Faculty of Design

2016

A library of systemic relations
Sevaldson, Birger

Suggested citation:
A library of Systemic Relations

Birger Sevaldson
www.systemsorienteddesign.net

Presentation

RSD5 Symposium

Systemic Design for Social Complexity

Relating Systems Thinking and Design (RSD5) Symposium
OCAD University  Toronto, Canada  October 13-15, 2016
SOD

Systems Oriented Design (SOD) is a dialect in the emerging field of Systemic Design. It is maybe the most designerly and practice oriented approach.

The red blurry dot in the diagram below shows SOD being off center, closer to design and closer to practice.

(Birger Sevaldson 2013)
There are many resources on www.systemsorienteddesign.net

The Library of Systemic Relations and other concepts, tools and approaches are found there.

(Birger Sevaldson 2006- )
Praxiology in the sense I use it has its main references in practice.
Externalised practice knowledge.
Combination of theories of practice, experience, skills, tacit and explicit.
The expressed competence how to go about things in the world.

Phronesis: Practical wisdom. The ability and intellect to act in the world.
Praxiology example

Comparing the conceptions of relations from a traditional system dynamics model with a praxiology approach to relations.

Here an example of a systems dynamics model.

The relations are quantifiable. There is a limited and formalized way of describing the relations. The basic model is the concept of positive and negative relations.

In contrast to the Systems Dynamics and other traditional systems models, the Library of Systemic Relations is mapping out the many different types of relations we could imagine or conceptualized, without considerations if they would fit into one or the other systems model. These include quantitative and qualitative relations. The library also includes relations that are not easily depicted graphically with nodes and connectors.

The next image shows an example of using the Library. This example also demonstrates the challenges we meet when looking deeper into the nature of the connectors.

Note: The black connectors are unclassified.

http://www.systemsorienteddesign.net/index.php/giga-mapping/types-of-systemic-relations
(Young Eun Choi, Birger Sevaldson, 2013)
One of the most common misconceptions is that there is only one relation between two nodes. Normally we can identify several connections between two nodes.

As designers we can exploit graphics to distinguish relations and to describe different features of the relations.

Line weight can indicate importance.

Dashed lines could indicate relations that are not always active. A gradient could indicate unequal importance of a relation. (Your relation to your bank might be important to you but hardly makes a difference for the bank)

Also Boundary conditions could be treated graphically to indicate resistance and other qualitative features of the nodes

(Birger Sevaldson 2001-2013)
The “Grandmother Diagram”

Obviously a mutual relation

(Birger Sevaldson 2016)
But is it balanced?
Emotional Relations might be unbalanced
Economic Relation:
Grandmother helps grandson with his studies
Grandson helps grandma and brings flowers
Relations are interconnected and operate in networks of relations. They can reinforce or weaken each other.
Can we quantify this?

Some things we can count directly.
  Count the amount of money
  The frequency of visits etc.

Other things can be measured in various ways.
  Questionnaires regarding emotions etc.
  Ethnographic studies etc.

But these only indirectly indicate the state and content of the relations themselves.
No singular type of relation (or systemic model) is sufficient to explain the interplay between things in the world
Some types of relations

Structural relations

Hierarchical Structure
(Closed and ordered structure)

Non-hierarchical structure
(Open and “messy” structure)

Nodes, Objects
Actors

Relations, Directional actions
Semantic Relations

Semantic networks
Categorical relations
Associative relations
Representational relations
Social relations

- Individual social relations (Family, friends)
- Professional relations (Workplace, profession)
- Institutionalized social relations, (Sharing religion, citizen of a nation)
- Political relations (Sharing or not sharing political beliefs)
- Action relations (Social relations emerging form common activities)
Hard relations

Causal (cause→effect)

A root cause analyses of the “Herald of Free Enterprise” accident

(Public domain)
Feedback loops

A positive feedback loop will spin out of control.

(Birger Sevaldson 2016)
SYSTEMIC RELATIONS THAT RESIST THE MODEL OF NODES AND CONNECTORS

Proximity: A school and a petrol station situated close to each other will influence each other. Observation from a Oslo primary school show how the petrol station is used by students in their free quarters. The rhythm of the school influences the rhythm of the petrol station.

(Images are not from the observed location, because in the meantime the petrol station is gone)

No direct connection

Proximity is not a connection in its self. But it might trigger connections.
Particular emergent relations that are triggered by proximity.
Spatial distributions (intensity) is in a sense one object itself. It is not easily described in a network of nodes and connectors, though singular links might be abstracted. The abstraction into nodes and connectors is insufficient to capture the dynamic interplay that might take place in a field condition.

Fields:
E.g. interactions are getting so intertwined and entangled as well as ubiquitous that they operate more as fields rather than singular interaction.

(Based on Erik Stolterman, Keynote at RSD5 2016)
Read more about the library of Systemic Relations on

http://systemsorienteddesign.net/index.php/giga-mapping/types-of-systemic-relations

Feedback? Suggestions to improve the library?
Please write me an email
Birger.Sevaldson@aho.no