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Re-envisioning the Nocturnal Sublime: On the Ethics and Aesthetics of Nighttime Lighting

Taylor Stone¹

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Abstract

Grounded in the practical problem of light pollution, this paper examines the aesthetic dimensions of urban and natural darkness, and its impact on how we perceive and evaluate nighttime lighting. It is argued that competing notions of the sublime, manifested through artificial illumination and the natural night sky respectively, reinforce a geographical dualism between cities and wilderness. To challenge this spatial differentiation, recent work in urban-focused environmental ethics, as well as environmental aesthetics, are utilized to envision the moral and aesthetic possibilities of a new urban nocturnal sublime. Through articulating the aspirations and constraints of a new urban nocturnal experience, this paper elucidates the axiological dimensions of light pollution, draws attention to nightscapes as a site of importance for urban-focused (environmental) philosophy, and examines the enduring relevance of the sublime for both the design of nighttime illumination and the appreciation of the night sky.

Keywords Darkness · Light pollution · Sublime · Environmental ethics · Environmental aesthetics · Philosophy of the city

1 Introduction

Cities given, the problem was to light them. So begins R.L. Stevenson's (1881) essay "A Plea for Gas Lamps" bemoaning the new technology of electric lighting in favour of gas-light. While the specifics of Stevenson's argument may seem antiquated, the sentiment is familiar. Lighting is fundamental to our nighttime spaces and experiences, the antecedent to any discussion of the city at night. It has brought momentous changes, creating space and time out of darkness, expanding human activity, and allowing for new forms of visual expression. The spectacle of electrical illumination is one of the great technological achievements of our age, and an integral part of cities: "The night skyline has become the signature image of the metropolis, a defining landscape of modernity" (Nye 2010, p. 12). However, the proliferation and abundance of illumination has created a new environmental problem: light pollution. Of the varied adverse impacts of artificial light at night, perhaps the most conspicuous is the

elimination of darkness and the natural features it makes possible. The starry night sky has captured human imagination and curiosity for ages, but is becoming increasingly rare and difficult to experience. City lights and the night sky have come into conflict, adding a new dimension to the *problem* of lighting cities.¹

This nascent conflict is a complex environmental challenge for the twenty-first century, yet it also creates an opportunity to propose new visions for urban nightscapes. Grounded in the practical problem of light pollution, this paper examines the contemporary axiological dimensions of urban and natural darkness. In particular, competing notions of the *sublime* and their interrelated moral evaluations are examined. To do so, different threads analyzing conceptions and evaluations of nocturnal sublimines are gathered together from across disciplinary boundaries. Experiences of urbanized and natural nightscapes—of electric illumination and the starry sky, respectively—evoke similar aesthetic responses, but with different moral connotations. However

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¹ This paper is explicitly limited in scope, focused on developed regions where the ecological and social impact of overabundant nighttime lighting has become a concern. Lighting issues in regions of the world with limited or no access to electricity—what Pritchard (2017) describes as *lighting poverty*, the inverse problem to light pollution—are not discussed here.

neither can, nor should, be quickly or wholly disvalued. We must acknowledge the heritage of twentieth century lighting developments without uncritically accepting the current state of affairs or ignoring its environmental impact. To do so, I propose that we must re-envision the urban nocturnal sublime, striving for nightscapes that are both aesthetically powerful and morally engaged. In doing so, explicit attention is given to the influence, and incorporation, of values into the built environment, an important theme for urban-focused philosophy (e.g., Epting 2016; Schrijver 2015). Put otherwise, this paper explores how philosophy can contribute to envisioning the future of cities at night.

The following section investigates in turn the aesthetics of city nights, the value of naturally dark skies as understood via the threat of light pollution, and the resultant spatial differentiation. First urban nightscapes are presented, focusing on their legacy of positive values and notions of the *technological sublime*. Next, the problem of light pollution and resultant evaluative shift towards artificial lighting is discussed, focusing on ideas of the *astronomical sublime* as a motivation to protect the night sky. The moral implications of these competing sublimities are then examined. It is argued that a wilderness nightscape has been constituted, where the night sky is accessible and the preservation and protection of darkness is seen as a moral duty. These spaces require protection from light-polluting, urbanized nightscapes, which are defined and bounded by artificial illumination. These two distinct nightscapes reinforce perceptions of a nature-culture dichotomy, or what has been called a *geographical dualism* between cities and wilderness (Light 2001), with troubling implications for urban-focused environmental ethics. However, this paper will not end with a critique. Section 3 proposes that urban nocturnal experiences be conscientiously re-envisioned, as a step towards addressing the problems of light pollution and overcoming this geographical dualism. After first situating dark skies as a form of urban restoration, recent works seeking to rehabilitate the sublime's relevance to contemporary environmental aesthetics are utilized to explore the possibilities of a new urban nocturnal sublime that incorporates the positive aspects of dark skies into city nightscapes.

2 Moralizing Lighting, Moralizing Darkness

Throughout this section, close attention is given to two different manifestations of the sublime and the interrelated moral evaluations of contrasting nightscapes. While here interpretations of the sublime in contemporary (and context-specific) discourse are of primary concern, they can be broadly construed as invoking a Kantian notion of the sublime. While sharing some similarities with notions of beauty, the sublime should be understood as a distinct aesthetic quality and category. The sublime is at first overwhelming

in its vastness or power before giving way to a pleasurable experience; it is in this tension between displeasure (apprehension, overwhelmingness, anxiety, etc.) and pleasure (a distanced delight or appreciation) that the sublime arises. Paradigmatic examples of the sublime are found in natural landscapes and events: mountain ranges, waterfalls, volcanoes, thunderstorms, and the night sky. In particular, the experiences described below elicit the *mathematically sublime*, concerned with experiences of immense size and vastness rather than power, which is alternatively categorized as the *dynamically sublime* (Kant 1987; Brady 2013).

