



THE CITY AS LABORATORY. ACADEMICS, STUDENTS, AND POLICY MAKERS ADDRESS URBAN ENVIRONMENTAL CHALLENGES TOGETHER

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the Program 'Stad als Lab' (i.e., 'City as Laboratory') as a framework for enhanced cooperation. Our department of Social, Economic and Organisational Psychology, a forerunner in this cooperation, established an agreement with the municipality, made official in a Memorandum of Understanding (see Pictures 1-2).

The Memorandum of Understanding enables students at our department to engage in bachelor or master thesis projects dealing with concrete and current issues at the municipality. For our department and our students, this creates a research environment which is both interesting and relevant. Importantly, it provides the opportunity to conduct research with impact that has direct relevance for society. This collaboration already resulted in four applied research projects, and a fifth will start in 2021. These projects are described in more detail below and hopefully will inspire other researchers and municipalities to start similar collaborations.

LITTERING IN PARKS

Reducing littering in parks is a challenge many municipalities are faced with. Intended to improve efficiency, the municipality of Leiden came up with a new approach to waste collection in parks: To remove all existing trash cans from within the parks, to concentrate waste collection in large containers at the exits only, along the surrounding street. In that way, waste trucks could easily access and empty the containers. The municipality based this idea on several similar initiatives around the world, including 'leave no trace' campaigns in larger National

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Municipalities are often faced with challenges in which human behaviour plays a key role. For example, how do you stimulate residents to get involved in the energy transition, green their gardens, or refrain from littering? At the same time, psychological researchers are increasingly looking for opportunities to utilise their knowledge of human behaviour to find solutions for such societal challenges. In March 2019, the municipality of Leiden and Leiden University initiated



Picture 1: Official start of the Memorandum of Understanding (picture taken by Auke Florian Hiemstra).



Picture 2: The Memorandum of Understanding.

because of greater care inspired by the perception of natural beauty. We found that removing the trash cans without further communication led to increased littering; but when adding an intervention with watching animal eyes (see Pictures 3-4; Bateson et al., 2006; Conty et al., 2016), a modest decrease in littering was observed. Hence, we recommend that practical interventions such as relocating trash cans are complemented by some psychological nudging.

DISCONNECTING FROM THE GAS GRID

The Dutch government aims to stop extracting natural gas in 2030 and to disconnect all households from the gas grid by 2050, in order to meet current climate change agreements and to put an end to earthquakes in the North of the Netherlands. This can be seen as a historical challenge, as gas is still the main heating source in Dutch households. Dutch municipalities cannot merely rely on these political decisions for achieving this goal, their residents have to change their behaviour as well. Therefore, together with four Master students, we examined what hinders and what motivates people to disconnect from the gas grid. More specifically, we

were interested whether aspects such as awareness of consequences and ascription of responsibility, social norms, personal norms, values, and rewards (cf. Smith et al., 2012; Steg et al., 2005; 2012) could influence people's perceptions (attitudes, support, intentions) towards getting disconnected from the gas grid.

The responses were collected by means of an online survey, which was distributed via the Leiden Panel, consisting of 500 residents of Leiden who volunteered to participate in research by the municipality of Leiden. In addition, an invitation was posted on the municipality's Facebook page and digital newsletter. The data is currently being analysed and we aim to provide the municipality with concrete recommendations on how and when to communicate with residents about disconnecting from the gas grid.

GREENING GARDENS

Another challenge related to climate change is how we can best adapt to climate change consequences. In order to limit the damage that can be caused by climate change and to take advantage of the opportunities that climate change offers, citizens will have to be actively involved. For example, placing more plants in the garden

Parks in the U.S. However, success with regards to littering were mixed in such projects, or not formally measured.

