

Cybernetic frameworks for a shared world

This special issue presents seven articles developed from contributions to the 2018 conference of the American Society for Cybernetics (ASC), which took place during 7–12 August in Chicago, IL. The conference theme “Framing Reality and How It Matters in a Shared World” aimed to encourage presenters to consider how the world we share on a daily basis is socially constructed from diverse concurrently developing viewpoints and narratives.

The conference theme illustrates the importance of recognizing and navigating within diverging and often conflicting narratives:

We each frame how we look at the world in conjunction with our assumptions, tools, models, and narratives. These frames, in turn, affect what we perceive to be our available actions ([American Society for Cybernetics, 2018](#)).

With every individual and every community creating and embracing different frameworks and narratives, what we recognize as “reality” is inevitably diverse. Narratives in turn influence what we pay attention to and how we choose to act. In the face of such diverse claims to what is seen to constitute “reality”, “we must recognize the subjectivity of our framing and learn to interrogate it. Because every individual frames her reality differently, some narratives are contradictory”.

Presentations at the conference discussed how, from a cybernetic perspective, the differences arising from such diverging narratives offer potential for variety and innovation rather than conflict. Becoming aware of and accommodating narratives beyond our individual selective viewpoints allows us to expand our horizons and can lead to new insights. This applies not only to personal narratives but also to disciplinary perspectives and methods of inquiry, affecting the ability of communities of scholars to interact. The conference theme implicitly also challenged conference participants to examine their own cybernetic narratives when encountering other narratives. The papers collected in this volume show cybernetics in dialogue with diverse fields which introduce their own narratives.

The phrase “framing reality” in the conference theme refers to the constructivist premise at the heart of cybernetic epistemology while “how it matters in a shared world” points to the cybernetic emphasis on the ethical domain of our knowing and living. From a radical constructivist perspective, one’s reality is constructed from how one makes sense of their experiences, not from discovering an objective ontological reality ([Glaserfeld, 1984](#)). This perspective not only empowers us to act in the world of our experiences and to pursue self-chosen goals but also draws attention to the ethical dimension of making choices and pursuing goals. As we construct meanings, we are responsible for them and must also respect this responsibility in others ([Glanville, 1996](#)).

A cybernetic perspective emphasizes the process of navigating the world one encounters by making choices and acting on them while constantly considering perspectives of self and other, in turn provoking new experiences and new insights. Constructivist epistemology casts these cyclical processes as instances of learning: When experience diverges from initial expectations, individuals are likely to re-examine and change their models of the world, adding new aspects to it and expanding our horizons. Ranulph Glanville explained this process of creating and constantly expanding our worlds with the metaphor of the *grabbing hands universe*:



Any universe should contain everything that it needs to contain, yet must be seen from outside if this is to be appreciated. (Otherwise how can you see it contains everything!) Then the view from outside, that the universe does indeed contain everything it should, should be within the universe, for “contains everything it should” is a property of it being that universe! I proposed that the boundaries of universes should be seen as having metaphorical hands on them, constantly grabbing that which was outside but should be inside, placing it within the confines of the said universe. Thus, the universe is in a state of constant expansion: that which had been outside being absorbed – leaving the outside bare, awaiting another external view (then to be absorbed in turn): variety constantly increasing. (Glanville, 2009, p. 122)

Examining our acting in this generous and open-minded manner forms part of a cybernetic engagement with the world, where diverging perspectives, such as those of science and design, can be understood as a fertile ground for new insights through the lens of cybernetics.

In this transdisciplinary spirit, the conference brought together cyberneticians from a variety of fields, which is reflected in the thematic breadth of contributions to this issue.

Inspired by previous work in family therapy research that involves taking account of one’s own epistemological grounding, Baron (2020) shows how this strategy can be used to achieve greater rigor within religious studies by explicitly accounting for one’s own narrative while doing research. The observer dependence recognized in second-order cybernetics thus provides a new basis for addressing the critique of epistemologically weak research methodology in that field.

