

# A systems theoretical synthesis for cybersecurity

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## **Abstract**

By deconstructing fundamental cybersecurity principles and rendering them into a foundational systems theoretical platform so that a common transdisciplinary lexicon can be applied, this essay develops a framework that seeks to consolidate the principles and frameworks of cybersecurity into just one conceptual framework. This effort rests on a handful of core systems theoretical constructs like those of the system, the environment, the boundary, positive and negative feedback. By taking a systems approach that was the outcome of a scientific transdisciplinary effort, we seek to develop a unification umbrella from this familiar family of concepts within IS research and allow scholarly cybersecurity work to find a common platform, regardless of whether it has a technical, behavioural or compliance orientation. We present systems theoretical principles for the consolidation of cybersecurity principles and create a comprehensive framework that depicts the cybersecurity of an organisation as a complex and open sociotechnical system that is observer-sensitive.

Keywords: systems theory, information systems security