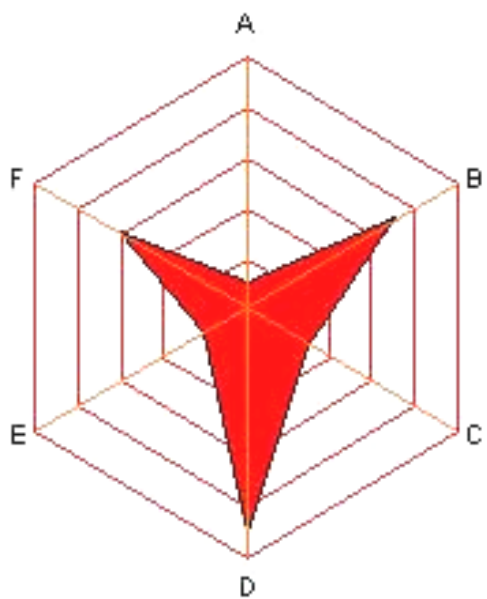
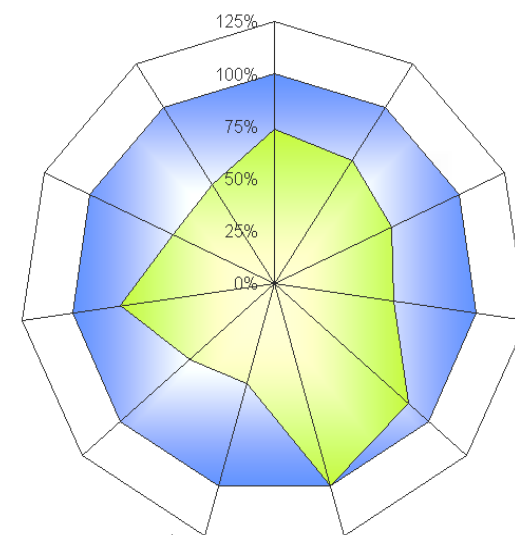


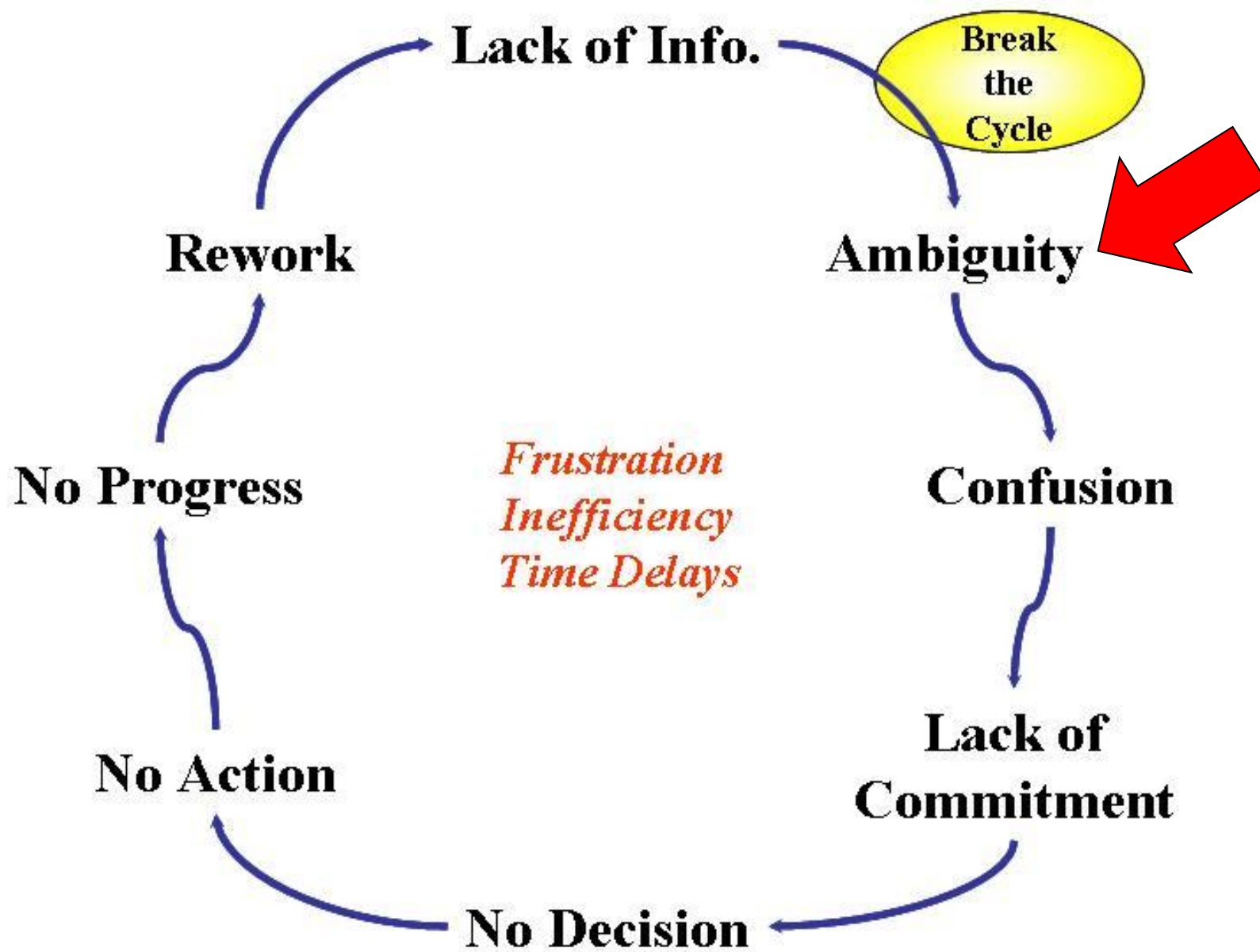
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# Standards: *Why* Alternatives Assessment?