This is where we stepped in. Together with 13 Bachelor and Master students we ran three consecutive field studies, targeting two different parks in Leiden. Results could go either way: More littering because of the greater distance to trash cans, or less littering



Pictures 3 - 4: Watching animal eyes were attached to trees throughout the park (pictures taken by Milada Speet).

has many advantages for (among other things) biodiversity, rainwater collection, CO₂ reduction, and heat stress reduction. Yet many people seem to prefer a concrete surface with tiles over a green surface with plants. What is stopping people from greening their garden and what could tempt people to do so? In other words, what are their (e.g., social or economic) motives?

In collaboration with the municipality of Leiden, we aim to investigate how we can make it easier and more attractive for people to actively contribute to climate adaptation by greening their garden. Specifically, in the first two studies that we started together with seven Master students, we aim to get a clearer picture of people's considerations when it comes to the design of their garden and the percentage of green vs. soil sealing in this design. In addition, we are interested in whether there is a difference between people's ideal and actual garden greenness, and if a discrepancy between a garden's function and greenness (i.e., goal conflict; Boudreaux & Ozer, 2013) could stop people from greening their garden.

YOUTH PARTICIPATION

In solving all these different issues, municipalities are trying to reach out

to young residents to motivate them to help and contribute to the community. After all, the future belongs to the young people of today. Yet, individuals who are involved in the non-profit community organizations tasked to contribute positively to the municipality are usually middle aged to older individuals. The municipality of Leiden asked us to address this issue and find ways to increase the voluntary involvement of youngsters in the community.

Accordingly, we started a master thesis project together with four Master students, in which we adopted a Person-Organization Fit approach (Piasentin & Chapman, 2007). Our series of studies showed that young individuals consider voluntary participation in local community non-profit organizations attractive when they perceive similarity between themselves and the members of the organization (e.g., shared values) and feel that they have unique value for (i.e., complement) the organization. Hence, it is recommended to the municipalities in need for more youth participation to communicate to prospective young volunteers that they are similar to, and not much different from, the current volunteers already doing work for the local non-profit organization(s), and can make a positive difference for the

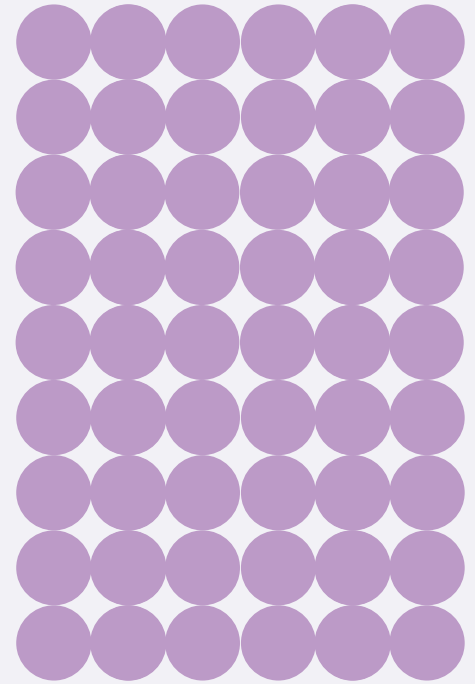
non-profit organization (and thus the municipality).

CITY PARKS

Besides an interest in changing human behaviour, the municipality of Leiden is also interested in how urban interventions are perceived by its residents. One such example concerns the Singelpark, a fragmented park along the canal encircling the historic city centre. In order to make the city more resilient, the municipality of Leiden aims to fully connect the Singelpark, by planting more trees and plants (see Picture 5) and building six bridges (see Pictures 6-7), making it possible for people to walk around the medieval city through a park of more than six km in length (see Picture 8). It is of interest to see how these changes in landscape design might affect different psychological aspects, such as the restorativeness, appreciation, and perceived climate adaptation of the park. This is the aim of a master thesis project of students that we will set up and supervise in 2021 together with the municipality. Previous research by Henk Staats and four Master students on the Singelpark in its original state offers an excellent opportunity to compare the impact of a fully connected park to a more fragmented park.



