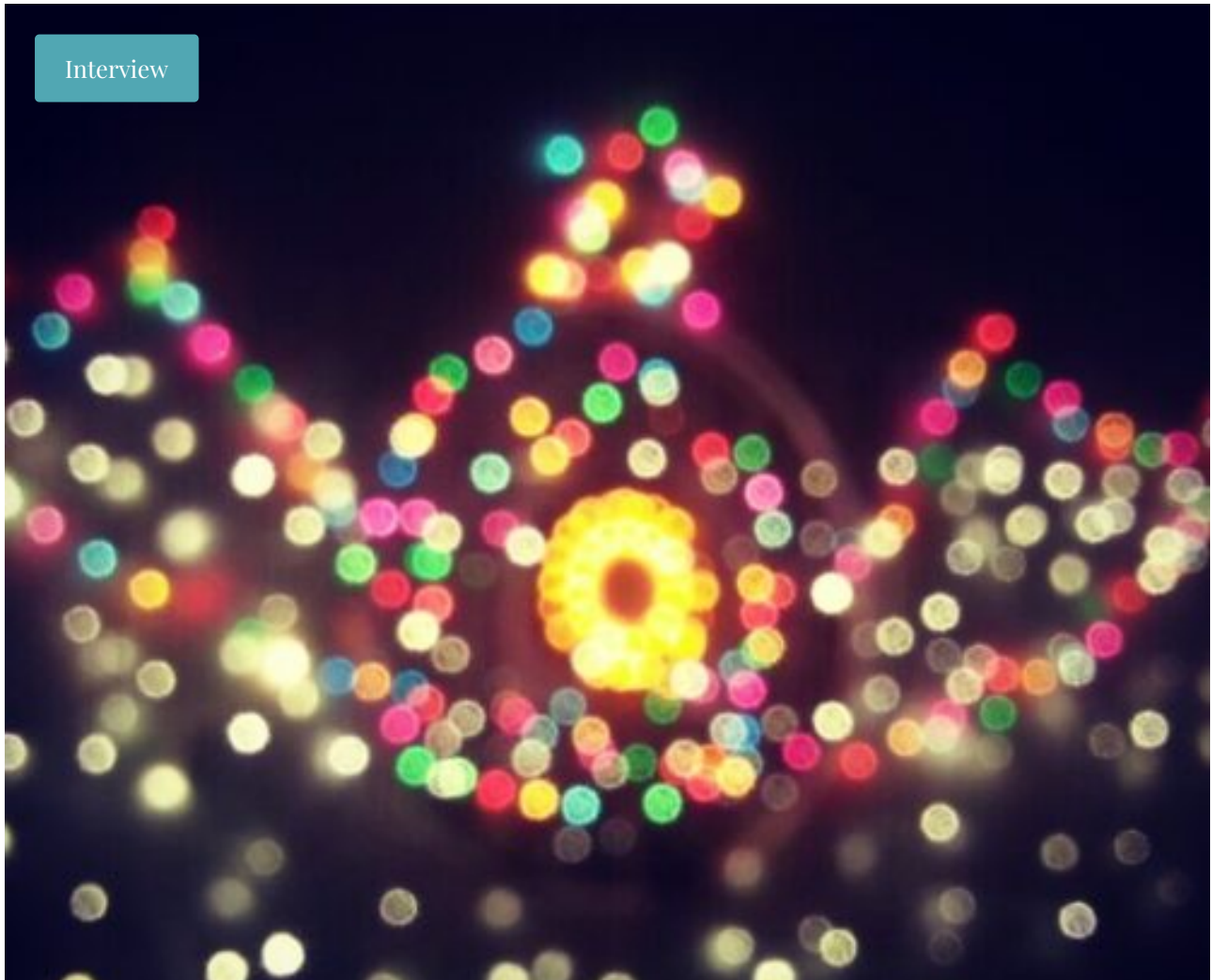


Interview



Nuancing the binary of light and darkness- Exploring environmental psychology perspectives on the governance of light

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Throughout the return to Malmö in June 2025, Friederike Landau-Donnelly (FLD) interviewed Anna Litsmark (AL) and Georgios Tsiakiris (GT). Anna and Georgios are both PhD candidates at the Department of Architecture and Built Environment, LTH Faculty of Science, Lund University. The following text presents an edited version of the interview transcript.

