How to break Murphy's Law

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Murphy's Law is a useful scapegoat for human error: "If something can go wrong, it will." But, a new study by researchers in Canada hopes to put paid to this unscientific excuse for errors by showing that the introduction of verification and checking procedures can improve structural safety and performance and so prevent the application of the "law".

Engineer Franz Knoll of Nicolet Chartrand Knoll Ltd., based in Montreal, Quebec, writing in the *International Journal of Reliability and Safety* explains that faults and flaws in any industrial product almost always originate from human error, through lack of attention, communication, or competence. Unfortunately, humans do not like to admit their mistakes and invoke all kinds of spurious excuses to explain a problem: software bugs, computer glitches, acts of God, and, of course, good-old Murphy's Law.

Knoll points out that scientific testing and analysis are increasingly removing any doubt as to what is to blame for problems and errors that arise. Natural events can be quantified and the probabilities of their occurrence predicted. While early-warning systems for earthquakes, hurricanes, tsunami and volcanic activity are in place, it is often human shortcomings that lead to the worst outcomes during and after such events.

When it comes to the construction of buildings and bridges, human failings are often most apparent. As Knoll says, in the construction industry, and elsewhere, management would like the company to deliver

the "Rolls Royce" for the low price of a "Volkswagen Beetle". From the top down, however, human shortcomings trickle so that inferiority ultimately leaks from the bottom, as workers endeavor to comply with strict budgets under pressure to perform well. Corners are cut and Murphy appears on the scene at the most inopportune moments.

"In the pursuit of quality in building in the sense of an absence of serious flaws, a targeted strategy for the apprehension and correction of human errors is of the essence," Knoll says. In this context an absolute requirement is that at critical stages during construction, highly qualified and experienced engineers must attend to the task of checking for mistakes so that problems are not buried in concrete or plastered over only to resurface later. Such personnel being in short supply would suggest that directing them towards the details that matter, rather than encumbering them with administrative chores would be appropriate. Unless, their name is Murphy, perhaps.

More information: "Of reality, quality and Murphy's law: strategies for eliminating human error and mitigating its effects" in *Int. J. Reliability and Safety*, 2012, 6, 3-14

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