Picture 5: Trees are being planted in the Singelpark by voluntary participation of residents (picture taken by Yu Hua Yeh).

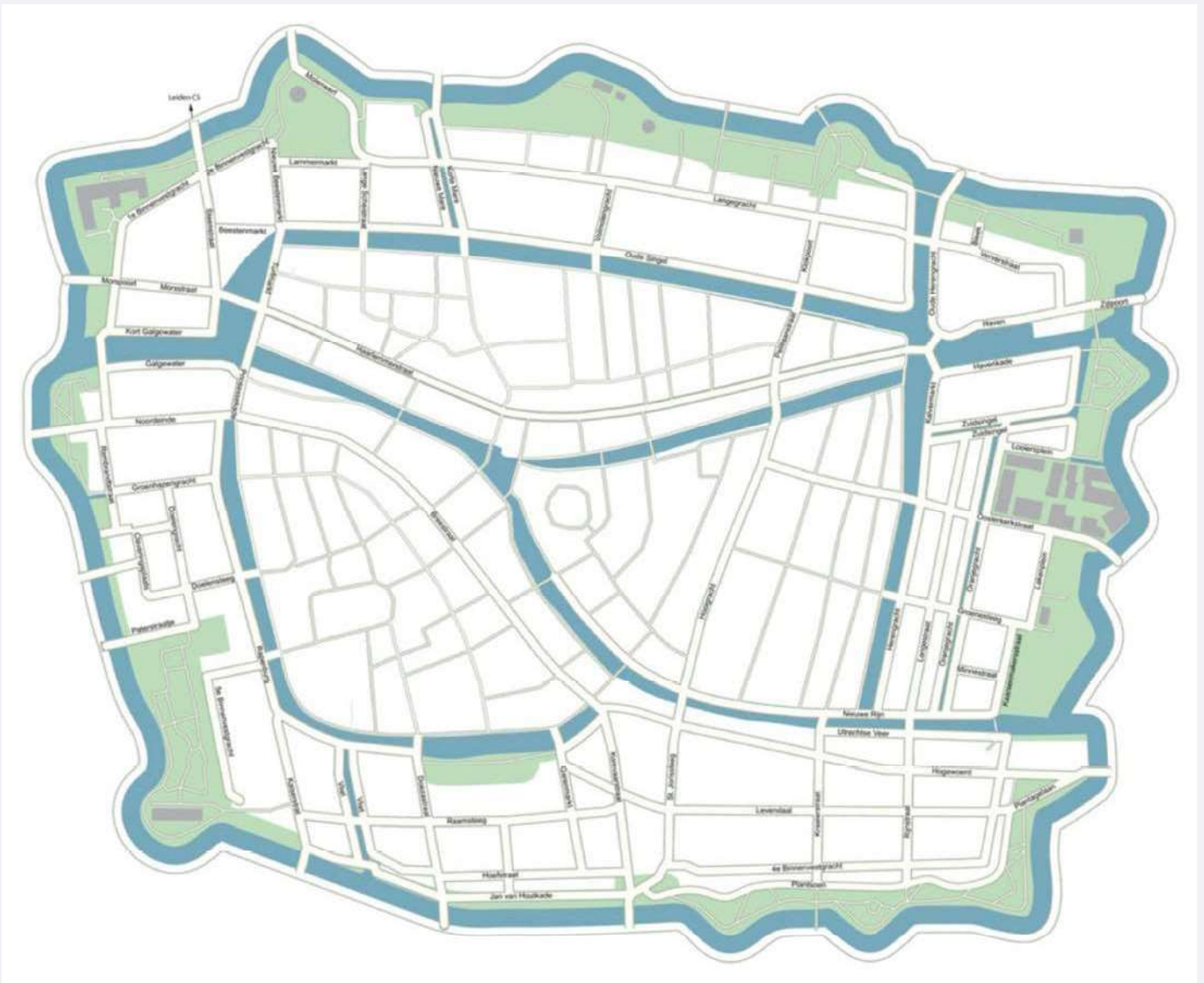


GREAT POTENTIAL

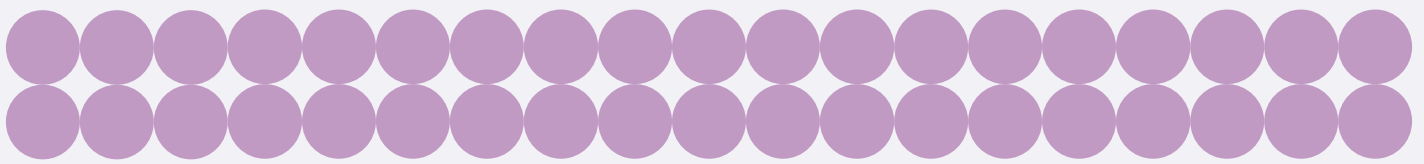
The collaboration between the municipality of Leiden and our department of Social, Economic and Organisational Psychology yields aspiring and diverse research projects. These projects range from very specific questions that require a direct answer (e.g., littering in parks), to broader questions over longer time periods (e.g., disconnecting from the gas grid, greening gardens). Each project also asks for different approaches during different phases, from field studies to online surveys, interviews, and experimental interventions. As such, these projects really challenge students to bridge the gap between research and practice, and simultaneously provide them with a great opportunity to be involved in addressing societally relevant issues. Furthermore, the majority of these issues asks for an interdisciplinary perspective, which encourages further collaboration with researchers from Environmental Sciences and Ecology. But most importantly, all projects can generate highly valuable practical insights for the municipality of Leiden, ensuring that policies tackling environmental issues are built on scientific foundation using input from the residents of Leiden themselves.



Pictures 6 - 7: Newly placed bridge for the Singelpark: Aeldisbrug by Dura Vermeer.



Picture 8: The Singelpark (received from Vrienden van het Singelpark). A ring of connected parks around the medieval center of Leiden.



