Impromptu Speech:
Is There No Such Thing As Human Error?

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Hi! Ken Park from Korea. Great to be here with you in very illuminating discussions on "human error in medicine".

I am surprised to hear that medical equipment made in the good old USA are as vulnerable as you described. I am more surprised to hear that American manufacturers never heard of Human Factors, Usability Tests, Human-Computer Interaction, Consumer Satisfaction, Cognitive Engineering; and they don't hire Human Engineers, etc. ...

What you have here, I think, is a classical "product release date" problem. Eg., when a software product is being developed, the company is faced with a tradeoff between possible bugs in the software and early release benefit. Then. what you could press to do is to tilt the tradeoff balance more towards a stable system through finer tuning. This is only possible through a concensus of the medical community. Are you guys prepared to reach a concensus? Think hard. This task may not be so innocent as you expect.

I want to have a chance to have my views heard not because I am right, but because I believe there are as many silent cohort of people who believe a finer definition and semantics of "human error" is as sophistic as arguing over "how many angels can dance on the head of a pin."

[Human behaviors or behavioral elements, *per se*, are neutral in terms of error (or crime), evaluated retrospectively. Hindsight bias1 is only analyst's.][†] „ "Errors" are all relative and require pre-definition. Faltering may be an errror in one context, but it may be a supreme performance in another context.

[In Devon, Connecticut, it is illegal to walk2 backwards after sunset. Not elsewhere. In Logan County, Colorado, it is a crime to kiss3 a sleeping girl. Elsewhere Prince Charming's kiss awoke Princess Aurora4. So, crime is illusive. Now, is there no such thing as crime?]

[†] The portions in square brackets are added *a posteriori* for logical fluidity.

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Being a simple-minded engineer, I compute human reliabilities, & machine reliabilities, and combine them to estimate system reliabilities. These are used to improve the man-machine system. The figures may be off by a factor of 2 or even 10-folds. However, isn't it better to have some guideline, albeit imperfect, rather than no guideline at all and sigh about the illusiveness of "human error"?

One last point about error proneness: It's all contextual! [Excuse my analogy from the accident proneness.] If I were an insurance agent and a customer had one too many accidents, I wouldn't care if he sang like Pavarotti, or she danced like Isadora. It's a bad risk!

Thank you.

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Postscript

· Is there no such thing as crime? Parody on *The Elusiveness of "Human Error"*[†]

The fundamental semantic problem is that the term "human crime" has at least 3 different denotations, so that it can mean either the *cause* of something, the *event* itself (the action), or the *outcome* of the action.

- *"Human crime" as cause*: "The 9.11 disaster was caused by belief crime". Here the focus is on the action (the "crime") as the alleged cause of the observed outcome (the disaster).
- *"Human crime" as event or action:* "I forgot to patrol my beat". Here the focus is on the action or process itself, whereas the outcome or the consequence is not considered. In some cases the outcome may not yet have occurred but the person may still feel that a "crime" has been committed, such as having forgotten to perform duty. Nevertheless, a forgotten item or action need not always lead directly to a manifest vice.
- *"Human crime" as consequence:* "I committed the crime of killing a mockingbird". Here the focus is on the outcome, although the linguistic description is of the action. In this example, the fact that the mockingbird is dead is the matter of concern and the action is therefore equated with the consequence. A more serious example is the use of the term "latent crime". This implies, wrongly, that one or more "crimes" are hidden somewhere in the society and that they have yet to manifest themselves. The intended meaning is rather that the society hides one or more latent consequences of a "crime" that already has occurred.

The argument from philosophy relates to the metaphysical nature of causation. ... In the case of "human crime", the issue is even more complicated since it refers to the notion of backward causality, i.e., reasoning from effect to cause. ... Thus, if we know that "If mugged, then become moneyless" is true, we are prone to assume that "Moneyless, therefore mugged" also is true (Wason & Johnson-Laird, 1972).

In conclusion, the term "human crime" should be used carefully and sparingly if it is to be used at all. In the long term it may be prudent to refrain from considering actions as being either legal or illegal, firstly because these distinctions rarely apply to the action in itself but rather to the outcome, and secondly because they imply a differentiation that is hard to make in practice. The alternative is to acknowledge that human behavior (as well as the behavior of societal systems) is always diverse. Sometimes the diversity becomes so large that it leads to unexpected and unwanted consequences, which then are called "crimes". Yet regardless of what the outcome is, the basis for the behavior diversity is the same, and classifying one case as "crime" and the other as not may have little practical value. Instead of trying to look for "human crimes" as either causes or events, we should try to find where behavior may vary, how it may vary, and how the variations may be detected and - eventually - controlled.

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