

1. "Ionizing radiation....may or may not be bad in small doses – no one knows" (Lewis, ch. 15, p. 218). Lewis' claim is incomplete because he admits, on p. 222, that the National Research Council (National Academy of Sciences) says that the probability of radiation-induced cancer is a function of the amount of radiation received.

Lewis' incompleteness is damaging to his argument because the incompleteness suggests that Lewis may be biased in underestimating the dangers associated with radiation.

ALTERNATIVE: Lewis' claim could lead to the consequence that people were careless about unnecessary radiation risk because he says "no one knows" if small doses are dangerous.

This consequence is damaging to Lewis' argument because people ought not ignore even potential risks if they are easily avoidable, e.g., by wearing lead apron for x-rays.

2. "Medical x-rays are examples of voluntary exposure to radiation" (Lewis, ch. 15, p. 219). Lewis assumes that when people receive medical x-rays, their exposure to radiation is voluntary.

This assumption is doubtful because doctors, insurers, or employers often require people to receive x-rays and because patients often do not understand the risks involved and hence cannot consent to them.

3. "Nuclear waste must be disposed of carefully" (Lewis, ch. 15, p. 220). Lewis claim above is inconsistent because he also claims (on pp. 245-246) that "high-level waste....risk....turns out to be ridiculously low....High-level nuclear waste disposal is a non-risk."

Lewis' inconsistency is damaging to his argument because one need not be "careful," as he says, about a risk that is "ridiculously low" or a "non-risk" and because his emotive and inconsistent language suggests Lewis' bias.

4. "the vast majority of all these radiation sources deliver[s] extremely small doses, with minimal (if any) health effects, even though fear of even trivial doses of radiation is common" (Lewis, ch. 15, p. 220). Lewis assumes that it is not reasonable to fear trivial doses of radiation.

This assumption is doubtful because Lewis admits ionizing radiation "may be bad in small doses – no one knows" (Lewis, ch. 15, p. 218), and it sometimes is reasonable to fear small/unneeded doses of things with cumulative effects.

5. "The maximum permitted exposure for workers in nuclear facilities is 5,000 mr per year, and for the general public 500. We don't know if this much radiation does any harm at all" (Lewis, ch. 15, p. 220). Lewis' claim is incoherent because (1) the referent of "this much radiation" could be 5,000 or 500 mr and (2) he says (p. 222) "the most authoritative estimates" of radiation risk show that the risk is a function of dose.

Lewis' incoherence is damaging to his argument both because (1) his language makes his argument unclear and (2) he appears to be biased in underestimating radiation risks.