References

- Bateson, M., Nettle, D., & Roberts, G. (2006). Cues of being watched enhance cooperation in a real-world setting. *Biology Letters*, 2, 412-414. <https://doi.org/10.1098/rsbl.2006.0509>
- Boudreaux, J. M., & Ozer, D. (2013). Goal conflict, goal striving and psychological well-being. *Motivation and Emotion*, 37, 433-443. <https://doi.org/10.1007/s11031-012-9333-2>
- Conty, L., George, N., & Hietanen, J. K. (2016). Watching eyes effects: When others meet the self. In *Consciousness and Cognition* (Vol. 45, pp. 184-197). Academic Press Inc. <https://doi.org/10.1016/j.concog.2016.08.016>
- Piasentin, K. A., & Chapman, D. S. (2007). Perceived similarity and complementarity as predictors of subjective person-organization fit. *Journal of Occupational and Organizational Psychology*, 80, 341-354. <https://doi.org/10.1348/096317906X115453>
- Smith, J. R., Louis, W. R., Terry, D. J., Greenaway, K. H., Clarke, M. R., & Cheng, X. (2012). Congruent or conflicted? The impact of injunctive and descriptive norms on environmental intentions. *Journal of Environmental Psychology*, 32, 353-361. <https://doi.org/10.1016/j.jenvp.2012.06.001>
- Steg, L., Dreijerink, L., & Abrahamse, W. (2005). Factors influencing the acceptability of energy policies: A test of VBN theory. *Journal of Environmental Psychology*, 25, 415-425. <https://doi.org/10.1016/j.jenvp.2005.08.003>
- Steg, L., Perlaviciute, G., Van der Werff, E., & Lurvink, J. (2012). The significance of hedonic values for environmentally relevant attitudes, preferences, and actions. *Environment and Behavior*, 46, 163-192. <https://doi.org/10.1177/0013916512454730>