



HAL
open science

The Complexity Triad and two+ systemic models of IDS/N

Noam Knoller

► **To cite this version:**

| Noam Knoller. The Complexity Triad and two+ systemic models of IDS/N. 2020. hal-02530421

HAL Id: hal-02530421

<https://hal.science/hal-02530421v1>

Preprint submitted on 2 Apr 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Copyright

The Complexity Triad and two+ systemic models of IDS/N

Noam Knoller

The Complexity Triad

During our initial meeting in Vienna, I proposed a high-level model to describe the link between interactive narrative and complexity, called the Complexity Triad. The components of the triad are:

- (A) Environmental (real or fictional world) complexity;
- (B) a mediated representation of (A) in an interactive narrative system, and;
- (C) the internal model that the user(s) maintain(s) of (A), based on (B).

Between these components there are additional processes, which may be scaffolded by additional media technologies.

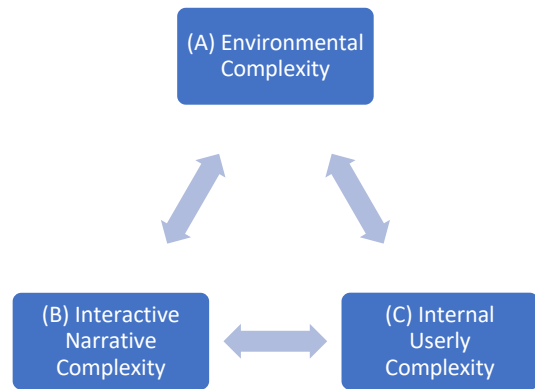


Figure 1: The Complexity Triad

To create an interactive narrative system, there may be a process of modelling of the environmental complexity (which involves a reduction of “noisy” information) and shaping it into (interactive) narrative form. This typically requires authoring technology, which supports not only the (iterative) production of the interactive narrative system, but also the creative thought processes of the author(s). Modelling complexity – as the late Kevin M. Brooks taught our community some 25 years ago – may be too complex to achieve without authoring tools).

The next stage of the process occurs during the interactive storytelling event or experience, as users interact with the system. This interaction process is itself – in principle – structured and scripted by the possibilities designed into the interactive narrative system. Thus, authoring an interactive narrative system involves not merely the design of a complex representation of environmental complexity (component A), but also the design of the process of interactive reception (the potential interaction processes that may occur between B and C). During interaction, in a process I call the *hermeneutic spiral* (Knoller 2019), users interact with the narrative system and begin to construct and update the internal representation C. This internal representation is organised as a *narrative schema*, which I take to be an extension of David Herman’s narrative frame, with embodied cognitive scripts thrown in.

Models

In my author centric “Userly Text” model (Knoller 2012, Knoller and Ben Arie 2015, Knoller 2019), I distinguish between two “representations”: the representation of a world is the *Encoded Storyworld*, and the representation of the interaction processes is the *Interaction model*.

Note that this is a model of IDS in which narrative organisation is but one option, one *Discursive Strategy*. This accounts, for

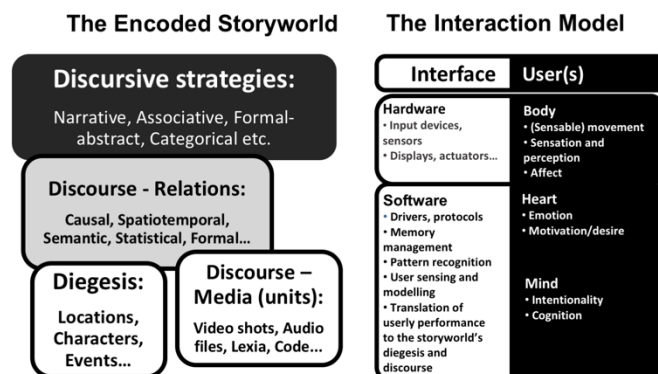


Figure 2: The Userly Text (from Knoller 2019)

example, for argumentative/rhetorical systems such as Vox Populi (Bocconi and Nack, 2004). Discursive strategies are similar to David Bordwell's film narratological concept of "Formal System" (Bordwell and Thompson 1997).

