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## Two-Eyed Seeing in Design Science: Towards Decolonizing the Use of Kernel Theories

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# Two-Eyed Seeing in Design Science: Towards Decolonizing the Use of Kernel Theories

TREO Talk Paper

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## Abstract

Design science research focuses on developing artifacts to solve practical problems in our society and, through this process, creates new knowledge. Over the years, the paradigm has evolved, and greater emphasis is placed on justificatory knowledge – the underlying knowledge that gives a basis and explanation for the designed artifact (Gregor and Jones, 2007). Justificatory knowledge can be used *ex-ante* to guide how artifacts are designed or developed *ex-post* to help explain how a designed artifact works. When drawn upon to guide design, IS researchers often turn to formalized theories outside of the discipline and adapt them to serve their purpose. These formalized theories are known as kernel theories.

Kernel theories have been used to advance the rigor and relevance of design science research; however, they have predominantly originated from Western worldviews, and resulting information technology (IT) artifacts have been developed for modern colonial societies. This approach discriminates against and excludes marginalized groups, including Indigenous Peoples. While Indigenous Peoples may use IT artifacts in a similar manner to non-indigenous peoples, how they conceptualize and interact with an IT artifact may be very different (Osei-Bryson and Bailey, 2019). Kernel theories anchored in Western worldviews are not necessarily relevant for Indigenous Peoples; thus, we must work to decolonize our approaches to design science.

In this TREO, we propose drawing on the Indigenous Mi'kmaq principle of Two-Eyed Seeing to inform kernel theory selection and integration in design science research. Two-Eyed Seeing encourages us to view the world through Indigenous knowledge and ways of knowing with one 'eye' and Western knowledge and ways of knowing with the other 'eye' (Bartlett et al., 2012) – leading to a multi-perspective approach. Informed by this principle, design science practitioners should also consider and appreciate the value that Indigenous knowledge can bring as a kernel theory for IT artifacts. To move forward in this direction, design science practitioners will need to:

1. understand how to appropriately integrate Indigenous knowledge in systems design, including working with modes of knowledge representation like stories in design science research; and
2. explore the normalization of representing prescriptive knowledge for designing IT artifacts (e.g., design principles) in a form that is meaningful for Indigenous Peoples – like storytelling.

Embracing Two-Eyed Seeing in design science research and kernel theory selection will allow researchers to benefit from the richness of both Indigenous and Western worldviews and knowledge bases and, ultimately, build better and more inclusive solutions to complex problems.

## References

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