Following a common theme (i.e., the sublime) is useful for giving form to a nebulous issue. *Darkness at night* and nighttime illumination are so familiar that analyzing our experiences of them seems almost trivial. However they are malleable and variable concepts with many different manifestations, and their experiences have become closely entwined. On a conceptual level, “darkness does not trigger essential human responses but is always mediated by human practices and values” (Edensor 2017, p. 170). The sublime is thus a useful—and formative—lens through which to analyze the symbolic meanings and evaluative judgements of differing nightscapes. And importantly, the sublime draws attention to the entwinement of aesthetic *and* moral judgements of contemporary nightscapes.

2.1 City Nights and the Technological Sublime

The modern era of formalized public lighting efforts (roughly since the mid-seventeenth century onwards) has brought with it many benefits. The various technological innovations to oil lamps, gaslight, and electric light, in combination with changing commercial and social practices, have fundamentally altered urban nights. Historical accounts of these developments tend to put forward a broad thesis that the ramifications of nighttime lighting are as much a product of symbolic and social meanings as technical innovation or functional purpose (e.g., Nye 1990; Schivelbusch 1988; Schlör 1998). Artificial illumination has long been positively associated with values such as safety and progress, while darkness has maintained antithetical associations with danger, evil, and primitiveness. Dunnett (2015, p. 622) explains that, “the idea of light, both in a practical and symbolic sense, has come to be associated with modernization and the so-called ‘Enlightenment project’ in various different ways... Here we can also see how the metaphor of light has taken on a moralizing tone, seen as an all-encompassing force for good, banishing the ignorance of darkness in modern society.” Electric lighting in particular embodies this symbolism, understood as providing “a visible correlative for the ideology of progress” (Nye 1990, p. 35). While this has been challenged and disrupted by concerns over light

pollution, the legacy of positive values shaping and shaped by lighting infrastructure remains.²

Alongside the moral symbolism of illumination has been a profound transformation of nocturnal experiences. In *Acquainted with the Night* (2004, p. 95), Dewdney reflects on the “electric blaze of the city at night” as being “one of the most fantastic sights of our times.” This experience, explains Dewdney, is paradoxical, in that its monumentality gives a feeling of permanence, but is also made more impressive knowing that it has only been possible for little more than a century. Electrified skylines, a defining feature of urban nightscapes, have become paradigmatic of what Nye (1994, 2010) calls the *electrical sublime*, a subcategory of the *technological sublime*. With this concept, Nye (1994) extends theoretical understandings of the sublime beyond solitary experiences of natural settings to also include collective experiences and popular accounts of modern technological feats, such as railroads, skyscrapers, and spacecraft. As applied to illumination, Nye explains that during the initial electrification of cities (ca. 1880s–1920s), nighttime lighting was somewhat disorganized and had many competing actors and interests, creating a nightscape of different lighting intensities, types, colours, etc. This development, while unplanned, created a distinct and novel aesthetic. “Taken together, the myriad lights produced a lively landscape with strong popular appeal. Like the accident of the city skyline, the electrified city was something fundamentally new, an unintended sublimity” (Nye 1994, p. 173).

While Nye (1994) is referring specifically to developments in the United States (he points out that European cities were not quite as enthusiastic about commercial lighting in the early twentieth century), his observations bring to mind contemporary urban experiences around the globe. To walk through a downtown core at night is to be immersed in artificial light, to be encompassed by this technology. Illumination re-shapes the urban fabric, sometimes seemingly ad hoc and at times carefully planned, with attention paid to what and where is lit, and how. In either form it effectively *creates* the city at night, carving space and time out of darkness. There is a reverence and excitement when entering a metropolitan city at night, with its innumerable lights creating a vibrant atmosphere. Entering a space like Times Square in New York City for the first time, it is hard not to be taken

aback and in awe of the brightness and multitude of lights. In *New York Nocturne* (2008, p. 19), Sharpe presents the sublimity of New York as “both inspiration and example, projecting an all-encompassing script of light that stunned observers with its unnatural brilliance and cryptic, seemingly cosmic significance.” Upon visiting New York City in the 1930s, the architect Le Corbusier described it as a “Milky Way come down to earth” (quoted in Sharpe 2008, p. 6). In moments when you become aware of the immensity and scale of artificial illumination in places like this, it takes on an almost otherworldly quality. It is all the more powerful if we see these nightscapes as wholly artificial environments, as human creations. City nights create a sort of human-made constellation, erasing the heavens in favour of “man-made stars” (Nye 2010, p. 12).

2.2 Light Pollution and the Astronomical Sublime

Electric lighting proliferated during the late 19th and early twentieth centuries, and was subsequently normalized as a taken-for-granted backdrop to city nights (Nye 1990). The spectacle of artificial illumination, though, has had consequences. Its proliferation has never been universally celebrated (see Edensor 2017, pp. 170–77), and has been increasingly criticized from an environmental perspective. There is a growing appreciation that the developed world is now over-illuminated, or at least poorly illuminated. The adverse causes and effects of artificial nighttime lighting have come to be known as *light pollution*, and an increasing body of literature is highlighting the consequences.³ Billions of dollars are spent annually to power hundreds of millions of lights around the world, and their necessity and efficiency has come under scrutiny. For example, in the USA it is estimated that approximately 30% of outdoor light is wasted, at a cost of almost \$7 billion dollars annually. This equates to vast amounts of energy usage—approximately 66 million metric tons of CO₂—equivalent to the emissions from roughly 9.5 millions cars (Gallaway et al. 2010). The effects are not limited to efficiency, as there is also concern over the effects of artificial nighttime lighting on different species and ecosystems, termed *ecological light pollution* (Longcore and Rich 2004). Likewise, the effects of artificial lighting on human health are quickly emerging as a contentious and important subject of inquiry (e.g., Chepesiuk 2009). While there is still debate over the extent of the effects and costs, it can nevertheless be appreciated that artificial lighting is giving rise to a new domain of moral and political concern. The growing recognition of light pollution has inverted the problem of how to light cities, with questions of environmental

² While this paper focuses on contemporary environmental issues and the influence of artificial lighting technologies, particularly electric lighting, the symbolism of light and darkness recedes well beyond the modern era of public lighting. There is a rich and complex history of scientific, metaphysical, theological, and moral interpretations of light, as well as related symbolisms of night and darkness, that have shaped contemporary understandings but are outside the scope of this paper. For in-depth analyses, see for example Ekirch (2005), Park (1997), and Zajonc (1993).

