant, inclusive, accessible, safer and less polluted for everyone - for example see Figure 1. The transformations are enabled through the premise that when an urban neighbourhood has many children in its public spaces, this is a major indicator that it is well designed as a people-oriented and sustainable neighbourhood (Gehl, 2013).

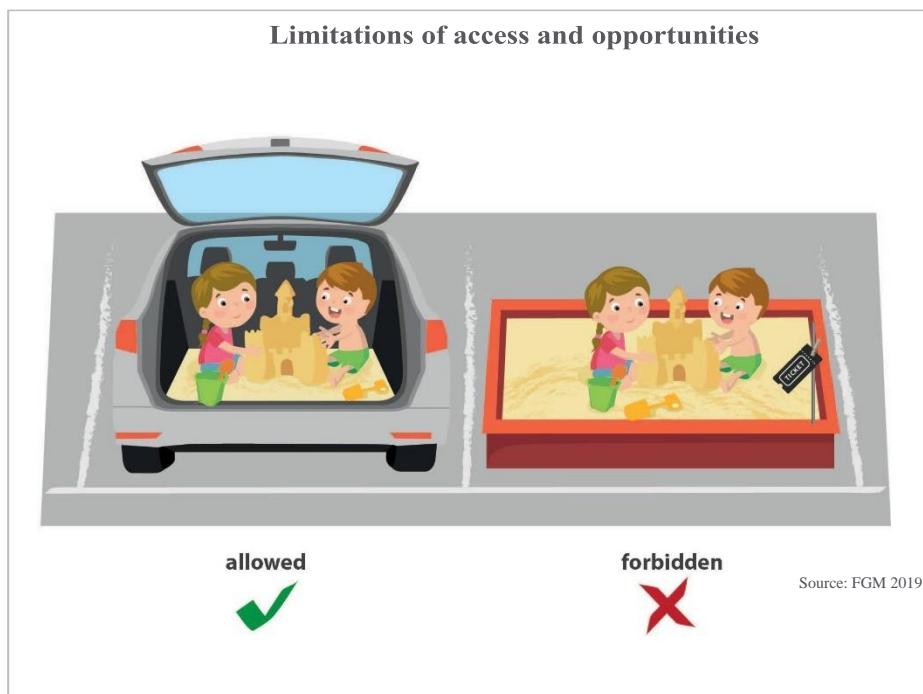


Fig. 1: Public space must be open and accessible to everyone, especially children, and not encourage car use (as shown)

2.1. Objectives

To achieve its aim, Metamorphosis has seven objectives:

1. Transform car-oriented neighbourhoods into children-friendly neighbourhoods achieving behavioural change and increase in the quality of life;
2. Build the vision needed for such transformations - involving end-users, including children, and stakeholders;
3. Answer some basic research questions related to neighbourhood transformation regarding catalysts for integration, the connection between neighbourhoodness and engaging in neighbourhood activities and how to engage with difficult to reach target groups;
4. Achieve creative breakthrough innovations – in development, in design, in governance and in planning procedures - for streets, squares and other public spaces in neighbourhoods and urban districts by involving end users;
5. Develop and implement children friendly mobility solutions (e.g. pedestrianisation, better and more equitable shared public spaces, street design elements, child-oriented ‘Share Points’);
6. Evaluate take up, involvement, process and impacts using innovative evaluation methodologies;
7. Develop and implement innovative transfer instruments to transfer Metamorphosis-innovations from city to city and country to country, also beyond the duration of the project.

The seven partner cities were selected to represent a wide variety of demographic and location characteristics, and each works with an academic or enterprise partner to take the lead for a different strand of the project. The cities are (1) Alba Iulia, Romania; (2) Graz, Austria; (3) Meran, Italy; (4) Munich, Germany; (5) Southampton, UK; (6) Tilburg, Netherlands; and (7) Zurich, Switzerland. The partner cities have each implemented a series of intervention trials to encourage the development of child friendly neighbourhoods, to exploit innovative ideas, as well as demonstrate what could be achieved. These trials expand on and create new concepts of shared space, play streets, living laboratories, ‘crystallisation points’, and other interventions in public spaces that reduced the exposure of children to vehicles and traffic, and provide community attractions and activities that promote walking, cycling and sustainable mobility, instead of a reliance on motor vehicle use.

