

Chapter 3

Practical Issues in Human and Artificial Intelligence Interaction

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ABSTRACT

The chapter will focus on some practical issues in human and AI interaction based on the experience of applying AI in several large corporations. The following issues will be discussed: weaknesses of human intelligence, weaknesses of AI, benefits of human intelligence from AI, negative effects of AI on human intelligence, resistance of human intelligence toward AI, and how to improve the interaction between human and artificial intelligence. The discussed issues will be illustrated with examples from real-world applications.

INTRODUCTION

The fast invasion of Artificial Intelligence (AI) in industry caught the businesses unprepared. While the current focus of interest of industry is on understanding the various AI-related technologies and their value creation capabilities, the long-term effects of the interaction between human intelligence and the applied AI-based systems gradually grabs the attention of researchers and practitioners. Analyzing the different aspects of this complex phenomenon is of critical importance for the future productivity of the business applications of AI. For example Google was forced to admit in a note to investors that products and services “that incorporate or utilize artificial intelligence and machine learning, can raise new or exacerbate existing

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ethical, technological, legal, and other challenges (Markus and Davis, 2019)”. There is a growing concern about human and artificial intelligence interaction in one of the key AI application – self-driving cars. It is not that it is impossible in principle to build a physical device based on AI that can drive in the snow or manage to be ethical; it is that we cannot get there with big data alone (Markus and Davis, 2019). Agreements, rules, and standards are beginning to emerge for issues such as user privacy, data exchange, and avoiding racial bias. Governments and corporations are working hard to sort out the rules for self-driving cars. There is a consensus that AI decisions must be explainable if AI systems are to be trusted, and that consensus is already partially implemented in the European Union’s General Data Protection Regulation (GDPR) legislation (Russel, 2019). There is a growing perception that our brains will be challenged to coevolve with our AI-rich devices in order to keep pace with exponentially accelerating intelligent machines (Coleman, 2019).

The author believes that this complex and important problem AI-based business applications needs a good understanding of the key features of AI and their relevance to human intelligence. A suggested starting point could be the 10 themes for responsible AI, defined in (Clarke, 2019):

1. Assess Positive and Negative Impacts and Implications
2. Complement Humans
3. Ensure Human Control
4. Ensure Human Safety and Wellbeing
5. Ensure Consistency with Human Values and Human Rights
6. Deliver Transparency and Auditability
7. Embed Quality Assurance
8. Exhibit Robustness and Resilience
9. Ensure Accountability for Obligations
10. Enforce, and Accept Enforcement of Liabilities and Sanctions

Based on these 10 themes Clarke formulates 50 principles for AI, which can be a good checklist to see what is relevant for the purpose when an AI-system is being used as it integrates all relevant aspects and stresses to deliver transparency, and auditability (Clarke, 2019). Taking into account these principles, the chapter will focus on some practical issues in human and AI interaction based on the experience of applying AI in several large corporations. The following issues are discussed:

- What are the key weaknesses of human intelligence that reduce the efficiency of business applications?
- What are the key benefits of AI that could improve human intelligence productivity?

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