³ For an overview of the costs and benefits of nighttime lighting, see for example Gaston et al. (2015) and Pottharst and Könecke (2013).

degradation, energy efficiency, and health impacts coming to the fore.

A particularly conspicuous effect of light pollution is the ambient atmospheric brightness created by light directed or reflected upwards into the night sky, termed *skyglow*. It is a familiar phenomenon: being on the outskirts of a city and seeing a glowing horizon, almost like an artificial dawn; observing an orange-coloured haze above you in cities (especially on overcast nights). In fact, it is so common that it has become the norm in many parts of the world. Falchi et al. (2016) have found that 83% of the world's population, and over 99% of people living in Europe and the United States, live in places with a night sky considered to be light-polluted (a minimum of about an 8% increase above natural nighttime conditions). In cities, the artificial night sky brightness is typically several magnitudes greater. Furthermore, our nights continue to get brighter by around 3–6% annually worldwide (Hölker et al. 2010).

Light pollution—and in particular skyglow—has spurred a deeper reflection on the need and desire for lighting at night, and on what is hindered or degraded by artificial illumination. This has drawn attention to the environmental and cultural value of darkness, and in particular the value of night sky (e.g., Bogard 2013; Gallaway 2014; Henderson 2010; Stone 2018). In response to the growing pervasiveness of artificial lighting and its negative impacts, efforts and organizations have emerged that work towards the protection and preservation of dark skies. The largest advocacy group, the International Dark-Sky Association, has the stated mission of “protecting the night skies for present and future generations” (IDA 2016). Their work, along with other similar organizations, includes advocating for best practices in lighting policies and design (e.g., IDA-IES 2011), as well as the creation and protection of dark sky reserves around the world (Meier 2014).

While quantitative reasons for the mitigation of light pollution are often highlighted—the billions of dollars wasted annually on poorly designed lighting, for example—arguments likewise rest on qualitative rationale. Skyglow cuts off experiences of the night sky, causing concerns over the “loss of the night.” For all of human history we have had a starry night sky above us, so the argument goes, which has been a resource for mythology, religion, navigation, scientific discovery, etc. The cultural losses that we will suffer from the disappearance of the night sky underlies judgements that light pollution is bad and the protection of the night sky is a moral duty. This is perhaps best exemplified in initiatives such as the Declaration in Defense of the Night Sky, which asserts that access to an unpolluted night sky should be an inalienable right (Starlight Initiative 2007).

Closely interwoven with these ethical arguments is the position that, at a basic level, it is an experience worth preserving. To explain the related aesthetic value of the night



Fig. 1 An example from the Milky Way poster series: Death Valley National Park, Tyler Nordgren, c. 2012–2016 (<http://www.tylenordgren.com/milky-way-posters/>)

sky invoked by astronomers and environmentalists, Dunnett (2015) draws on notions of the *astronomical sublime* (Kessler 2012). A starry sky is beautiful and inspires a sense of wonder, yet there is also an immensity and vastness that inspires a sense of awe. This feeling, a seemingly inescapable response to the starry sky, is both a visceral response and one reinforced by modern science (Shapshay 2013). To look out into the night sky is to see billions and billions of stars and galaxies shining their eon-old light from incredible distances, through a harsh and inhospitable universe. It has temporal and spatial dimensions that we can comprehend abstractly, but its scale is difficult to fully grasp (Hepburn 2010). Put more simply, it is the epitome of the mathematical sublime in nature.

The contemporary axiological dimensions of the night sky are encapsulated by the “Milky Way” poster series of artist and astronomer Tyler Nordgren (Fig. 1). The series features stylized and semi-abstracted nightscapes of various United States national parks, typically featuring a few

solitary, contemplative figures staring up at a start-dotted sky with the Milky Way meandering across. Nordgren's posters present a tamed, domesticated sublime encounter, providing a contemporary view of darkness far different from the values discussed in Sect. 2.1. Instead of a threatening landscape the posters present a pleasant and inviting scenic sky, with a monochromatic colour palette of various shades of blue—in contrast to the pitch-black darkness typically associated with sites of danger or evil. In sum, Nordgren's Milky Way posters capture the moral-aesthetic essence of the astronomical sublime evoked by dark sky activists. However, to re-focus on the urban nightscape, it is exactly this type of sublime—both its domestication and its geographical boundary—that must be scrutinized.

2.3 The Geographical Dualism of Artificial Lighting and Natural Darkness

Nighttime lighting, understood and evaluated via the concept of light pollution, is creating a contemporary relation between lighting and darkness that is far different from the symbolic heritage discussed in Sect. 2.1. Artificial lighting has become so pervasive, so ubiquitous in our daily life, that darkness has become a “sought-after luxury” (Hasenöhr 2014, p. 119) needing protection and preservation. Knowing and experiencing true darkness and its features takes a concerted effort, perhaps best exemplified in Bogard's *The End of Night* (2013). To experience a truly dark, or natural, night sky, we must seek it out. This means escaping our cities and journeying into the wild. Only away from the encroaching skyglow of cities is access to a starry sky, and to the astronomical sublime, possible. In analyzing the Campaign for Dark Skies in Britain, Dunnett (2015) explains that urbanization is seen as the primary threat to dark skies, creating a “moralized geography.” Here, we see the reinforcement of a conceptual divide between nature and culture, and the resultant spatial differentiation between natural and built environments, that has been a central concern of urban-focused environmental ethics (e.g., King 2000; Light 2001; Stefanovic 2012). In its contemporary manifestation, the sought-after unpolluted dark sky is categorized as something *out there*, outside of cities and human activities, which are in turn defined and bounded by artificial light.

