



**DESIGN
KNOWLEDGE**
*in the Era of
Environmental
Collapse*

*Theme Issue of She Ji,
Call for Submissions*

Guest editors: Stanislav Roudavski, Paul Walker¹

Synopsis

This issue of *She Ji: The Journal of Design, Economics, and Innovation* seeks to question the capacity of design to specify preferred future states in the conditions of environmental collapse.

The acute environmental crisis is the primary problem of the future. The pervasive exploitation of the environment leads to severe degradation of habitats, unprecedented levels of animal suffering,² mass species extinction³ and the collapse of multiple ecosystems.⁴ Human activities expand beyond the safe operating space for planetary systems.⁵ Disregard for these boundaries poses global existential risks.⁶

The challenge of addressing the environmental crisis requires innovative approaches that go beyond mitigation of harm. These approaches will have to produce novel techno-social orders able to emancipate all types of nonhuman life, including animals and plants. Beyond life, future societies will have to value the agency of abiotic environments. The resulting orders should and can take the form of shared, more-than-human cultures and practices. Who can specify and bring forth such unfamiliar futures?

Design disciplines claim the possession of unique knowledge practices for making, and implementing, successful plans.⁷ Such practical orientation can be very effective. For example, seeking to save money and energy, designers introduce outdoor LED lighting. LED lights are brighter and bluer than sodium and other lights. Unfortunately, their intensity and colour

dramatically increase harmful environmental light pollution, a significant problem even before the development of LED technology. This type of adverse consequence is very common. Designers do not intend to cause harm, but their anthropocentric bias is hugely damaging. Evidence and analysis remain underused. Instead, designers prioritise technocratic approaches, overrate human ingenuity and overvalue human traditions. The anthropocentric bias underpins unjustifiable worldviews and motivates attitudes that might change on deeper consideration. The problem of light pollution is particularly vexing because it pits human preference for constant brightness against the nocturnal lifestyles of many organisms. If those organisms had a say in the design process, the negotiated outcomes would have to be different.

To be relevant to the challenges of the future, design knowledge needs to engage with more-than-human concerns. Some approaches that aim to incorporate nonhuman issues are already emerging in multiple fields that consider issues in environmental⁸ and ecological⁹ justice. They include biocentric¹⁰, ecocentric¹¹, geocentric¹² and land¹³ ethics, astroethics,¹⁴ animal rights¹⁵ and the ethics of care.¹⁶

This issue aims to interrogate possible forms and implications of post-anthropocentric design knowledge. To this end, it invites evidence-driven research articles that engage with the full range of conceptual, scientific, political, social, economic, and technical aspects of design. The analytical frames can be historical, contemporary, or future-oriented. The editors hope to extend the conversation beyond the confines of professional or academic design-communities. Therefore, they welcome contributions from a broad range of disciplines.

¹ The cover image shows artificial habitats by Darren Le Roux et al., Australian Capital Territory

² Andy Butterworth, ed., *Animal Welfare in a Changing World* (Wallingford: CABI, 2018).

³ Gerardo Ceballos, Paul R. Ehrlich, and Rodolfo Dirzo, "Biological Annihilation via the Ongoing Sixth Mass Extinction Signaled by Vertebrate Population Losses and Declines," *Proceedings of the National Academy of Sciences* 114, no. 30 (July 25, 2017): E6089–96, <https://doi.org/10/cbvk>.

⁴ Rebecca M. B. Harris et al., "Biological Responses to the Press and Pulse of Climate Trends and Extreme Events," *Nature Climate Change* 8, no. 7 (July 2018): 579, <https://doi.org/10/gdq7vt>.

⁵ Johan Rockström et al., "Planetary Boundaries: Exploring the Safe Operating Space for Humanity," *Ecology and Society* 14, no. 2 (2009), <https://doi.org/10/gd53h4>.

⁶ David Wallace-Wells, *The Uninhabitable Earth: Life After Warming* (New York: Tim Duggan Books, 2019).

⁷ Charles L. Owen, "Design Thinking: Notes on Its Nature and Use," *Design Research Quarterly* 2, no. 1 (2007): 16–27; Charles L. Owen, "Design Research: Building the Knowledge Base," *Design Studies* 19, no. 1 (1998): 9–20, <https://doi.org/10/b2z5qm>.

⁸ David Schlosberg, *Defining Environmental Justice: Theories, Movements, and Nature* (Oxford: Oxford University Press, 2007).

⁹ Brian Baxter, *A Theory of Ecological Justice* (London: Routledge, 2005).

¹⁰ Paul W. Taylor, *Respect for Nature: A Theory of Environment Ethics*, 25th anniversary (1986; repr., Princeton, US: Princeton University Press, 1983).

¹¹ Holmes Rolston, *A New Environmental Ethics: The Next Millennium for Life on Earth* (New York: Routledge, 2012).

