

Reflections Towards the Future of Medical Informatics

A Farewell Lecture after Almost Half a Century of Medical Informatics Activities

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Summary

Objective: To provide guidance on the future development and role of medical informatics, or biomedical and health informatics, in form of reflections.

Method: To report on the author's previous activities as a medical informatician, which spans almost half a century. It begins in 1973 when he started to study medical informatics. In 1978, more than four decades ago, his professional work started. He retired at the end of summer semester 2021. This was the occasion to prepare this farewell lecture.

Results: In twenty reflections, thoughts are presented on professional careers (R1 – 'places'), on medical informatics as discipline (R2 – 'interdisciplinarity', R3 – 'theses', R4 – 'affiliations'), on research (R5 – 'duality', R6 – 'confusion', R7 – 'connections', R8 – 'collaboration'), on education (R9 – 'community', R10 – 'competencies', R11 – 'approaches'), on academic self-governance (R12 – 'autonomy'), on engagement (R13 – 'Soyuzhes', R14 – 'professional societies', R15 – 'respect', R16 – 'lightstep walk'), and on good scientific practice (R17 – 'time invariants', R18 – 'Zeitgeist', R19 – 'knowledge gain', R20 – 'searching').

Conclusions: It has been a pleasure for me to participate in medical informatics activities for almost fifty years. During that time, there have been significant advances, including in medicine and in informatics, and also in medical informatics itself. And now it is the turn of others. While keeping in mind that tradition is not preserving the ashes, but passing on the fire, this report with its reflections may be of some help.

Keywords

Medical Informatics; Biomedical and Health Informatics; Research; Education; Academic self-governance; Engagement; Good Scientific Practice

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1 Introduction

1.1 About this Manuscript

When the regular term of a professor ends, and the new professional life phase as a professor emeritus is about to begin, it is a tradition at German universities to give a so-called farewell lecture (in German: Abschiedsvorlesung). My farewell lecture was first presented on September 22, 2021, at TU Braunschweig in German [1]. In addition, I had the opportunity to give this lecture also in English on October 16, 2021, in Athens, Greece, during ICIMTH (International Conference on Informatics, Management, and Technology in Healthcare) 2021. This manuscript is an updated edited written version of the farewell lecture in English.

This English version started from the German version in [1], which I first translated and to some extent modified, supported by the DeepL program [2]. Then, Casimir Kulikowski kindly read the first version and suggested edits to my German-biased English, which developed into the present manuscript.

Please note that the German manuscript is more extensive, especially with the inclusion of a commented poem and nine appendices. Some details related to these appendices in [1] will occasionally be referred to here. As the German manuscript has been published in GMS MIBE, the official journal of the German Association of Medical Informatics, Biometry and Epidemiology (GMDS) – an Open Access journal – the German manuscript and its appendices can be easily accessed.

1.2 Objective(s) and Method

One objective of this farewell lecture is to reflect on future developments and on the role of medical informatics as a discipline. The manuscript contains twenty reflections, related primarily, but not exclusively, to medical informatics. These reflections may be of primary interest to readers.

In order to set the context for as well as to explain and elaborate on these reflections, it seemed necessary first to report about my work as a medical informatician. This part of the report might be of less interest to readers. Reporting about my work was both, method and another objective.

Please note that in this farewell lecture I will once again use the term medical informatics in its wide, comprehensive sense ([3], p. 256, and section 2.2 in this manuscript). Others may prefer to call this discipline biomedical informatics, or health informatics, or biomedical and health informatics or yet something else [4, 5–8].

My reflections on the future are presented after almost half a century of medical informatics activities, which I began studying almost fifty years ago in 1973. In 1978, more than four decades ago, my professional career started.

Do I really report on my activities? Actually, this is not possible, because I have always collaborated with others. Many people I have met during these almost five decades have shaped me. I have learned from them and I am still learning today. If I mention achievements here, then these people have helped to achieve them.

Reflections At The End Of A Century

Christina Lupton



Reflections At The End Of A Century:

Reflections at the End of a Century Morris Slavin, Louis Patsouras, 2002 *Dhamma Reflections* Bhikkhu Bodhi, 2017-01-15 This volume brings together 53 essays of Bhikkhu Bodhi previously published by the Buddhist Publication Society in newsletters and other publications These essays reveal the depth and breadth of Bhikkhu Bodhi's ability to communicate the timeless teachings of the Buddha and his skillful guidance in applying the Dhamma in everyday life

Serious Reflections During the Life and Surprising Adventures of Robinson Crusoe with His Vision of the Angelick World Daniel Defoe, 2022-04-22 This collection of essays commenting on the themes of *The Life and Strange Surprising Adventures of Robinson Crusoe* and *The Farther Adventures of Robinson Crusoe* is invaluable for understanding Defoe's attitudes toward these particular works and toward his fiction in general **Critical Reflections on Poetry and Painting (2 vols.)** Jean-Baptiste Du Bos, 2021-07-15 Jean Baptiste Du Bos *Critical Reflections on Poetry and Painting* first published in French in 1719 is one of the seminal works of modern aesthetics Du Bos rejected the seventeenth century view that works of art are assessed by reason Instead he believed audience members have sentiments in response to artworks Their sentiments are fainter versions of those they would feel in response to actually seeing what the work of art imitates Du Bos was influenced by John Locke's empiricism and in turn had a major impact on virtually every major eighteenth century contributor to philosophy of art including Voltaire Montesquieu Diderot Rousseau Herder Lessing Mendelssohn Kames Gerard and Hume This is the first modern annotated and scholarly edition of the *Critical Reflections* in any language