While the value of the night sky should not be solely ascribed to the contemporary effects of lighting technologies, they do—at the very least—actively draw attention to the loss of this experience, in turn re-positioning the technological sublime as a *pollutant*. Sharpe (2008, p. 24) notes that “The arrival of artificial light had, almost paradoxically, “invented” natural light, for no such conceptual category existed before the new technologies posed alternative forms of illumination.” Pritchard's “The Trouble with Darkness” (2017) places this issue in its historical and political context,

problematizing how we conceptualize both light pollution and darkness. The paper focuses on NASA's 2012 image *City Lights of Africa, Europe, and the Middle East*, a composite satellite image of the earth at night (Fig. 2). Through a close reading of the image, Pritchard highlights the creation of a new site of environmental concern (the nightscape) and a related new environmental issue (light pollution). However, *City Lights of Africa, Europe, and the Middle East* is not a photograph but an altered image: sources of lighting deemed natural—fires, volcanoes, etc.—were filtered out, increasing the contrast between dark regions and brightly-lit urban areas. This is troubling for a variety of reasons, explains Pritchard, including the romanticizing and depoliticizing of the *natural* darkness of Africa, as well as the artificially sharp delineation of illuminated (urban) zones. Here we see the reinforcing of what Light (2001) calls a *geographical dualism* between cities, as sites of human activity, and wilderness, as the site of pristine and authentic nature.

Pritchard's title is a reference to Cronon's “The Trouble with Wilderness” (1995), a critique of the concept of wilderness as morally dubious grounding for environmental ethics. Seen as hearkening back to Romantic ideals of nature, Cronon argues that wilderness is a social construct reinforcing a human-nature divide, idealizing natural landscapes as places devoid of humans, and as sites mainly for affluent urbanites seeking leisure and tourism. Cronon is explicitly critical of romanticized notions of sublime experiences in wilderness, for its role in both idealizing and domesticating experiences of the natural world (something arguably present in the astronomical sublime described above).⁴ By placing the night sky within the realm of wilderness, we place our urban nightscapes in a morally precarious position. In the extended quote below, seeing “artificial lighting” and “natural darkness” as synonymous with “civilization” and “wilderness,” respectively, highlights the predicament:

We inhabit civilization while holding some part of ourselves—what we imagine to be the most precious part—aloof from its entanglements. We work our nine-to-five jobs in its institutions... we benefit from the intricate and all too invisible networks with which it shelters us, all the while pretending that these things are not an essential part of who we are. By imagining that our true home is in the wilderness,

⁴ Cronon (1995) is speaking explicitly about the American experience and conception of wilderness. Kirchoff and Vicenzotti (2014) discuss perceptions of wilderness from a European perspective, which does differ but carries similar characteristics. Most important for the present discussion is the position that wilderness is constituted by “specific meanings ascribed to it according to cultural patterns of interpretation” (p. 444). Furthermore, they also assert that contemporary perceptions of wilderness stand in opposition to urban spaces and human activities, and continue to embody ideas of the sublime.

Fig. 2 *City Lights of Africa, Europe, and the Middle East.* NASA Earth Observatory image by Robert Somon, using Suomi NPP VIIRS data provided courtesy of Chris Elvidge, April–October 2012 (<https://earthobservatory.nasa.gov/NaturalHazards/view.php?id=79793>)



we forgive ourselves the homes we actually inhabit. In its flight from history, in its siren song of escape, in its reproduction of the dangerous dualism that sets human beings outside of nature—in all of these ways, wilderness poses a serious threat to responsible environmentalism at the end of the twentieth century (Cronon 1995, p. 81).

This geographical distinction creates a discrete problem frame, affecting what sort of solutions to light pollution are possible. We place the night sky—a key feature we seek to preserve and protect—outside of the boundaries of urban settings, which are the main culprit of skyglow. In doing so, we create a fallaciously clean distinction between the natural night sky and the city, between the positive, authentic astronomical sublime and the polluting technological sublime. Solutions then take the form of preservation (of sites of wilderness) and containment (of the impacts of urban illumination). This is helpful in advocating for dark sky reserves, but implicitly accepts a separation of cities and nature. Like environmental ethics more generally, an ethics of nighttime lighting must also attend to the experiences and impacts found within urban spaces (see Light 2001, pp. 19–27).

3 Towards a Darker Future: Re-envisioning the Urban Night Sky

The profound moralizing effects of artificial lighting technologies have had far-reaching consequences, reframing lighting as a pollutant while simultaneously re-positioning dark skies as a valuable natural feature worthy of protection. So entrenched is the darkness-as-wilderness association that urban darkness is now perceived as somehow unnatural—blackouts or other disruptions to electricity create a temporary “artificial darkness,” before the normal state of affairs is reinstated (Nye 2010). But this perception can, and here I argue should, be challenged. In what follows, I propose that we actively re-envision urban nightscapes of the twenty-first century in a way that is sensitive to the axiological dimensions of artificial nighttime lighting and natural darkness. Bringing dark skies back into cities can be seen as a form of urban restoration, discussed in Sect. 3.1. This in turn informs how we should address the spatial distinction between the technological and astronomical sublimities, discussed in Sect. 3.2. The sublimity of urban nights is examined as a design criterion that will affect how we see our urban nightscapes, and ultimately what sort of restorative potential dark

skies possess. For this, I explore the possibilities of a new urban nocturnal sublime that seeks to incorporate the morally engaged aspects of the astronomical sublime into cities.

