

Rensselaer



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# *Contributions of Human Factors Considerations to REMS Design*

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*Strengthening Risk Evaluation and Mitigation Strategies  
(REMS) Through Systematic Analysis, Standardized Design,  
and Evidence-Based Assessment. The Brookings Institution,  
Washington, D.C. September 25, 2013*

# Framing the Problem

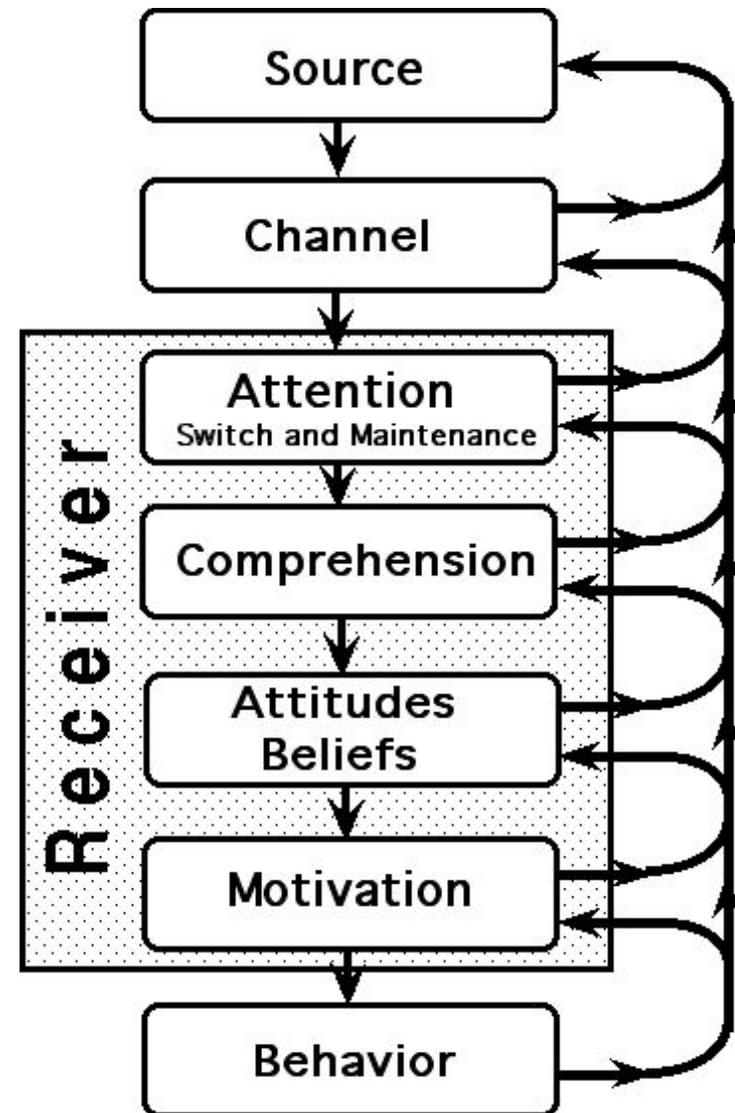
- The *interface* between humans (including physical and cognitive strengths and limitations) and tasks, products, equipment, labeling etc. ... is where the action is.
- Adopting an *iterative* approach is key.
- Front-end analysis of design considerations (e.g., FMEA; formal design documents) is just the beginning.