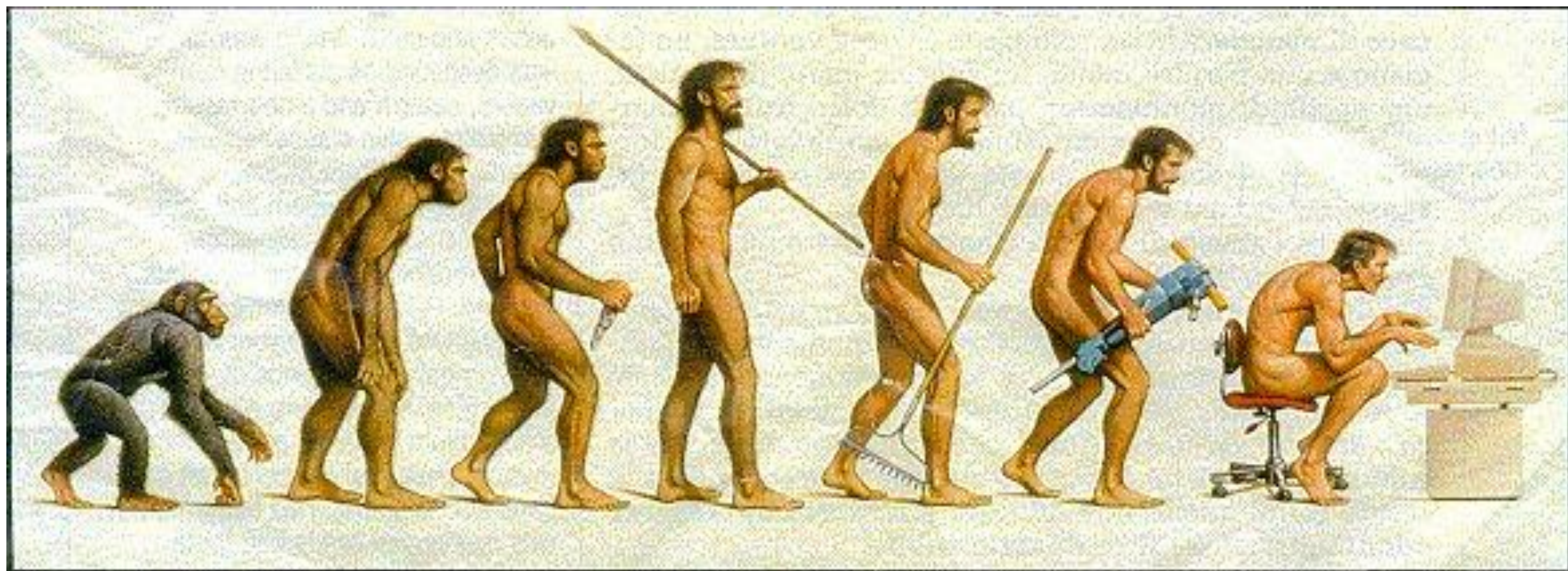
Robert Peoples, Ph.D.  
Director  
ACS Green Chemistry Institute®  
June 8, 2011