3.1 Darkening Skies as Urban Restoration

The unique characteristics of urban darkness require a somewhat different conception of *ecological restoration* than is typically debated in environmental ethics (e.g., Katz 2003; Light 2003). It is not an act of re-creating an aspect of nature via technological means, for the night sky is not actually destroyed; it is only cut off from experience. Acts of restoration are therefore focused on the technology that mediates our nighttime experiences. The analysis above reveals, at least in part, how contemporary meaning has been ascribed to dark skies, and what the implications are for an urban environmental ethic. This geographical dualism can be seen as a socially constructed response to the effects of our lighting technologies, and challenged in a conscientious way. *How we light* (and how we have lit our nights in the past) plays in active role in co-constituting our perceptions and understanding of the night and of darkness, and will continue to do so (Verbeek 2011). The mediating influence of our lighting infrastructure thus embodies both the primary challenge, and opportunity, to re-orient our urban nightscapes.

In arguing for an urban environmental ethic, King (2000) discusses the built environment's influence over our ability to "imagine and implement an environmentally responsible world" (p. 122). King further explains that contemporary cityscapes and their technologies act as an external constraint, minimizing our contact with the natural world. Dewdney (2004, p. 96) poetically describes the way in which artificial lighting technologies now encompass our lived experiences and keep darkness at bay, stating, "In a way we are like miners, tunnelling with light into the bedrock of darkness. Artificial lights carve tunnels and caverns out of the night, spaces in which we can operate as if it were day." Despite the benefits nighttime lighting brings, argues Dewdney, our light also confines us, and we rarely leave its boundaries. Where darkness does enter our cities, at present, it is largely perceived to be much different than the experiences described in Sect. 2.2. It is often considered to be unsafe and a place and time for questionable behaviours, both spatially and symbolically in opposition to the values of *natural* darkness.

Bringing the night sky into cities is an act of bringing a positively valued feature of darkness into urban settings, and of allowing us to see past our lighting technologies. The reinstating of urban dark skies can be seen as an act of urban restoration in the holistic sense, as described by de-Shalit (2003). Literally, it is an act of clearing the city of sky-glow and removing one type of "pollution," bringing with it energy and cost savings, as well as reducing the harmful

effects to urban wildlife and human health. Symbolically, it is an act of blurring the city-wilderness geographical dualism, of taking a step towards the creation of a city aesthetic in sync with the natural rhythm of day and night—an act of letting nature back into our cities, and vice versa. Restoring urban dark skies, then, can be understood as an act of re-orienting the ecological and cosmological sense of place for cities and their inhabitants, of re-connecting the urban with the natural. It allows for the incorporation and fostering of the full spectrum of values associated with darkness, from efficiency and sustainability to a connection to nature (see Stone 2018).

The restorative potential of dark skies can also extend to socio-political concerns over the separation of wilderness from cities. The embedded-ness of values and politics in technologies has been acknowledged at least since Winner's seminal article "Do Artifacts Have Politics?" (1980), and lighting technologies are no different. If anything, their longevity of influence, as well as ubiquity, makes lighting infrastructure unavoidably political. Like wilderness, dark sky reserves are a site of leisure and tourism far outside cities, raising questions of accessibility (Light 2001; Pritchard 2017). Bringing dark skies back into cities is certainly not a silver bullet, but there is the potential to address issues such as accessibility to nature, in turn re-positioning the (environmental) moral status of urban nightscapes.

Restoring urban dark skies requires the extension of current debates about the meaning and make-up of a *natural city* (Stefanovic 2012) beyond acts of *greening*, to also include acts of *darkening* cities. This will require attention to the over-use of lighting, combined with capitalizing on the instrumental and intrinsic value of dark skies (Gallaway 2014; Stone 2018).⁵ Such an approach has begun to percolate in the practice and discourse of professional lighting designers—what Edensor (2017) calls "dark design." We can see examples in the work of the lighting design firm Concepto and their master plan for Rennes, France, which introduces *dark zones* into the city core (Concepto 2012; Narboni 2017). Similarly, the Dark Art Movement started by lighting designers Chris Lowe and Philip Rafael champions a conscientious usage of darkness within lighting design, contending with the "collective nyctophobia" of the profession (Lowe and Rafael 2011, 2014). In sum, these designers are envisioning a return of darkness to cities far different from the ominous gloom of the past, rather as an environmental good and a "re-enchantment" of the night (Edensor 2015).

⁵ The most common objection to reducing nighttime lighting relates to concerns over safety. While outside the scope of this paper, an overview of the contentious relationship between safety and lighting can be found for example in Gaston et al. (2015).

If such trends are to continue, there is a question of what aesthetic principles can guide future decision-making and help to position dark skies as a form of urban restoration. de-Shalit (2003) notes that each city has its own conception of “the good,” or its own story, meaning that the realization of dark skies will, and likely should, manifest differently in different contexts. And, the goal of darkening cities must be prioritized in relation to other environmental and social urban issues, through processes such as the *complex moral assessment* proposed by Epting (2017). But I assert here that within such decision-making processes the achievement of dark skies should be a *prima facie* consideration in the design of urban nightscapes. Thus, we can take first steps towards articulating the overarching aspirations and constraints that can guide the restoration of urban dark skies. For this task, I return to the sublime.

3.2 In Search of a New (Urban) Nocturnal Sublime

Building on the above moral rationale is a question of what sorts of experiences are sought after with the restoration of urban darkness. As described in Sect. 2, the tension between the natural night sky and artificial illumination can be understood as a clash of sublimities. The astronomical and technological sublimities were identified as two distinctive experiences of the world at night—two types of *nocturnal sublime*. In one, we gaze upwards at the firmament, a quasi-religious experience of the natural world. In the other, we have brought the heavens down around us, supplementing the starry sky for an electrified skyline. Darkening cities, as an act of urban restoration, must explore these competing experiences, and seek to collapse—or at least challenge—their spatial distinction. This requires an acknowledgment of the powerful features that draw people to the night sky, and an exploration into if, and how, this can be brought into cities. In doing so, we can start to envision what exactly we are seeking to restore, and how this could look in practice.