¹² Max Wyss and Silvia Peppoloni, eds., *Geoethics: Ethical Challenges and Case Studies in Earth Sciences* (Amsterdam: Elsevier, 2015).

¹³ Baird J. Callicott, *Thinking Like a Planet: The Land Ethic and the Earth Ethic* (New York: Oxford University Press, 2014).

¹⁴ Chris Impey, Anna H. Spitz, and William R. Stoeger, eds., *Encountering Life in the Universe: Ethical Foundations and Social Implications of Astrobiology* (Tucson: University of Arizona Press, 2013).

¹⁵ Sue Donaldson and Will Kymlicka, *Zoopolis: A Political Theory of Animal Rights* (New York: Oxford University Press, 2011).

¹⁶ María Puig de la Bellacasa, ed., *Matters of Care: Speculative Ethics in More Than Human Worlds*, *Posthumanities* 41 (Minneapolis: University of Minnesota Press, 2017).

All forms of research that consider possible futures are welcome, including:

- all design disciplines;
- philosophy of science, engineering, information and computing;
- environmental history;
- environmental ethics and ethics of technology;
- social and cultural studies of science, design and crafts practices;
- science, including biology and ecology;
- law and political studies;
- environmental humanities, including animal and plant studies;
- and others.

The guest editors encourage authors to engage with the following questions:

1. **What will design knowledge be in the future?** Is there a body of design knowledge distinct from the types of learning that are produced by humanities and sciences? Can the authors propose a possible definition? How does the inherently indeterminate character of complex systems frame the concept of design knowledge? Can future design combine everyday knowledge and traditional forms of human expertise with non-human knowhow?
2. **Which approaches will produce design knowledge?** Does the production of design knowledge require distinct practices or research methods? What are the mechanisms of design-knowledge production? What approaches should be used to evaluate effectiveness of such knowledge? What regulation and funding should support the production and deployment of design knowledge? How should the acquisition of design knowledge respond to the more-than-human ethics of the future?
3. **Who or what will produce design knowledge?** Who are the typical knowledge workers in design research? What training do they require? What are their goals? Can – or should – existing design stakeholders seek to reconfigure and expand design-knowledge communities and partnerships? Can nonhuman actors produce design knowledge?

4. **What will be the sites of design-knowledge production?** Can design knowledge be produced outside of the disciplines, professions, and organizations of those who have the specific task of working with design in current economies? Should more individuals work with knowledge production in design than those who work with it today? Should the situations and time frames that produce design knowledge today shift to match the complex characteristics of interlinked and continuous planetary environments?
5. **Which approaches can support transmission and preservation of design knowledge?** Is it possible to accrue design knowledge in a reliable, cumulative way? What conditions does this require? What artefacts, evidence, and storage mechanisms can support such processes? How should future designers encourage rigor, replicability, and reuse?
6. **Who will use design knowledge?** Who consumes and pays for design knowledge? Who commissions this knowledge production and who stands to benefit? How do local, political, historical, and cultural circumstances affect the application of design knowledge? How should education or regulation direct the future use of design knowledge?
7. **How will design knowledge be useful?** What is the value of design knowledge? What are the mechanisms of quality assurance? Where is it used? What are the possible roles of design knowledge in future decision making?

The editorial team sees this topic as a substantial and ongoing challenge. Consequently, it plans to invite contributors to participate in an edited book collection and a long-term collaborative research project that will follow this issue of *She Ji*.

About *She Ji*

She Ji is a fully open-access journal published by Tongji University and Tongji University Press in cooperation with Elsevier. The journal is fully peer reviewed. *She Ji* charges no publication fees.

She Ji encourages rich illustration. There is no limit on the number of images, charts, or diagrams in any article, and no limit on the use of colour. While we publish a small, high quality paper edition for authors and for

exhibitions, most *She Ji* readers download articles direct from the journal web site. This makes it possible for *She Ji* authors to use as many images as an article requires.

For the complete description, see the [publisher's website](#).

Schedule

February 25, 2019: Call for proposals

- up to 300 words, excluding references
- proposals are optional, but the editors encourage them as a way to open a dialog with the authors
- suggested structure of the proposals:
 - gap in current knowledge
 - research questions
 - hypotheses
 - research methods
 - research outcomes
 - discussion of the outcomes
 - future work
- submit via the email to: stanislav.roudavski@cantab.net

March 31, 2019: Proposals due

April 30, 2019: Feedback to authors

September 1, 2019: Full articles due

- 6,000-8,000 words (excluding footnotes, references, and captions)
- it is permissible to submit an article without having previously submitted a proposal
- submit via the journal's [web page](#)

November 1, 2019: Feedback to authors

January 31, 2020: Amendments due

April 30, 2020: Feedback to authors and final selection

September 1, 2020: Publication

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