

In Defense of Darkness

By P.G.

In the conversation about preserving our dark night skies, we often focus on the harmful effects of light pollution. But what about discussing the benefits of maintaining natural darkness? In his paper, “The Value of Darkness: A Moral Framework for Urban Nighttime Lighting,” Dr. Taylor Stone, a lecturer and postdoctoral researcher in the ethics of technology at Delft University of Technology, analyses the discussion of light pollution through an alternative lens, one that talks about the benefits offered by darkness, specifically by reframing environmental criticisms of light pollution as positives of darkness.

One of Dr. Stone’s first suggestions for shifting the discussion is to reintroduce common criticisms of light pollution as arguments for preserving natural darkness instead, so that efforts to address the issue will not only focus on decreasing light pollution but also on re-introducing natural darkness to urban settings as well. For example, in the negative health effects of light pollution are often brought up in conversations about dark sky preservation. According to recent research, certain types of light pollution can even be carcinogenic. “[Controlled] laboratory studies show that exposure to light during the night can disrupt circadian and neuroendocrine physiology, thereby accelerating tumor growth.” (Chepesiuk, 2009). Stone suggests that the argument of the health benefits of darkness be used when this is discussed as well, namely that darkness can be viewed in this context as beneficial for personal health as it reduces the exposure to these carcinogens. As such, he defines nine values of darkness to frame the conversation

around: efficiency, sustainability, ecology, healthiness, happiness, connection to nature, stellar visibility, heritage and traditions, and lastly, wonder and beauty.

In trying to construct his framework, Stone creates a tree-like structure to organize his 9 defined values. Stone characterizes these pro-darkness reframed values into three broad categories: type of good, temporal characteristics, and spacial characteristics. Within type of good, arguments can be characterized as inherent good, meaning that darkness is a characteristic desired of the end goal, or instrumental good, meaning that darkness is instrumental to achieving the goal of darker night skies. Temporal characteristics can be broken into the subcategories present-oriented, as in immediate benefits of increased darkness (such as the immediate well-being benefits), imperative, meaning these values have immediate and ongoing importance and must be addressed, and future-oriented, referring to actions that have more long-term effects. Lastly, spacial characteristics are broken down into terrestrial, referring to localized environmental conditions, and atmospheric, referring to the dark skies themselves. In defining these categories, Stone creates a framework for the darkness values to be organized and evaluated, creating a way for those addressing the issue of light pollution in their communities to derive a moral obligation from each value to incorporate into their design and policy decisions.

Stone demonstrates how this new moral framework can change decision making conversations with the example of LED street lighting. Through the lens of the framework, it is clear that using brighter, white LED streetlights would have negative impacts on the long-term benefits of the dark despite appearing to save money and energy in the short term. “Astronomers know that blue-rich lighting scatters more in the atmosphere (Rayleigh scattering) and thus contributes to undesirable sky glow, which is also reflected in the scientific literature [26–28]” (Schulte-Römer, 2019).

In his novel analysis of the discussion around the preservation of dark night skies, Dr. Stone defines a moral framework specifically around the values of darkness as a means of providing an alternative viewpoint in the discussion of ways to handle light pollution. His framework serves as a valuable tool for policy makers and dark sky activists to design their actions around a moral obligation based on valuing natural darkness as opposed to sheerly attempting to decrease light pollution, and will hopefully encourage the movement for saving the night sky to consciously attempt to preserve darkness in the future.

Stone, T. The Value of Darkness: A Moral Framework for Urban Nighttime Lighting. *Sci Eng Ethics* **24**, 607–628 (2018). <https://doi.org/10.1007/s11948-017-9924-0>

Chepesiuk R. Missing the dark: health effects of light pollution. *Environ Health Perspect.* 2009;117(1): A20-A27. doi:10.1289/ehp.117-a20

Schulte-Römer, Nona & Meier, Josiane & Söding, Max & Dannemann, Etta. (2019). The LED Paradox: How Light Pollution Challenges Experts to Reconsider Sustainable Lighting. *Sustainability*. 11. 6160. 10.3390/su11216160.