We must be wary, though, not to completely dismiss the value of the technological sublime as outmoded or only see its undesirable effects. The concept of light pollution has two competing effects on understandings and experiences of city nights. In one sense, it re-frames our appraisals and judgments. Lighting’s monumentality and scale is increasingly seen as irresponsible and polluting, no longer marvelous and exciting. Alternatively, we can see light pollution as depreciating the value and experience of nighttime illumination, for skyglow should not be understood as synonymous with the technological sublime. A city encompassed by skyglow is washed out in a haze of light. Nighttime lighting is part of the basic fabric, the essential core, of contemporary cities, but over-illumination degrades its aesthetic value. A backdrop of darkness can enhance the sublimity of electric lighting. Reducing ambient illumination can introduce some

humility to our urban nightscapes, and provide a renewed perspective on the value and beauty of nighttime lighting—not as an artificial extension of day, but as its own unique space. As the architect Peter Zumthor (2010, p. 93) notes,

Between sunset and sunrise, we furnish ourselves with illumination of our own making, lights that we can switch on at will. These lights cannot be compared to daylight; they are too weak and too breathless with their flickering intensities and swiftly spreading shadows. But when I do not think of these lights that we make ourselves as an attempt to eliminate darkness, when I think of them as night-time lights, as accentuated night, as intimate illuminated clearings that we carve out of the darkness, then they can become beautiful, then they can have a magic all their own.

Considered in this way, restoring darker skies can also re-orient and re-energize the excitement and vibrancy of electrical illumination, and imbue it with new symbolic meaning that is complimentary to the environmental value of darkness. In doing so, it can create a new experience of urban nightscapes—not the electrical sublime of the early twentieth century, but a new, environmentally conscious nocturnal sublime.

In considering what aspects of the night sky we wish to capture in cities, we can draw from recent articulations of the sublime in environmental aesthetics. Shapshay (2013) puts forward the idea of the *thick sublime*, arguing for its relevance to contemporary aesthetic appreciations of the environment. This type of experience goes beyond purely emotional, visceral responses (what Shapshay calls the *thin sublime*) to also include an intellectual component. Hence, increasing scientific knowledge—as part of an intellectual, reflective response—does not diminish sublime responses to the night sky. Instead, it can prompt a “more-informed reflection on how infinitesimally small she is in the universe, how short a human lifespan is, and even how brief the human species has walked this planet, in comparison with the spatial and temporal vastness of the night sky” (Shapshay 2013, p. 196). Importantly, such a response involves a reflection on humanity’s position within nature and the larger cosmos. Also worth noting is that Shapshay argues for a “secular, non-metaphysically extravagant” understanding of the sublime in nature (p. 190), seeking to disentangle it from religious or sacred connotations—a criticism raised by Cronon (1995). Shapshay, however, stops short of assigning the thick sublime an explicit moral weight. Although, the engagement described—awe, wonder, and humility in the face of nature—certainly seems to engender, or at least make possible, morally transformative experiences. Indeed, the thick sublime is connected to theories arguing that the aesthetic appreciation of nature should be morally engaged (e.g., Carlson 2010).



Fig. 3 © Thierry Cohen, Paris 48°52'16"N 2012-06-17 LST 17:30, from the *Darkened Cities* series, courtesy Danziger Gallery, New York/ Esther Woerdehoff Gallery, Paris and the Artist (<https://thierrycohen.com/pages/work/starlights.html>)

While somewhat different in theoretical origins, Brady's (2013) *environmental sublime* shares common ground with Shapshay's (2013) idea of the *thick sublime*. Most important for the present discussion is that Brady goes one step further in developing and articulating the relevance of the sublime for environmental ethics. Acknowledging the criticisms raised by Cronon (1995) regarding the sublime's role in socially constructing wilderness, Brady nevertheless sees potential for morally transformative—or at least morally relevant—experiences. Aesthetic experiences can reinforce and cultivate environmental values, although they are not a necessary condition. Of particular relevance for the night sky is the humility generated by sublime experiences. Whether through knowledge of astronomy or direct experience, the night sky engenders a feeling of the ungraspable. And, "In an important sense, aesthetic experience of this kind can bring home some of the ways we cannot place ourselves over and above nature" (Brady 2013, p. 197). We see the smallness of ourselves, and experience something that we cannot place ourselves above or outside.

In sum, the sublime contains the possibility of putting us into contact with the natural world while generating feelings of humility and reverence. While the (natural) sublime can be criticized for reinforcing the otherness of nature, this is not necessarily an intrinsic quality thereof. Rather, the sublime can offer a unique experience and perspective on our relationship with natural environment, creating experiences

relevant, if not fundamental, to an environmental ethic: humility, wonder, respect, etc. (Hitt 1999). It is therefore this facet of the *astronomical sublime* that must be drawn out and incorporated into urban restoration efforts. Cultivating such experiences in urban settings can be understood as an act of breaking down the barrier between urban and wild nightscapes, of creating a new category of nocturnal sublime. This carries exciting potential but requires further work—both conceptually and technically. Envisioning and implementing this will not be an easy task, for it requires designing for things notoriously hard to define. "Beauty and mystery: intangible qualities we all know are valuable but don't always know how to value" (Bogard 2013, p. 254).