FLD:

My name is Georgios Tsiakiris. I'm a PhD student in environmental psychology in my final, fourth year. It has been an interdisciplinary journey as a psychologist, being introduced to environmental psychology. From my master's degree onwards, which I conducted at Umeå University in northern Sweden, I saw that different disciplines were working together in the realm of environmental psychology in a non-conventional and genuinely interdisciplinary way. Now, I work on an interdisciplinary project with Swedish and other Nordic universities, called NorDark: **Unconventional methods to inform sustainable design: Mediating the needs of people and nature in Nordic after-dark environments.** Our consortium includes light designers, ecologists, and other disciplines. We are working in Sweden and Norway to examine how an **urban forest path** can be used by people when lit with electric lighting. On the one hand, light has to cover the needs of people, but on the other, light needs to use less energy, produce less glare, and result in less light pollution. We categorize urban forests as semi-rural areas that require less light than a typical urban area in a city center. Depending on local criteria, we calculate how much light people may need in order to move in those areas.

We collaborate across work packages and share information, gathering real-life data and analyzing how participants experience the urban forest path. We are also trying to see how much we can feed into a **digital representation of an urban forest** ("digital twin") with our data. For example, we feed different light solutions and appraisals of participants into the software. For future research, we aim to produce synthetic insights that enable users to check parameters for feasible light solutions and greenery densities in different local contexts.

We also use **head torches** as the only source of light in urban forests. You give people the means to experience light and darkness, thus stimulating the field by bringing in a source of light. Hence, participants have a different experience of the place, with alternate light solutions. You don't have to have light poles everywhere. With your head torch, you provide light to your path yourself whilst moving your body. In addition, you might have sources of lighting at different height levels – these are less obvious approaches to govern light, if you will, taking animals and other species into consideration.

AL:

My name is Anna Litsmark, and I am also a PhD student in environmental psychology in my final year. My project, which is funded by the Swedish Energy Agency, has the overall title **A child's perspective on outdoor lighting for neighborhood walk and cycle paths.** The overall project aim is to deepen the knowledge about children's independent mobility during dark hours and to explore the role of outdoor lighting in supporting it from the

perspective of children and their parents. Surprisingly, we know very little about how children perceive and experience outdoor lighting and how lighting conditions can support or hinder children from being outdoors without an adult when it is dark.

Since we are situated in a country at high latitude, the autumn and winter season brings limited hours of daylight. With regard to children's independent mobility, this means that during that period of the year, it is dark in the morning when the children are going to school, but also in the early afternoon when they are going home from school and have time for leisure activities. For example, in some places in Sweden, the sun rises around 10 o'clock in December and sets again around 1 o'clock. What does that mean for children's possibilities to walk or cycle independently to school or for spending time outdoors after school or during weekends? In this case, it is not about children being outdoors late in the evening, which, by adults, can be viewed as problematic, but rather to investigate how outdoor lighting can support children to be outdoors, being physically active, exploring, and playing in their local outdoor environments in daytime.

FLD:

Could you briefly explain the perspective of **environmental psychology research on light** to a layperson? What insights does it generate? What can it "know," or not?

AL:

In my project, I worked with children between 10–13 years old, and their parents, from three mid-sized cities at different latitudes in Sweden – Luleå, Örebro, and Halmstad. In these cities, together with municipal stakeholders, we made a selection of neighborhoods where we expected children to have high independent mobility during the daytime. The neighborhoods also portrayed similar living conditions for the children regarding the degree of urbanization, access to amenities such as schools, playgrounds, and green spaces, and socio-economic status of the area. We were interested in areas where we believed children had good opportunities for independent mobility to capture children's experiences of outdoor lighting during dark hours. Of course, it is important to study the possibilities for children's independent mobility during dark hours and children's experiences and perception of outdoor lighting in other samples and contexts. This project aims to provide a starting point for deepening the understanding of children's needs during dark hours, to be further investigated in other settings.

Since parents are the ones who give children the license to be outdoors, it is interesting to capture the parents' perspectives, too. It is like a negotiation between parents and children. Maybe the child wants to go to school alone even when it is dark, but the parent is worried about the child's safety. I am interested in understanding similarities and differences between children's and parents' needs and experiences of darkness and outdoor lighting.

In the project, we are using a mixed methods approach. First, we conducted a scoping review to identify and map the existing research on children's independent mobility during dark hours and the role of outdoor lighting. Then, we conducted a questionnaire

study among the children and their parents to understand what their independent mobility looks like in daylight, and compare it to dark hours, asking questions about their local experiences and perceptions about outdoor lighting. Third, we did walking interviews with a sub-sample of children and parents in the three cities, walking in their neighborhoods when it was dark. We stopped at specific spots and discussed their experiences of these places, specifically in relation to lighting conditions. In the last step, we will arrange workshops together with different stakeholders, such as lighting designers and municipal urban planners, to develop preliminary criteria for children's perspectives on outdoor lighting.