In his development of an operative Ashby Box, Cretu (2020) engages both the problem of cognition and the core premise of second-order cybernetics – namely, the limited perspective of the observer. Cretu demonstrates the significant and unexplored potential of the cybernetic paradigm by showing how the Ashby Box – a quintessential embodiment of cybernetic thinking – is ideally suited as “a model of an environment for an artificial brain”.

Fischer’s (2020) historical account of past NASA narratives from the perspective of contemporary design cybernetics shows how design innovation narratives impact our understanding of the role of success, failure and control. Fischer finds that while the popular narrative of NASA’s lunar program emphasizes the control- and goal-oriented concepts and principles associated with first-order cybernetics, the serendipity and error that are features of second-order cybernetics have been equally important. Fischer’s article extends recent discourse on design cybernetics (Fischer and Herr, 2019) to provide an alternate perspective on arenas that are more often associated with engineering paradigms.

Herr (2020) pursues a related agenda in the context of collaborations between architects and structural engineers. Herr develops design cybernetics as a common ground for creating narratives shared between these disciplines, starting from early disciplinary education. This approach takes inspiration from the origins of cybernetics as a transdisciplinary field capable of creating new vocabulary allowing different disciplines to create new ways of exchanging and developing ideas.

Lombardi (2020) addresses cybernetics within the domain of individuals rather than that of disciplines. Building on a panel discussion about Herbert Brün that she participated in at the conference, Lombardi explores Brün’s critical use of language for social change, drawing on the rich resources of her video ethnography work. Written in a distinct style that echoes that of Brün, Lombardi’s article positions cybernetics as “a radical transdisciplinary approach for articulating, composing, and designing alternatives to common sense erroneous ideas that are literally killing us”.

Tatiana Medvedeva’s article explores differences at the root of Russians’ and the West’s views of science, exemplified by diverging theories of evolution. Medvedeva (2020) describes

how Russian theories, which show that social and biological survival are dependent on systemic cooperation, find a common conceptual language in cybernetics. Medvedeva shows how the philosophical underpinnings of Russian science fostered systemic thinking and can contribute to a new framework for mutual understanding among all scholars and countries today.

Scholte's (2020) article takes its point of departure from the edited volume *New Horizons for Second-Order Cybernetics*, edited by Alexander Riegler, Karl Müller and Stuart Umpleby (Riegler *et al.*, 2017). Scholte contends that second-order cybernetics is undermined or limited when its role is framed "as providing some value added to a separate existing domain". Understanding its purpose as explaining the observer to themselves, Scholte argues that second-order cybernetics can be extended through arts-based inquiry. Therefore, he does not *combine* second-order cybernetics with his domain of practice, the arts, neither does he promote it *for* the arts. Instead, using the examples of Enactive Management and Conflict Theatre, he demonstrates how arts-based narrative inquiry may serve as a robust methodology to further develop how second-order cybernetics can be understood and practiced.

Westermann (2020) phrases the responsibility of actors engaged in encounters involving diverging viewpoints as being "radically open to allow for the agency of others. It is in this openness that ethical principles are realized". She examines how a constructivist epistemological stance implies an inventiveness that ethically orients us toward creating possibilities, while the objectivist perspective found in the physical sciences implies an orientation toward discovery of a presumed external reality for the purpose of prediction.

Following the conference, authors were invited to submit updated paper proposals for comments from the editors, taking into account the discussions and debate at the conference. Final paper drafts were then developed and submitted to a rigorous double-blind peer review process. In addition to the papers presented here, further iterations of the ongoing conversation initiated by the conference have been published in the ASC Pages column of *Cybernetics and Human Knowing* (Gillepsie, 2019; Nizami, 2019; Snelson, 2019).

In concluding this introduction to the special issue, we express our gratefulness to the paper authors as well as the peer reviewers for their contributions to this issue. Special thanks are due to Sallie Gregson and Igor Perko for their guidance and generosity in supporting the publication process. We encourage readers to respond to the papers in this issue actively, by seeking exchange and discussion with the authors in a cybernetic spirit of constructive discussion.

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