We can see both the transformative potential, as well as the tensions, of creating a new urban nocturnal sublime in Thierry Cohen's photo series *Darkened Cities* (Fig. 3). The series features major global cities at night—New York, London, Paris, Tokyo, Hong Kong, Rio de Janeiro, etc.—altered so as to remove all presence of artificial illumination. The cityscapes are then overlaid onto a night sky from a position on Earth around the same latitude with no skyglow (for Fig. 3, the Paris streets are combined with a northern Montana sky). Thus, *Darkened Cities* shows what these spaces could look like if they were lit only by starlight. The images are certainly provocative, and nothing short of sublime. There is a beauty and quietness to these photos, but also a haunting, awe-inspiring

feeling—not least of all because of the juxtaposition of seemingly disparate geographies. It indeed reinforces the observation by Nye (2010) that cities without light now seem somehow unnatural. To see all lighting stripped away, it feels as if something fundamental to the modern city has been removed. The haunting atmosphere of the series, however, is not created solely by the night sky above—these urban sites are also edited so as to remove all signs of human activity. Images of a Shanghai highway without a single car, or downtown Paris without a single person, evoke an almost post-apocalyptic scene (albeit a serene one). It implies that to have a truly dark sky—to be devoid of light pollution, and artificial light in general—cities also need to be devoid of human activity. The night sky is brought back into cities, but at the expense of urban nightlife. In *Darkened Cities*, the geographical dualism of city lights and natural darkness is subverted, but not overcome.

Cohen's photo series is thought provoking, creating scenes both beautiful and haunting, and powerfully communicating the effects of skyglow. And as works of art, not a prescriptive statement, they need not be interpreted as visions of how city nights *should* be. But they do provide a visual counter-position to our cities as they exist, a supplanting of the technological sublime with the astronomical sublime. In doing so, it reminds us that the geographical divide between city nights and dark skies is a construct, and a result of our abundant artificial lighting. The starry night sky is not truly gone, or only *out there*, but temporarily hidden behind our pervasive illumination. In this sense, Cohen's series provides an opposing extreme to our current nightscapes, allowing for a consideration of where on such a spectrum we should strive to situate actual urban nightscapes. It is worth imagining a *Darkened Cities* image with a vibrant, active city below the night sky—a city that does not completely cast out the benefits and aesthetics of electric lighting for a natural night sky, but seeks to merge the two. Certainly not as bright as our current city nights, and perhaps not featuring a pristine, completely *unpolluted* night sky, but a re-oriented urban nightscape nonetheless. This may not allow for the experiences referenced in Nordgren's Milky Way posters (Fig. 2) within downtown cores, but that need not be the final goal for a new urban nocturnal sublime. Instead, it can offer a new relationship between the stars above and the lights below. It allows for a re-imagining of urban nights and all the possibilities that come along with it.

4 Conclusion

This paper has engaged with the contemporary axiological dimensions of nighttime illumination and darkness, focusing on the geographical dualism reinforced by differing manifestations of the sublime. The possibilities of a re-imagined urban nocturnal sublime was put forward as a means to challenge the juxtaposition between urban

and natural nightscapes, as well as give shape to the qualities, constraints, and ideals to strive for in urban nighttime lighting. Importantly, focusing on the impact of artificial lighting technologies emphasizes the control we have over this dualism—nighttime illumination can either re-enforce long-standing connotations of light and dark, or challenge them in a conscientious and morally engaged way. In a narrow sense, this analysis contributes to a growing discourse on the ethics of light pollution and nighttime illumination, examining the aesthetic dimensions of the issue. In a broader sense, it introduces the nightscape as a new site of concern for urban restoration, and urban-focused environmental ethics more generally.

A key theme throughout has been the symbolic resonance of lighting and darkness, and that seeing problems of nighttime lighting solely as a technical issue overlooks key philosophical questions. Addressing light pollution is not exclusively a task of designing efficient lighting with an appropriate level of brightness and properly shielded lighting fixtures. Nor can it be reduced to a task of creating new policies that reduce illumination (or costs) by $x\%$ at night, although all such efforts are undoubtedly important. It is also about seeing darkness differently; about finding new meaning, and ultimately value, in darkness. And as discussed here, the night sky—an experience that is at once beautiful, sublime, and awe-inspiring—can be immensely powerful. It can provide cities with an ecological and cosmological sense of place, and allow residents to glimpse beyond the artificial illumination that now dominates our lives. In doing so, it may allow us to see our cities in a new light.

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Compliance with Ethical Standards

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Research Involving Human and Animal Rights This article does not contain any studies with human participants or animals performed by the author.