2.2. Empowerment of children

The project introduces innovative approaches to local urban design that engages both children and adults as authentic stakeholders and participants in the development and ‘build’ process of their local neighbourhoods, including the implementation of specific intervention trials. Children play a pivotal role in Metamorphosis, and are involved in every stage of the project, including design, implementation, as well as monitoring and evaluating the trials. They also act as ambassadors, and the driving forces, translators, facilitators and encouragers of actions, who have shared their visions of how future cities should look like, and how neighbourhoods should be designed to fulfil their needs. An important component of the Metamorphosis project is therefore the activation strategies involving children, as they can help to develop positive emotions for their neighbourhood. As their behaviour and decisions are mostly determined by emotions, and to a much lesser degree by rational arguments such as cost versus benefit, they are typically unhindered by traditional barriers, and can easily find a way to influence their parents; and to be against children’s needs and demands is generally not well-accepted by society. These factors help to support, as well as direct, the behaviour changes that are required by everyone in order to develop child-friendly neighbourhoods.

2.3. Vision Building Workshops

The empowerment of children is achieved initially through ‘vision building’ workshops, where children are asked to qualify the attributes of places and facilities in terms of their attractiveness to them, and build on characteristics and activities which had previously been suggested by the project partners. For example, a key word list could be drawn up around the four core themes that summarise the nature of child-friendly neighbourhoods (Metamorphosis Consortium, 2017), including ‘Protection’, ‘Comfort’, ‘Opportunity’ and ‘Enjoyment’, and within each theme, some of the key qualities that children and adults desire or that need to be addressed could be suggested, for example see Table 1, which can then be developed further through active contributions from children and parents through the workshops.

Having determined the qualities that are important, ‘co-design’ workshops were then conducted with children and adults, and including local residents, to evaluate potential measures which could be implemented as part of the

Metamorphosis trials, as well as provide opportunities for further measures to be suggested.

Table 1 Key words driven neighbourhood design (Source: adapted from Gehl, 2013)

Protection	Comfort	Opportunity	Enjoyment
<p><i>1. Protection against traffic & accidents:</i></p> <ul style="list-style-type: none"> - fear of traffic; - risk of traffic accidents; - risk of other accidents, e.g. walking vs cycling 	<p><i>4. Possibilities for walking and cycling:</i></p> <ul style="list-style-type: none"> - room for walking & cycling, with no obstacles, and good surfaces; - un-tiering layout of street / no segregation of pedestrians, cyclists & other users; - interesting facades 	<p><i>7. Possibilities to see:</i></p> <ul style="list-style-type: none"> - interesting and unhindered views; - seeing distances; - lighting (when dark) 	<p><i>10. Positive aspects of climate:</i></p> <ul style="list-style-type: none"> - sun / shade; - warm / cool; - breeze / ventilation
<p><i>2. Protection against crime & violence:</i></p> <ul style="list-style-type: none"> - lived in / busy / used - street life - street watchers; - overlapping functions in time & space, e.g. not quiet in the evenings 	<p><i>5. Possibilities for standing / staying:</i></p> <ul style="list-style-type: none"> - defined spots for staying; - attractive surroundings & edges; - supports for staying, e.g. not part of thoroughfare, and paving not hard on heels 	<p><i>8. Possibilities to hear / talk:</i></p> <ul style="list-style-type: none"> - low noise levels; - design of 'talkscapes', e.g. rotating benches so people can face each other 	<p><i>11. Scale:</i></p> <ul style="list-style-type: none"> - dimensions of buildings & space in proportion and stimulates children's perceptions, senses, movements, size & behaviour
<p><i>3. Protection against unpleasant sense experiences:</i></p> <ul style="list-style-type: none"> - cold / heat; - rain / snow; - wind / draft; - pollution; - dust, glare, noise 	<p><i>6. Possibilities for sitting:</i></p> <ul style="list-style-type: none"> - marked zones for sitting; - primary & secondary sitting opportunities; - benches for resting 	<p><i>9. Possibilities for play / activities:</i></p> <ul style="list-style-type: none"> - physical activities; - seasonal entertainment; - amenities 	<p><i>12. Aesthetic / positive sense & experience:</i></p> <ul style="list-style-type: none"> - good design & detail; - views / vistas; - trees, plants, fauna, water features

3. Results

To date, the project consortium partners have completed 50 different intervention measures, including 366 sub-measures, i.e. repetition of the measures but in a different location for example, or variations on the same theme, although some trials are still in the implementation phase. 103 of the measures/sub-measures were associated with interventions in public space (including 9 hybrid zones, 6 'living labs', and 70 other interventions), 33 were related to street closures and school streets, 212 were workshops empowering people in active mobility, although not all involved children, 7 were social crystallisation points, and 11 involved providing educational innovation tools. See Figure 2 for examples that include street closures, street art, parklets (mini-gardens with seating, for example), temporary crossings and games. [Further details of the measures and activities which have been implemented will be given in the full paper.]