# It's Evolutionary: We are learning

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**Somewhere, something went terribly wrong**

*Nature as our model*

# EcoLabels - A Few Examples



European  
Union  
Eco-Label



TerraChoice



Nordic Swan



# What are the issues?

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- ❑ Existing infrastructure (sunk capital)
- ❑ Regulations & Statutes + variations
- ❑ Alternative assessments becoming more important:
  - Regulatory (e.g. REACH, California GC Bill, TSCA reform)
  - Voluntary ecolabel & corporate sustainability programs
- ❑ Global competitiveness
  - International considerations (China, India)
- ❑ Predominately hazard-based → industry talks risk
- ❑ Reliance on intrinsic hazards may lead to selection of less sustainable, “greener” alternatives → life cycle considerations

# What are the issues?

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- ❑ Lack consistent set of criteria and/or methodology
  - costs, gamesmanship, green washing
- ❑ Fragmented: >370 ecolabels today in US and Europe
- ❑ Consensus
  - NSF GCI 355 took 2.5 year
  - NSF 140 took 5+ years
- ❑ Managing expectations – no “magic green wand”
  - No silver bullets
  - Timeline
  - Balancing the risk equation (hazard x exposure)

*“The challenges we face can not be solved at the same level of thinking with which we created them.”*

To avoid:

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*Unintended consequences*

*Regrettable substitutions*



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*Green chemistry & engineering,  
the key to our sustainable future!*

Thank you!

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# STOP HERE

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# Impact

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- ❑ Drive criteria for reducing hazards and thus risk
- ❑ Enables making chemical to chemical comparisons
- ❑ Decide how should criteria be weighted?
- ❑ Role for LCA
- ❑ Hard to identifying best alternatives

# Key Points from Pam

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- **Proposal: An HESI working group will evaluate existing alternative assessment frameworks, identify commonalities/differences, strengths/weaknesses and propose best practices for an improved chemical alternative assessment. Host 1 or 2 workshops and publish findings.**

Key Points for Alternatives Assessment Scientific Perspective Presentation (from Pam in email below) (notes in red on this list of key points are my additions)

- Alternative assessments are becoming increasingly more important in regulatory frameworks (e.g. REACH, Proposed California Safer Consumer Products Regulation, TSCA reform) and in voluntary ecolabel & corporate sustainability programs, China, India
- All programs are predominately hazard-based; no consideration of risk, yet industry likes to talk about risk
- No consistent criteria or methodology exists today; no guidance on weighing one endpoint over another. Landscape extremely fragmented (e.g. more than 370 ecolabel programs in existence today in US and Europe)
- Difficulty making chemical to chemical comparisons and identifying best alternatives – leads to inconsistent results/conclusions
- Sole reliance on intrinsic hazards may lead to selection of less sustainable, “greener” alternatives when other factors across the life cycle are considered
- What about the LCA role for true and comprehensive impact analysis?



# Humanity's Top Ten Problems for next 50 years\*

**9.5B by 2050**



**7.3B in 2011**

- 1. ENERGY**
2. WATER
3. FOOD
4. ENVIRONMENT
5. POVERTY
6. TERRORISM & WAR
7. DISEASE
8. EDUCATION
9. DEMOCRACY
10. POPULATION