Hierarchical Structures™

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Abstract
Hierarchical Structures™ give a visual form to mental models of ‘how entities relate’ in terms of order or hierarchy, and thus help gain understanding about assumptions and knowledge (or lack thereof) regarding the hierarchical structure of the object of interest — e.g. an un-documented system.

1 Professional value

When formally documented, hierarchy is typically expressed in the ubiquitous organisational charts or ‘organ(i/o)grams’. Such hierarchy maps can be enriched with additional information, so much at the nodes (e.g. personal information, contacts, roles and responsibilities) as much at the edges (e.g. types of relations, frequency of communication). While graphics technology advances, the scoping challenge remains regarding the selection of the relevant information to be displayed.

Un-documented systems require extraction of the relevant information — typically about nodes and edges in a tiered structure — with a complementary study of associated systems and processes. Hence, Hierarchy Maps™ or ‘Static system X-rays™’ help capture, document, and share descriptive and normative structures of tiered order, with a direct interest in system-wide communication.

2 Workflow

Figure 1 The work to be carried out over four (4) hours; a number of ‘loop’ iterations may be necessary to achieve a satisfactory model (HBS, RBP, CPD)
3 Programme

**INTRODUCTION (1H)**
- The objects of interest: system element, hierarchical tiers (Figure 2)
- Extracting system structure and function (RBP, CPD)
- Static organigram (HBS), communication (CPD), simulation/ check, iterations

**WORK SESSION (4H)**
- Work in groups (2–4 people)
- Interactive assistance

**PRESENTATION, DISCUSSION, AND CONCLUSION (1H)**
- Shared experiences
- Applicability issues

4 Technical notes

**METHODS**
- Qualitative simulation — QSM [M] (Figure 5)

**TECHNIQUES**
- Text mark-up — TMU [T]
- Hierarchical breakdown structures — HBS [T] (Figure 2)
- Reverse blueprints — RBP [T] (Figure 3)
- Concise process diagrams — CPD [T] (Figure 4)

**AUDIENCE**
- Project managers (e.g. team communication plans)
- Administrators (e.g. ‘rich’ organigrams)
- Essayists (e.g. character relations)
- Teachers (e.g. entity relationships)

**COMPETENCES**
- Identify and get to know key elements in a system (e.g. people)
- Identify and get to know hierarchical relationships between elements
- Distinguish between causal and hierarchical relationships
- Think clearly and explain how system elements communicate among them
- Register and communicate this efficiently
- Identify information about hierarchy in text documents
- Identify one-way and two-way communications between element pairs
- Register and communicate this on organigrams

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*a* v. Perdicoúlis, 2014b

*b* v. Perdicoúlis, 2014a

*c* Required to some extent; to be reinforced in the workshop
5 Protocols

![Generic Hierarchical Breakdown Structure (HBS) with no information flow](image2)

**Figure 2** Generic Hierarchical Breakdown Structure (HBS) with no information flow

![Generic Reverse Blueprint (RBP) representing a balancing feedback loop](image3)

**Figure 3** Generic Reverse Blueprint (RBP) representing a balancing feedback loop

![Generic Concise Process Diagram (CPD)](image4)

**Figure 4** Generic Concise Process Diagram (CPD)

![Qualitative simulation on an RBP: starting at element C will only end at element E, but also involves a reinforcing feedback loop (marked in Gold)](image5)

**Figure 5** Qualitative simulation on an RBP: starting at element C will only end at element E, but also involves a reinforcing feedback loop (marked in Gold)
6 Materials and preparation

**Case-study/ Work material** Participants should bring their own material (e.g. organigrams, text) in (human) memory or documentation (e.g. digital or printed media).

**Software** Systems Planning diagramming can be carried out manually, with pencil and paper. Optionally, participants are welcome to use their own diagramming software, such as Graphviz\(^1\), LibreOffice Draw, OmniGraffle\(^2\), or Visio.

References and further reading


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\(^1\) v. starter file (Perdicoúlis, 2011b)

\(^2\) v. stencils (Perdicoúlis, 2011c,d)