

World view



By Michele Acuto

We need a science of the night

Understanding what happens in cities after sunset is crucial to global sustainable development, argues Michele Acuto.

This week, as the Northern Hemisphere has its longest night, my thoughts turn to the 4,300 dark hours in a year. My interest in cities after hours began a decade ago with a project on the economy of waste that saw me riding in rubbish lorries in London, Singapore and Sydney, Australia, often between 11 p.m. and 5 a.m. After being steeped in 'global city' research, spending time with refuse collectors showed me a new world of office cleaners, health-care workers, mammoth restricted-hour lorries, sex workers and homeless people.

This world matters: New York's nightlife accounts for US\$29 billion of economic activity annually and 250,000 jobs. More than one-fifth of Tokyo's workforce is doing night shifts. One-third of everyone employed in London, 1.6 million people, work at night. One-third of transactions in Hong Kong happen after hours. Those who work night shifts face more hazardous and stressful labour conditions than their daytime counterparts.

Yet scholarship and policy often neglect these dark hours, even as research and policy aimed at creating better cities is gaining traction. A more-equitable and sustainable world needs a science of the night, an explicit cross-disciplinary focus to inform policy about the issues faced by urban areas at night, from energy to climate, waste and inequality.

Some cities are waking up to this. In 2018, New York, the 'city that never sleeps', set up an Office of Nightlife. In 2012, Amsterdam appointed its Night Mayor. London has had a Night Czar since 2016. These scattered efforts need to be better coordinated and connected. And there is still too little rigorous evidence to inform policy.

For instance, few analyses look to see whether policies exacerbate inequalities, which tend to be worse at night. The hospitality and entertainment sectors get most of the focus, even though more midnight workers are employed in logistics and health care. Work at University College London (UCL) demonstrated that night-time spaces for LGBT+ people (people from sexual and gender minorities) are important for community life, and are also at a higher risk of closing than other establishments (B. Campkin and L. Marshall *Soundings* 70, 82–96; 2018). UCL also highlighted inequality in transport options: London's celebrated 24-hour Night Tube serves bustling downtown and restaurant districts, and so does more to accommodate late-night revellers than low-income late-shift workers.

In 2018, at least 8,855 people slept rough on the streets of London, a 140% increase over the past decade, with similar trends globally. An estimated 154 million people, about

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2% of the world's population, are homeless. Nights for them are often physically and mentally dangerous. A 2015 study found that the health effects of heatwaves at night, including on sleep and stress levels, have been overlooked in Australian cities, and probably on other continents.

Information about the night-time is also crucial for a sustainable planet. At the Connected Cities Lab, we are working with the Melbourne School of Design and the London-based design firm Arup to evaluate how cities are performing at night-time vis-à-vis the United Nations Sustainable Development Goals. This is no academic exercise. Evidence that late-night and shift workers have higher risks of conditions such as heart disease, mental-health disorders and cancer reinforce other analyses calling for a higher night-time wage. Understanding that energy use often peaks at night calls for a smarter lighting infrastructure across our cities. Appreciating effects on wildlife can encourage 'temporal zoning' that benefits plants and animals in our cities. Our goal is to provide evidence on the complexity and value of this knowledge, while preparing the next generation of city leaders to be savvier about night-time risks.

A science of the night should build on many existing pockets of promise within and beyond academia. After-hours analytics in neuroscience and physiology is thriving. The 'science of sleep' is ever-popular in the media, and bio-science about nocturnal changes in animal behaviour is making headway. In the humanities, literary and cultural studies of 'nightwalking' have a long tradition of depicting how our society changes after hours. The British geographer Robert Shaw has even called for the development of a 'nightology' in the social sciences.

Night-oriented research does not yet form a coherent body of inquiry, and there is too little discussion about how night-time shapes sustainability challenges worldwide. Social and natural sciences need to speak to each other more about what happens after hours. Especially when some of the most influential thinking on the night-time comes from fast-food chains, utilities giants and other industries that look to maximize sales without considering effects on places and people. McDonald's, as a \$30-billion real-estate powerhouse with an explicit night-time strategy, probably knows more about the after-hours than most policymakers.

Night-time literacy programmes for scientists and officials are urgently needed. These should deliver better night policy, from zoning to wages, transport and nature-based solutions. Night-time assessments beyond the entertainment sector should be expected when mayors promote action on global issues such as climate, resilience or migration. Night-time is a globally shared experience across countries and cultures. By building local knowledge, we can craft global good. It's time to bring what happens when the lights go down out of the shadows.

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