

Lecture 6

Qualitative Analysis of Robustness: Conceptual Proxies

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1 *Qualitative Analysis of Robustness*

1.1 *Formulation*

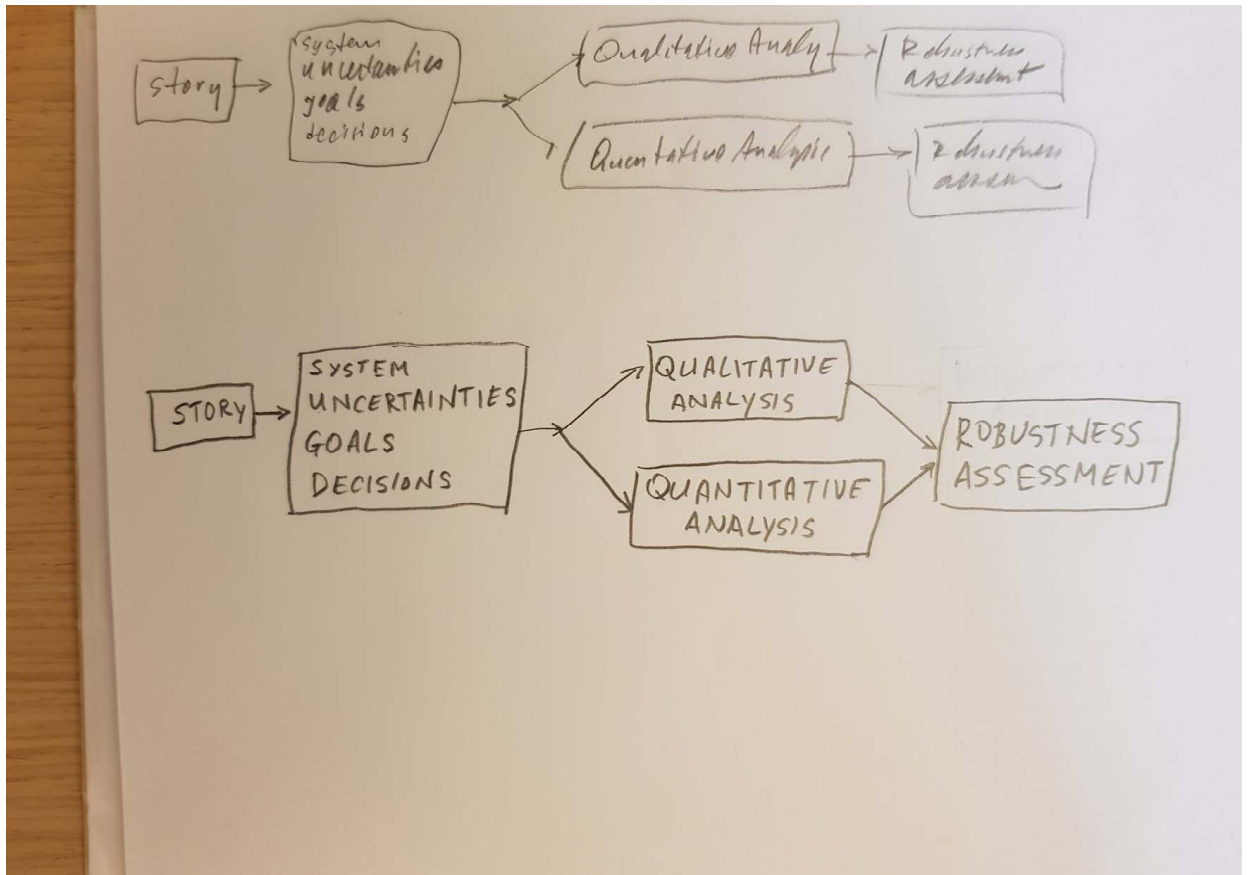


Figure 1: Robustness Work Flow

§ Quantitative Analysis:

$$\begin{aligned}\widehat{h} &= \text{max uncertainty horizon at which goals guaranteed} \\ &= \max \left\{ h : \left(\max_{f \in \mathcal{U}(h)} R(f) \right) \leq R_c \right\}\end{aligned}\quad (1)$$

We explored this extensively in previous lectures.

We now consider qualitative analysis of robustness.

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1.2 *Example: Bipolar Woman and Family*

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§ Qualitative robustness analysis: conceptual proxies.

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§ Conclusion:

- Low robustness to uncertain risk to fetus.
- Pregnancy not recommended.

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§ Conclusion:

- Moderate robustness to uncertain emotional response.
- Adoption is plausible option.

§ Summary of both options

Proxy	Pregnancy	Adoption
Resilience	Low	Mod
Redundancy	Low	Mod
Flexibility	Low	Mod
Adaptiveness	Low	Low
Margin of Safety	Low	Mod
Comprehensiveness	High	High
Decision:	No	Maybe

Table 1: Qualitative analysis results.

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Any Questions?

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