The initial results from the different measures suggest that the inclusion of children in the street design/neighbourhood development process is very important in gaining acceptance and producing designs that the community can engage in, which in turn results in growing appetite by local communities to develop child-friendly neighbourhoods. Such neighbourhoods also benefit from a higher proportion of active travel locally, in particular to/from schools, as well as improvements to local air quality as a result of reduced car use, and reported higher levels of physical well-being. They also show a number of lessons can be learnt from developing child-friendly neighbourhoods, including:

- The encouragement of active travel on its own is unlikely to deliver longer-term behaviour change towards walking and cycling in the wider population. People have to be given more reasons for using public spaces, in order for them to be attracted to walk and cycle in the local neighbourhood more. This can be achieved through local residential street closures or the development of crystallisation points, which encourage people (including children) to talk, socialise, develop local community spirit, or simply to play and enjoy their new-found public spaces.

- Local authorities often work in conjunction with contracted-out third party operators for traffic management and operations. However, these operators may not be familiar with local city neighbourhoods, and therefore have a tendency to resist changes to existing practices such as temporary street closures, for fear of upsetting local people, and particularly motorists. It is therefore important to engage them (as well as the local community) in understanding the principles behind child-friendly neighbourhood transformations, so they also see the wider benefit of developing attractive and sustainable communities, i.e. it results in more satisfied local people, and in particular benefits children. In some cases, this has also helped to join up the urban design and sustainable transport planning teams in some city partners, which has resulted in creative breakthroughs to simplify and re-design local governance and city planning procedures, that better enable the implementation of child-friendly neighbourhood measures and activities for people, such as regular street closures and wider use of public spaces.
- City officials and municipal policy makers have found it very useful to obtain feedback directly from children, for example that areas where they can play need to be developed close to where they live, as opposed to being provided in separate designated playgrounds that are further away.



Fig. 2 Example measures and activities implemented to create child-friendly neighbourhoods

4. Conclusions

This paper (the full version) provides evidence from the Metamorphosis project on how a bottom-up approach engaging children and local communities can complement and improve on existing, largely top-down city planning processes aimed at improving sustainable urban mobility and the liveability of city streets and shared spaces for people. In particular, the engagement of children requires different techniques to traditional adult focus groups and surveys in order to be effective, and the feedback obtained through co-design workshops (and from implementation measures) involving children can be novel and revealing for city planners and policy makers, as children's voices are rarely heard, and some of their feedback can also be surprising, as well as providing encouragement and inspiration for local policy makers and communities to change.

Acknowledgements

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 723375. We are grateful to all the partners of the EU Metamorphosis Consortium for their contributions to this project, and to the European Commission for their support and funding. This paper represents the views of the Metamorphosis Consortium only, and does not necessarily represent the views or opinions of the European Commission and other organisations.

References

Gehl, J., 2013. Cities for people. Island Press, 2013.

Giap, T. K., Thye, W. W., & Aw, G. (2014). A new approach to measuring the liveability of cities: the Global Liveable Cities Index. *World Review of Science, Technology and Sustainable Development*, 11(2), 176-196.

Hiblin, B., Taylor, I., & Sloman, L., 2016. What Works? Learning from the Local Sustainable Transport Fund 2011-2015. Report to the UK Department for Transport.

Metamorphosis Consortium, 2017. General Analysis Report: Transformation of neighbourhoods in a child-friendly way to increase the quality of life for all citizens. EU Horizon 2020 Report. Available online: http://www.metamorphosis-project.eu/sites/default/files/downloads/Metamorphosis_D2.1_v1.1.pdf

Preston, J., & Rajé, F. (2007). Accessibility, mobility and transport-related social exclusion. *Journal of Transport Geography*, 15(3), 151-160.

Spotswood, F., Chatterton, T., Tapp, A., & Williams, D. (2015). Analysing cycling as a social practice: An empirical grounding for behaviour change. *Transportation Research Part F: Traffic Psychology and Behaviour*, 29, 22-33.