Innovative Assessment for the 21st Century Valerie J. Shute, Betsy Jane Becker, 2010-09-08 In today's rapidly changing and information rich world students are not acquiring adequate knowledge and skills to prepare them for careers in mathematics science and technology with the traditional approach to assessment and instruction New competencies e.g. information communication and technology skills are needed to deal successfully with the deluge of data In order to accomplish this new educationally valuable skills must be acknowledged and assessed Toward this end the skills we value and support for a society producing knowledge workers not simply service workers must be identified together with methods for their measurement *Innovative Assessment for the 21st Century* explores the faces of future assessment and ask hard questions such as What would an assessment that captures all of the above attributes look like Should it be standardized What is the role of the professional teacher *Studies in Seventeenth-Century English Literature, History and Bibliography*, 2021-11-01 *Reading and the Making of Time in the Eighteenth Century* Christina Lupton, 2018-08-15 How did eighteenth century readers find and make time to read Books have always posed a problem of time for readers Becoming widely available in the eighteenth century when working hours increased and lighter and quicker forms of reading newspapers magazines broadsheets surged in popularity the material form of the codex book invited readers to situate themselves creatively in time Drawing on letters diaries reading logs and a range of eighteenth and early nineteenth century novels

Christina Lupton's *Reading and the Making of Time in the Eighteenth Century* concretely describes how book readers of the past carved up expanded and anticipated time. Placing canonical works by Elizabeth Inchbald, Henry Fielding, Amelia Opie, and Samuel Richardson alongside those of lesser known authors and readers, Lupton approaches books as objects that are good at attracting particular forms of attention and paths of return. In contrast to the digital interfaces of our own moment and the ephemeral newspapers and pamphlets read in the 1700s, books are rarely seen as shaping or keeping modern time. However, as Lupton demonstrates, books are often put down and picked up; they are leafed through as well as read sequentially, and they are handed on as objects designed to bridge temporal distances. In showing how discourse itself engages with these material practices, Lupton argues that reading is something to be studied textually as well as historically. Applying modern theorists such as Niklas Luhmann, Bruno Latour, and Bernard Stiegler, Lupton offers a rare phenomenological approach to the study of a concrete historical field. This compelling book stands out for the combination of archival research, smart theoretical inquiry, and autobiographical reflection it brings into play.

Reflections on a Ravaged Century Robert Conquest, 2001. A look at the twentieth century examines the factors and events that have sent millions to their deaths, discussing the philosophies that have caused so much conflict as well as what the future may hold for the human race.

From free trade to globalization: uncovering the mist of 21st century José Alberto, Pérez Toro, 2016-03-14. Much has been written about globalization as an economic and political concept. The academic debate looks forward for explanations about the historical roots and development of this emerging phenomenon where the Nation State's evolved into a system where nations are ruled by the dynamics of global interdependence. Globalization in the new era is characterized as a process where geographical, political, and cultural borders tend to dissolve. The Westphalia notion of sovereignty capitulates against the principle of political subordination as integration of local power ensuring national legitimacy.

The Oxford Handbook of Reinhold Niebuhr Robin Lovin, Joshua Mauldin, 2021. This authoritative Handbook features 38 chapters placing Reinhold Niebuhr 1892-1971 in his historical context to offer readers an appreciation of his insights and how he was received by his contemporaries.

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Table of Contents Reflections At The End Of A Century

1. Understanding the eBook Reflections At The End Of A Century
 - The Rise of Digital Reading Reflections At The End Of A Century
 - Advantages of eBooks Over Traditional Books
2. Identifying Reflections At The End Of A Century
 - Exploring Different Genres
 - Considering Fiction vs. Non-Fiction
 - Determining Your Reading Goals
3. Choosing the Right eBook Platform
 - Popular eBook Platforms
 - Features to Look for in an Reflections At The End Of A Century
 - User-Friendly Interface
4. Exploring eBook Recommendations from Reflections At The End Of A Century
 - Personalized Recommendations
 - Reflections At The End Of A Century User Reviews and Ratings

- Reflections At The End Of A Century and Bestseller Lists
- 5. Accessing Reflections At The End Of A Century Free and Paid eBooks
 - Reflections At The End Of A Century Public Domain eBooks
 - Reflections At The End Of A Century eBook Subscription Services
 - Reflections At The End Of A Century Budget-Friendly Options
- 6. Navigating Reflections At The End Of A Century eBook Formats
 - ePub, PDF, MOBI, and More
 - Reflections At The End Of A Century Compatibility with Devices
 - Reflections At The End Of A Century Enhanced eBook Features
- 7. Enhancing Your Reading Experience
 - Adjustable Fonts and Text Sizes of Reflections At The End Of A Century
 - Highlighting and Note-Taking Reflections At The End Of A Century
 - Interactive Elements Reflections At The End Of A Century
- 8. Staying Engaged with Reflections At The End Of A Century
 - Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Reflections At The End Of A Century
- 9. Balancing eBooks and Physical Books Reflections At The End Of A Century
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection Reflections At The End Of A Century
- 10. Overcoming Reading Challenges
 - Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
- 11. Cultivating a Reading Routine Reflections At The End Of A Century
 - Setting Reading Goals Reflections At The End Of A Century
 - Carving Out Dedicated Reading Time
- 12. Sourcing Reliable Information of Reflections At The End Of A Century
 - Fact-Checking eBook Content of Reflections At The End Of A Century
 - Distinguishing Credible Sources

13. Promoting Lifelong Learning
 - Utilizing eBooks for Skill Development
 - Exploring Educational eBooks
14. Embracing eBook Trends
 - Integration of Multimedia Elements
 - Interactive and Gamified eBooks

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