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References

- Bogard P (2013) *The end of night: searching for natural darkness in an age of artificial light*. Back Bay Books, New York
- Brady E (2013) *The sublime in modern philosophy: aesthetics, ethics, and nature*. University of Cambridge Press, Cambridge
- Carlson A (2010) Contemporary environmental aesthetics and the requirements of environmentalism. *Environ Value* 19(3):289–314
- Chepesiuk R (2009) Missing the dark: health effects of light pollution. *Environ Health Persp* 117(1):20–27
- Concepto (2012) Lighting master plan of Rennes, France. http://www.concepto.fr/portfolio_page/lighting-master-plan-rennes-france/. Accessed 2 August 2017
- Cronon W (1995) The trouble with wilderness; or, getting back to the wrong nature. In: Cronon W (ed) *Uncommon ground: rethinking the human place in nature*. W.W. Norton & Co., New York
- de-Shalit A (2003) Philosophy gone urban: reflections on urban restoration. *J Soc Philos* 34(1):6–27
- Dewdney C (2004) *Acquainted with the night: excursions through the world after dark*. HarperCollins Publishers Ltd, Toronto
- Dunnett O (2015) Contested landscapes: the moral geographies of light pollution in Britain. *Cult Geogr* 22(4):619–636
- Edensor T (2015) The gloomy city: rethinking the relationship between light and dark. *Urban Stud* 52(3):422–438
- Edensor T (2017) *From light to dark: daylight, illumination, and gloom*. University of Minnesota Press, Minneapolis
- Ekirch R (2005) *At day's close: night in times past*. W.W. Norton & Company, Inc., New York
- Epting S (2016) The moral dimensions of infrastructure. *Sci Eng Ethics* 22(2):435–449
- Epting S (2017) On moral prioritization in environmental ethics: weak anthropocentrism for the city. *Environ Ethics* 39:131–146
- Falchi F, Cinzano P, Duriscoe D et al (2016) The new world atlas of artificial night sky brightness. *Sci Adv* 2(6):1–25
- Galloway T (2014) The value of the night sky. In: Meier J, Hasenöhl U, Krause K, Pottharst M (eds) *Urban lighting, light pollution and society*. Taylor & Francis, New York
- Galloway T, Olsen R, Mitchell D (2010) The economics of global light pollution. *Ecol Econ* 69:658–665
- Gaston G, Gaston S, Bennie J, Hopkins J (2015) Benefits and costs of artificial nighttime lighting of the environment. *Environ Rev* 23:14–23
- Hasenöhl U (2014) Lighting conflicts from a historical perspective. In: Meier J, Hasenöhl U, Krause K, Pottharst M (eds) *Urban lighting, light pollution and society*. Taylor & Francis, New York
- Henderson D (2010) Valuing the stars: on the economics of light pollution. *Environ Philos* 7(2):17–26
- Hepburn R (2010) The aesthetics of sky and space. *Environ Value* 19(3):273–288
- Hitt C (1999) Toward an ecological sublime. *New Lit Hist* 30:603–623
- Hölker F, Moss T, Griefahn B et al (2010) The dark side of light: a trans-disciplinary research agenda for light pollution policy. *Ecol Soc* 15(4). <http://www.ecologyandsociety.org/vol15/iss4/art13/>
- IDA (2016) International dark-sky association—who we are. <http://www.darksky.org/about/>. Accessed 12 July 2017
- IDA-IES (2011) *Model lighting ordinance (MLO) with user's guide*. International Dark-Sky Association, Tucson
- Kant I (1987 [1790]) *Critique of judgment* (trans: Puhar W). Hackett Publishing Company, Indianapolis
- Katz E (2003) The big lie: human restoration of nature. In: Light A, Rolston III H (eds) *Environmental ethics: an anthology*. Blackwell Publishing Ltd, Oxford
- Kessler E (2012) *Picturing the cosmos: hubble space telescope images and the astronomical sublime*. University of Minnesota Press, Minneapolis
- King R (2000) Environmental ethics and the built environment. *Environ Ethics* 22:115–131
- Kirchhoff T, Vicenzotti V (2014) A historical and systematic survey of European perceptions of wilderness. *Environ Value* 23(4):443–464
- Light A (2001) The urban blind spot in environmental ethics. *Environ Polit* 10(1):7–35
- Light A (2003) Ecological restoration and the culture of nature: a pragmatic perspective. In: Light A, Rolston III H (eds) *Environmental ethics: an anthology*. Blackwell Publishing Ltd, Oxford
- Longcore T, Rich C (2004) Ecological light pollution. *Front Ecol Environ* 2(4):191–198
- Lowe C, Rafael P (2011) Light design—the dark art. *Prof Light Des* 79:24–29
- Lowe C, Rafael P (2014) The dark art Manifesto. *Prof Light Des* 91:64–65
- Meier J (2014) Designating dark sky areas: actors and interests. In: Meier J, Hasenöhl U, Krause K, Pottharst M (eds) *Urban lighting, light pollution and society*. Taylor & Francis, New York
- Narboni R (2017) *Imagining the future of the city at night*. Architectural lighting, February 15: http://www.archlighting.com/projects/imagining-the-future-of-the-city-at-night_o
- Nye D (1990) *Electrifying America: social meanings of a new technology, 1880–1940*. MIT Press, Cambridge
- Nye D (1994) *American technological sublime*. MIT Press, Cambridge
- Nye D (2010) *When the lights went out: a history of blackouts in America*. MIT Press, Cambridge
- Park D (1997) *The fire within the eye: a historical essay on the nature and meaning of light*. Princeton University Press, Princeton
- Pottharst M, Könecke B (2013) The night and its loss. In: Henckel D, Thomaier S, Könecke B et al (eds) *Space-time design of the public city, urban and landscape perspectives*. Springer, Dordrecht
- Pritchard S (2017) The trouble with darkness: NASA's Suomi satellite images of earth at night. *Environ Hist* 22:312–330
- Schivelbusch W (1988) *Disenchanted night: the industrialization of light in the nineteenth century* (trans: Davis A). University of California Press, London
- Schlör J (1998) *Nights in the big city: Paris, Berlin, London 1840–1930* (trans: Imhof P, Roberts D). Reaktion Books, London
- Schrijver L (2015) Design for values in architecture. In: van den Hoven J, Vermaas P, van de Poel I (eds) *Handbook of ethics, values, and technological design*. Springer, Dordrecht
- Shapshay S (2013) Contemporary environmental aesthetics and the neglect of the sublime. *Brit J Aesthet* 53(2):181–198
- Sharpe W (2008) *New York nocturne: the city after dark in literature, painting, and photography, 1850–1950*. Princeton University Press, Princeton
- Starlight Initiative (2007) Declaration in defence of the night sky and the right to starlight. La Palma Biosphere Reserve: <http://www.starlight2007.net/pdf/StarlightDeclarationEN.pdf>. Accessed 15 January 2015
- Stefanovic I (2012) In search of the natural city. In: Stefanovic I, Scharper S (eds) *The natural city: re-envisioning the built environment*. University of Toronto Press, Toronto
- Stevenson RL (2014 [1881]) A Plea for Gas Lamps. In: *Virginibus Puerisque, and other papers*. Available via The University of Adelaide. https://ebooks.adelaide.edu.au/s/stevenson/robert_louis/s848v1/chapter12.html. Accessed 10 July 2017
- Stone T (2018) The value of darkness: a moral framework for urban nighttime lighting. *Sci Eng Ethics* 24(2):607–628
- Verbeek P-P (2011) *Moralizing technology: understanding and designing the morality of things*. University of Chicago Press, Chicago
- Winner L (1980) Do artifacts have politics? *Daedalus* 109(1):121–136
- Zajonc A (1993) *Catching the light: the entwined history of light and mind*. Oxford University Press, New York
- Zumthor P (2010) *Thinking architecture*, 3rd edn. Birkhauser, Basel