In environmental psychology, our focus is on understanding the **individual perspective**, which in my case is the child. But we also want to understand the environment that people are assessing and are therefore using different methods and tools. We have used both observer-based environmental assessments, such as questionnaires and walking interviews, and technical environmental assessments, such as measuring the level of illuminance and spectral power distribution (SPD). Simply put, SPD describes how the light's power is distributed across different wavelengths, which can be visualized as a spectrum and used to determine the perceived color output. Combining these two assessment approaches ideally complements better understanding of individual perceptions of a specific environment or specific attributes of the environment.

FLD:

I think it is really important to **include children's perspectives in planning processes**. When we are talking about participatory and democratic planning, children's perspectives are often not illuminated – pun intended. There are political questions at stake: How important is light to you? How much light do you need in public space? How much time do you spend in public space? How big and/or crowded is your home? Do you have to stay inside? What are the possibilities and expectations of consumption to sit in a public park rather than a nicely lit restaurant or café? Depending on the context, people might stay outside longer. There is a (multi)cultural element to it as well – Berlin, Neukölln, the neighborhood I used to live in, is home to many communities from the Mediterranean and the Middle East. Some folks are used to hanging out outside until later at night, sometimes regardless of season and temperature. In other cultures, people seem more home/inside-bound, go home and eat at home at six o'clock every night.

AL:

Those are all interesting aspects to reflect upon in relation to children's independent mobility as well. There can be cultural, social, physical, as well as other factors influencing parents' decision for the child to be "allowed" to be outside during dark hours, but also in relation to the child's wish or willingness to be outdoors. I have read studies that discussed that Swedish children may have higher levels of independent mobility during dark hours compared to other countries since we are more accustomed to extended hours of darkness from an early age. In my project, I attempt to nuance these discussions to also consider, for example, the local context. In the walking interviews, we stopped at

different types of environments such as a playground, a walking and cycle path, and a green area. Depending on the type of environment, the experience of outdoor lighting and the need for it vary. For example, in urban forests, children and parents do not always see the need for those spaces to be lit up.

GT:

That is why we have a **differentiation of location** – Anna researches urban places, whereas I look at the fringe of the city, the urban bordering the urban forests. The amount of lighting would be different in a park or adjacent to the forest. In an urban environment, there might be a higher expectation for light because there are several users: Cars with their own lights, cyclists with their reflectors and head torches, etc. Hence, there are moving and static sources of light, which are all produced by humans.

FDL:

Bridging into the question of the **more-than-human connections to light and darkness**: How do you encounter actors in urban spaces like rabbits, rats, or other animals at playgrounds? (How) do environmental psychologists research whether animals are disturbed or distressed by light and darkness? What are potential tensions or usage conflicts between artificial and natural light, or human and more-than-human needs for light and darkness?

AL:

From an environmental psychology point of view, we do not really capture the animals' perspective, but rather the human experience relating to ecological questions. Hence, we collaborate with other research fields such as ecology, thus gaining insights into aspects of darkness and outdoor lighting from a more-than-human perspective.

GT:

We know that outdoor lighting is only for us humans. No pigeon has ever asked for more light. And there is potentially a friction, or even contradiction, between needs for light and darkness. We are trying to advance ecological sustainability by introducing measures such as dimmed lighting, but, at the same time, animals do not *need* additional, artificial, or electric light at all. We humans use those areas, and we often want to use them *more*. That is why we are trying to find light solutions that do not require so much brightness and energy consumption, which results in light pollution. But, of course, we know that lighting ultimately serves mostly us humans, so we have an ecology work package in NorDark, which investigates the impact on wildlife for the same lighting applications at the same time.

FLD:

Teasing out your **notion of sustainability** a bit more, would you say it is mostly about a

resource-efficient and needs-based use of light that does not pollute or waste light?

GT:

There are light design strategies and solutions that enable *more* ecological sustainability: For example, having lampposts of different light colors on the red spectrum, which could be less harmful for animals. Other strategies of managing light sustainably consider the three pillars of (1) dimming light, (2) directing light towards the ground, or (3) turning the light off altogether. Whiter light can attract insects and disrupt their life functions. . One very practical decision our light design colleagues made was to develop head torches able to be tilted so that they can point to the ground. This lighting helps to navigate yourself so that you are controlling what you're seeing. This also helps not hitting other people and animals with your light beam, thus interacting more effectively. Technology can not only map human responses to light, and how various light constellations affect humans mentally, or with regards to their sense of safety. In my PhD project, more-than human species come near a lit environment, which in fact creates barriers for animals. Consequently, animals move away from the human-produced lit environment and deeper in the forest.