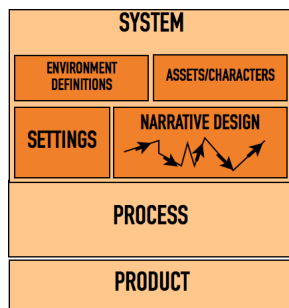


Figure 3: The original SPP model, adapted from from Koenitz' ICIDS 2016 presentation slides

Finally, another triad in our field is Hartmut Koenitz' SPP model (System, Process, Product) of IDN (Koenitz 2010, 2015). This model (figure 3) is influenced by Norbert Wiener's first-generation cybernetics and Roy Ascott's 1960's Cybernetic Art Theory. Koenitz describes IDN works as a triad of system (dynamic digital artefact), process (participatory engagement) and product (recorded output). The system element is a prototype of potential narratives, including a *Narrative Design* which is the concrete structure, *Narrative Vectors* which are a systemic equivalent of plot points, as well as *settings*, *environment definitions*, and *assets*.

A 2016 version of SPP, or SPP+ (Figure 4), attempts to synthesise it with the high-level components of the Userly Text model (cf. Koenitz et al. 2016). The system component is conceived here as a protostory – a prototype of potential narratives – equivalent to the Userly Text's *encoded storyworld*. One of its specific constituent elements is the *protoprocess*, a prototype of potential *processes*, or *userly performances* (Knoller 2012, 2019), an equivalent of the Userly Text's *interaction model*. The product is now conceived not as a specifically recorded output, but as a story. The story may be the recorded output, but can it perhaps also be component C of the complexity triad, i.e. an internal representation, an embodied, inactive narrative schema?

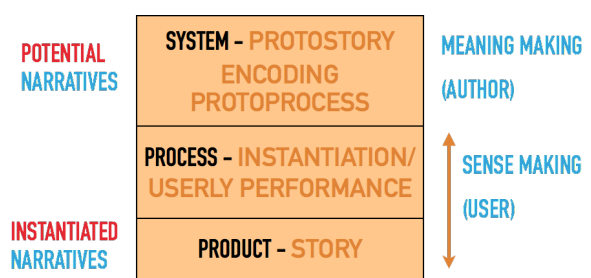


Figure 4: SPP+, from Koenitz' ICIDS 2016 presentation slides

References

- Bocconi, Stefano, and Frank Nack. 2004. "Automatic generation of biased video sequences." In *Proceedings of the 1st ACM workshop on Story representation, mechanism and context*, edited by Kevin M. Brooks and Barbara Barry, 9-16. New York: ACM.
- Bordwell, David, and Kristine Thompson. 1997. *Film Art - An Introduction*. 5th. New York, NY: McGraw Hill.
- Knoller, Noam. 2012. "The Expressive Space of IDS-as-Art." In *International Conference on Interactive Digital Storytelling*, 30-41. Berlin & Heidelberg: Springer.
- Knoller, Noam, and Udi Ben-Arie. 2015. "The Holodeck is All Around US - Interface Dispositifs in Interactive Digital Storytelling." In *Interactive Digital Narrative - History, Theory and Practice*, edited by Hartmut Koenitz, Gabriele Ferri, Mads Haahr, Diğdem Sezen and Tonguç İbrahim Sezen, 51-66. New York and London: Routledge.
- Knoller, Noam. 2019. "Complexity and the Userly Text." In *Narrative Complexity: Cognition, Embodiment, Evolution*, by Marina Grishakova and Maria Poulaki, edited by Marina Grishakova and Maria Poulaki, 98-120. Lincoln: Nebraska University Press.
- Koenitz, Hartmut. "Towards a theoretical framework for interactive digital narrative." In *Joint International Conference on Interactive Digital Storytelling*, pp. 176-185. Springer, Berlin, Heidelberg, 2010.
- Koenitz, Hartmut. 2015. "Towards a Specific Theory of Interactive Digital Narrative." In *Interactive Digital Narrative - History, Theory and Practice*, edited by Hartmut Koenitz, Gabriele Ferri, Mads Haahr, Diğdem Sezen and Tonguç İbrahim Sezen, 91-105. New York and London: Routledge.
- Koenitz, Hartmut, Teun Dubbleman, Noam Knoller, and Christian Roth. 2016. "An Integrated and Iterative Research Direction for Interactive Digital Narrative." In *Interactive Storytelling 2016*, edited by Frank Nack and Gordon S. Gordon, 51-60. Springer