# The Hazard Control Hierarchy:

## *A Useful Framework*

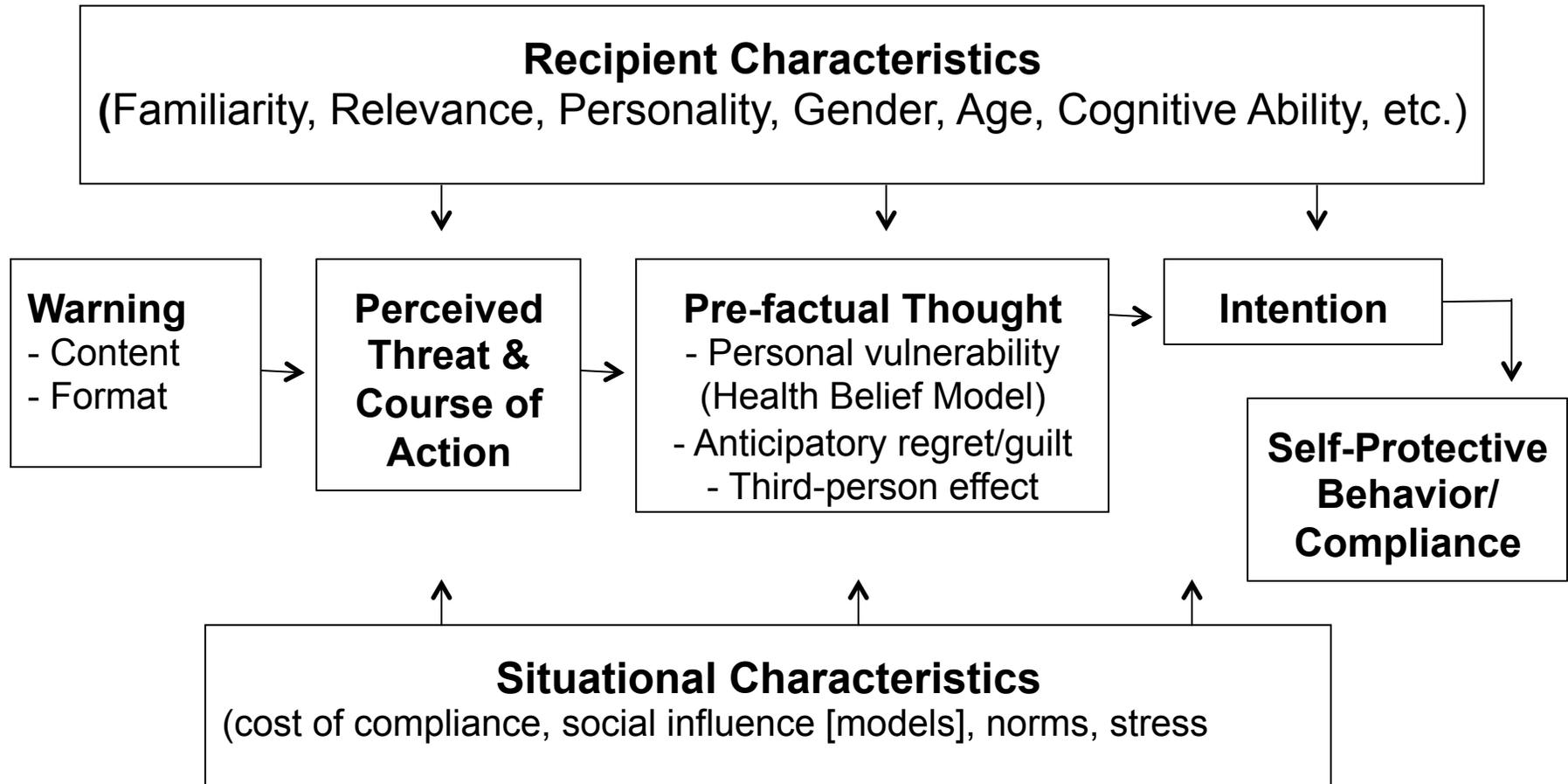
- **Design**
  - Design the hazard(s) out of the product or system.
- **Guard**
  - Place a barrier to separate people from the hazard(s).
- **Risk communication and warning systems**
  - Communicate *non-obvious residual hazards* to relevant target audiences. Must be well-designed in content, format, location, etc.

# Communication- Human Information Processing (The C-HIP Model)



# Interactive Social-Cognitive (ISC) Model

Updates and extends the C-HIP model to identify specific points where “breakdowns” in the desired behaviors may occur.



Based on Kalsher, M.J., & Williams, K.J. (2006). Behavioral compliance: Theory, methodology, and results. In M.S. Wogalter, *Handbook of Warnings*, pp. 313-329. Mahwah, NJ: Erlbaum.