



Cognitive Systems Design

Update November 2013

Root Cause Analysis by Iedema et al (2006)



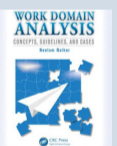
Root cause analysis has become the tool of choice in some areas of healthcare for investigation of events in which patient outcomes have been compromised. I have been troubled for some time by this infatuation with root cause analysis largely because the results suggest superficial solutions to complex problems. The illustrations typically used to justify the use of root cause analysis in health care are of simple technical problems from areas such as manufacturing. Because my views on this analytic tool come from my experience in domains other than healthcare, I was pleased to find a paper that examines the use of root cause analysis in the investigation of a healthcare problem.

The study (Iedema, et al, 2006) evaluates the discussions of a team of healthcare experts as they undertook a root cause analysis of an incident in which a patient was given an overdose of morphine. The study authors quote excerpts from the team discussion, noting the struggle that the analysis team had in deriving generalizations from messy and sometimes contradictory details of individual actions and, additionally, the struggle they had in transforming the complexity of what happened into recommendations for practice that is non-routine and therefore requires flexible, contextually sensitive action.

The citation is:

Iedema, Roderick A.M.; Jorm, Christine; Braithwaite, Jeffrey; Travaglia, Jo and Lum, Martin (2006). A root cause analysis of clinical error: Confronting the disjunction between formal rules and situated clinical activity. *Social Science & Medicine* 63, 1201-1212.

Work Domain Analysis by Neelam Naikar

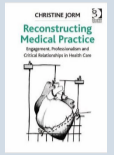


The full title is *Work Domain Analysis: Concepts, Guidelines, and Cases*

In collaboration with Jacques Hugo of the Idaho National Laboratory, I have reviewed this for *Ergonomics in Design*. The review has been approved for publication but is not yet published.

I have a brief comment on Amazon.com. I will not repeat what I have said there except that this book offers an excellent and comprehensive treatment of a challenging topic. I can thoroughly recommend it to those interested in work domain analysis.

Reconstructing Medical Practice by Christine Jorm



One lesson that might be taken from Iedema, et al (2006) is that the problem is not so much with root cause analysis but rather with the fundamental nature of system. Is there any process of analysis and reformulation that can help?

Christine Jorm, a co-author on that paper, has a recent book titled *Reconstructing Medical Practice*. Her final chapter in a generally insightful, engaging and sometimes surprising account, is outstanding. She argues that there are serious flaws in the current approaches to health-care safety and quality. There is too much crisis talk, an anti-research ethos, a lack of patient centeredness, a lack of attention to ethical issues, and a confusing emphasis on error.

Of course, it is one thing to identify problems and challenges, but much harder to identify how to redesign the system. Does she have a way forward? That is, to my mind, the strength of the book. She proposes several strategies for rebuilding the relationship between doctors and the health care system. She argues that we need to develop and share a more sophisticated understanding of how safety and good care are created, we need to improve the measurement of harm, error and safety, we need to redefine the job of the doctor and select and train doctors for that newly defined role, we need to manage health care better, we need to enhance individual learning, we need to support institutional learning, and we need to value dissonance and confrontational emotion.

As is evident from this, Jorm has a program for transforming our approach to health care safety and quality, and it is a systems approach. Can it work? What we are doing now does not appear to be working. Her ideas make sense from a systems perspective and would seem to have considerable potential.

The citation for the book is:

Jorm, Christine (2012). *Reconstructing Medical Practice: Engagement, Professionalism and Critical Relationships in Health Care*. Gower: Surrey, England.

Display & Interface Design by Kevin Bennett & John Flach



I announced my review of this book in my previous (September) newsletter. I had not meant to imply that my review had been published but rather that it had been accepted for publication. However, it has now been published in the most recent edition of *Ergonomics in Design*. The full citation is: Lintern, G. (2013). A review of the book *Display and Interface Design: Subtle Science, Exact Art* by Kevin B. Bennett and John M. Flach, *Ergonomics in Design, The quarterly of Human Factors applications*, 21, 34-35.

Email me if you do not have access to *Ergonomics in Design* but would like a copy of the published review.

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