Risk Ethics

- Risk Ethics
  - Risk Ethics Questions
- Objective vs. Subjective Risk
  - Objective
    - How ***likely*** is the event to occur?
  - Subjective
    - What the ***percieved*** chance of the event occuring is.
- Risk-Benefit Principle
  - Weigh *benefits* vs *costs*
  - Critiques
    - Some things cannot be priced
      - How to weigh a human life?
- Precautionary Principle
  - Better to be safe than sorry
  - There are risks never worth taking
  - 2 Principles
    - Normative
      - "should/ought"
    - Epistemic
      - avoid false negatives over false negative
      - frequent erroneous alerts are ok if they can identify a serious risk (spotty fire alarm, "boy who cried wolf")
  - Critiques
    - Overly cautious
      - Anything that might be harmful or damaging to life should be avoided
- Risk Management
  - Technocratic model
    - those responsible/experts make policy
  - Democratic model
    - public must approve a project & help in decision-making processes
- Case Studies
  - Surfside Condos (June 2021)
    - Pool deck and garage problematic as early as 1996
      - concrete was flat (water) and led to spalling of rebar
    - Emails suggest slow response
    - 98 deaths
  - Morandy Bridge - Italy (2018)
    - Built 1967 over substantial residential housing
    - Signs of rust within 10yrs
    - Concrete pieces fell continually
    - One beam of tension for each side (vs. redundant cables)
    - Required continuous & expensive maintenance

Risk Ethics Questions

- The Precautionary Principle is the dominant way of approaching risk in the United States.
  - False
- When analyzing risk using the basic notion that it is better to be safe than sorry, engineers are employing the _____.
  - Precautionary Principle
- The subjective and objective risks of an activity sometimes differ demonstrates that subjective risks are irrational or irrelevant.
  - False
- The risk-benefit principle uses…
  - Quantitative information for weighing the benefits of a risk against its costs.
- Which of the following generated widespread concern about the risk of technology in the 1970s and 80s?
  - Nuclear power
- Which of the following are important distinctions for risk analysis?
  - Personal and impersonal
  - Future and past
  - Subjective and objective
  - risk-benefit and precautionary principles
  - **wrong**
- The principle of maximizing expected value holds that we must always be willing to accept a risk if the benefits of doing so are large enough.
  - True
- "The exact risk that a new pesticide X will have on people or the environment is uncertain. Rather than quantify the known risks, we are better off to not allow it to enter the market until the risks are more fully understood." This statment best illustrates…
  - The precautionary principle
  - A fundamental problem with the risk-benefit analysis is that the principle of maximizing expected value is based solely on human intuitions.
  - False
- Which of the following are common objections made against risk-benefit analysis?
  - it seems morally problematic to assign monetary value to the occurence of a preventable death
  - the numbers used in such quantitative analysis can be very uncertain
- The lottery experiment conducted by economist Maurice Allais indicates that…
  - the principle of maximizing expected value sometimes calls for individuals to make counterintuitive choices
- Which of the following is NOT a common criticism of the risk-benefit principle?

  - The risk-benefit principle prevents progress because the calculations involved make it impossible to introduce novel designs
- Someone who subscribes to the precautionary principle believes that safety and the avoidance of risk often outweigh the potential benefits that taking a risk may offer.
  - True
- Although a human life has no precise monetary value, evena a precautionary analysis would consider it irrational to spend enormous sums of money preventing a statistical death.
  - True
- If one accepts the traditional definition or formula for risk, how might one's behavior change?
  - They might begin to do more activities that have low objective risk even if they have a high subjective risk.
- The precautionary principle applies in all cases where one is uncertain about the consequences of an action.
  - False, the consequences must also be reasonable and possible.
- The objective risk that arises from the use of technological artifacts does not change over time.
  - False
- Instead of calculating probabilities, engineers employing the precautionary principle need only establish whether a sufficiently bad outcome will definitely occur unless some precautionary measure is taken.
  - False
- Which of the following options completes the "Wingspread statement" of the precautionary principle: "When an activity raises threats of harm to human health or the environment, precautionary measures should be taken…"
  - "…even if the cause and effect relationships are not fully established scientifically."
- Why might opinions of non-experts, who are unable to understand the technical details of an activity, still matter?
  - Because the non-expert's misunderstanding could be more productive and motivate more scientific research.
- The precautionary principle is not reducible to simply being "better safe than sorry." What else does this principle require?
  - That some risks (e.g., those that generate very serious harms) are always unacceptable and should never be undertaken.
  - Some extremely risky actions can never be justified, even by incredibly large benefits.