FLD:

Thus, balancing light and darkness touches on trade-offs and negotiating potential tensions. It seems to be trying to figure out whose needs for light matter *more*? I was quite struck when I came to Malmö in February and saw that many urban areas are highly lit in dark hours but very little used. Hence, it made me wonder about the **democratic deficit in light pollution** –how much light are we spilling without people using it, let alone needing it? Solutions like dimming lights or motion-sensitive lights seem like a partial compromise to a bigger problem. However, decisions about lighting often seem to be made by lighting experts like engineers or policymakers. When it comes to technical expertise, how do you enforce **interdisciplinary collaboration**?

AL:

Finding ways to develop sustainable outdoor lighting needs interdisciplinary collaboration and involvement of potential users. With our planned workshops, we aim to involve participants from diverse research fields who can contribute with different perspectives to collaboratively develop recommendations for future-oriented lighting design with the users, which are children in my case, in mind. But we also have colleagues who are doing lab-based studies, trying to figure out physiological aspects of light exposure. They can develop recommendations regarding different health aspects of light and darkness, such as light for office spaces or school environments.

GT:

There is always interaction with people in the lighting and other disciplines. I would never have thought about the head torches as a research stimulus myself. Not being a user

myself, I was skeptical about wearing it as the only source of lighting in an urban forest at first. When I tried, I was genuinely surprised that it worked so well in navigating me. This is why we need to respect other disciplines for providing us with information and ideas, to build knowledge together.

FLD:

Would you share how your research on light and darkness has shaped your **own experiences** of being out in the world? Do you go to other cities or to your own hometown and constantly think about the type of lightness you are surrounded by? How does your research focus influence your own daily experiences?

AL:

Before I applied for the PhD position, I was a bit hesitant to focus on artificial outdoor lighting for several years. I have a background in horticulture and landscape architecture and thought about doing research in that area. I grew up in the countryside and had not really thought about the role of outdoor lighting for children to be outdoors. I played outside a lot – both in daylight and darkness. Growing up, it was valuable for me to be outdoors when it was dark, being able to see the stars, bats, or playing hide-and-seek with other children. It was connected to a feeling of being ‘scary fun’ and of mystery. It really brought value to the autumn and winter seasons. In later years, and in connection with my project, I have started to think in terms of security and safety, but I carry with me a more playful perspective on outdoor lighting and darkness.

GT:

I had the following experience: When I had some friends visiting from Greece, we went to Copenhagen. I suggested we go into the area of Christiania because I wanted to show them the place. But it was nighttime and my guests did not want to go into the alley that led to the area. At the time, I thought that it was very strange that they did not want to go there. But now I realize that I requested them to go into the unknown, into a pathway of darkness. I realize now that we have to be informed and educated in order to feel comfortable with darkness.

I am also thinking more about light pollution and the lit buildings in Malmö, where I live. Why are company buildings brightly lit at midnight? There is no need for it. It shapes your own perception or sensitivity about the beauty of darkness and the problem of light pollution.

FLD:

Societal debates revolve around how we spend ‘tax money’ – do we fund the swimming pool, or children’s lunches at school? It seems to me that light and darkness is usually not a vastly democratically discussed topic, which I find quite striking as a political theorist. To conclude, and in your view, what would a **utopia of light utopia look like**? What is your

dream scenario of a broadly sustainable city of light and darkness?

GT:

We already have great knowledge about light. We need to sensitize people, acting as intermediaries who deliver knowledge to municipalities and society. We already collaborate with municipalities, which gives me hope that they will use some of our findings and some of our conclusions because they were part of the process for creating the data. The conclusion is that cities do not need that much light to cover people's needs. This insight could be a step towards change. In a nutshell, our conclusion might be: **a bit less light is still enough.**

If we are trying to be objective about field observations, the data seems to indicate that we do not need excessive light. It can be less. But the design and color intensities could be different and still cover our needs. It is about **having the right light at the right place.** Sometimes you don't need any light if, for example, your activity depends on darkness. It is utterly contextual to find synergies of function and aesthetics, and it is partially our job to translate these tensions into policy action.

FLD:

Speculatively speaking, what else would you like to research? How would you approach the lightscape of Folkets Park, which I have been focusing on during my artist residency in Malmö?

AL:

In relation to Folkets Park, I think it would be interesting to do walking interviews with children and include observer-based environmental assessments such as the perceived outdoor lighting quality (POLQ: [Perceived outdoor lighting quality: A lighting assessment tool.](#) | [Lunds universitet](#)) tool in combination with technical environmental assessments, such as measurements of horizontal illuminance and SPD. Behavioral observations could also be insightful. I think it would be interesting to observe playgrounds and investigate if children's behaviors change depending on the light conditions, with regard to daylight, darkness and artificial lighting, for example, by doing behavioral mapping to examine where and when children move in relation to the states of light and darkness.

As an example, I wonder whether children use the play equipment when it is dark if they are not lit up? Do they like darker areas on playgrounds? How does the light influence where they play and move around? And if you change the lighting, does their behavior and movement change? How close do they play to the light? Do they keep to lit areas, or do they also explore the darker corners? I think, overall, there is potential to develop more playful, creative, and interactive solutions in places for children where one could work with shadows, patterns, different colors, or motion-sensitive lighting. We could work towards creating cozy atmospheres or interactive designs, e.g., lamps to climb on.

GT:

Some green spaces become hindrances or threats at night. While in daytime, parks like Folkets Park are recreational places, suddenly, during darkness, they become barriers. Hence, we need new ways to communicate and inform the public about light and darkness. We need to create a more holistic view about non-threatening aspects of darkness. To introduce people to those places anew, to be used safely, even at night. Instead of marginalizing darkness, we need to inform people and show them new methods to encounter the dark. It is about **changing the narrative** – and that consists of both mental and cultural changes and ways of unlearning what parks can be during the darkness. For families and children, parks could offer new activities at night. For example, regarding the graffiti walls in Folkets Park, you could turn graffiti-writing sessions into an event for the whole family: “Let’s go see how the artists are painting the graffiti.” But we have to be collectively informed about those things and change our current practices of using the park.

FLD:

Thanks to you both for sharing your insight on practical and societal concerns about the need for light and darkness. For future-inspired lighting, challenging the binary **of light and darkness** might be a way forward. It is not only about flipping the light switch on or off. Maybe, in the future, we imagine and use *public* light as gradients of illumination that are attune to human and more-than-human needs.

References

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Authors



Anna Litsmark

PhD Student » Lund University

Anna Litsmark, PhD student in Environmental Psychology, Department of Architecture and Built Environment, LTH, Faculty of Engineering, Lund University. Anna is a PhD student in Environmental Psychology at Lund University, working in a project focusing on children's independent mobility during dark hours and the potential role of outdoor lighting for their mobility. By conducting studies with children (ages 10–13) and their parents in three Swedish cities at different latitudes, she explores how darkness and outdoor lighting affect children's experiences, feelings, and ability to be independently mobile outdoors during dark hours. With a background as a gardener specialized in health and design (bachelor's degree in biology, master's degree in landscape architecture), she has a particular interest in how people experience, use, and are affected by outdoor environments, as well as how these environments can be designed to promote health and well-being.



Georgios Tsiakiris

PhD Student » Lund University

Georgios Tsiakiris' background is within psychology, specializing in systems theory and family therapy. He has worked at the Municipalities of Lund and Helsingborg, focusing on integration and treatment of young adults. Georgios obtained his Masters in Cognitive Science från Umeå University, having health psychology as main research subject. His PhD research project is about mediating the needs of people and nature in after dark environments. We investigate how outdoor lighting gives pedestrians accessibility to urban green areas, by also complying with the needs of other species. The aim of the study is to develop environment-friendly light sources that can enable walkability and comfort on people. The psychological aspect of health-promoting behaviors that enhance well-being is part of Georgios' contribution. The project (NorDark) is a collaboration among three universities from Sweden, Finland and Norway. The Sustainable Development Goals (SDGs) from Agenda 2030 which we contribute to are good health and well-being (SDG 3) and sustainable cities and communities (SDG 11).



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Dr. Friederike Landau-Donnelly [she, they] is an intersectional political theorist, urban sociologist, and cultural geographer. She is interested in political theories of conflict and the ways in which public spaces are contested. Through empirical and artistic research in places like Vancouver, Berlin, Leipzig, Linz, Vienna, and Malmö, Friederike theorizes different modalities of conflict in cultural policy and governance arrangements amongst commissioned and self-instructed artists, artist collectives, policymakers, and local communities.

Friederike has developed and taught undergraduate, graduate, and PhD-level courses in a variety of disciplines such as human geography, spatial planning, arts and design, political theory and sociology. As co-editor of publications such as *Handbuch Kulturpolitik* (Handbook of Cultural Policy, Springer, 2023), *Konfliktuelle Kulturpolitik* (Conflictual Cultural Policy, Springer, 2023), and *[Un]Grounding – Post-Foundational Geographies* (transcript, 2021), Friederike has contributed to create an understanding of the conflictual underpinnings of the production of space and culture. Friederike publishes poetry as #PoeticAcademic: <https://friederikelandau.com/poeticacademic/>