

AI as a Tool for Qualitative Analysis: Past and Present

Petri Luosto



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Preface

The main goal of this book is to introduce the capabilities and adaptability of AI to analyse both decisions made in the more distant history and in the recent past. During the couple of last years, probably the greatest positive surprise has been the rapid development of AI technology which has been revolutionary to the degree that it can be compared to the development of writing, printing-press, inventing computers and to the birth of internet.

The AI application that I am going to use in this discussion is ChatGPT which is discussive AI application. I am writing this book in Finland, so it is important to notice what the ChatGPT Europe Terms of Use say about the user ownership: **“Ownership of content.** As between you and OpenAI, and to the extent permitted by applicable law, you (a) retain your ownership rights in Input and (b) own the Output. We hereby assign to you all our right, title, and interest, if any, in and to Output. ”

A very important issue to notice is that no one should give any AI application **any information regarding critical data to identify people or any confidential information.** Regarding AI it is important to give it credit to tell which were AI´s and which were user´s comments.

In the next chapter we will see how AI will react to the name of the book. This will not be an ordinary book because this book will be based on the dialogue between the author and ChatGPT so that the reader can have a good picture of the capabilities and manners of ChatGPT. The philosophy behind this book is not just discuss with AI but also use AI as a tool. I advise the readers themselves to try and to test AI using their own information, knowledge and imagination.

The development of AI should be observed. ChatGPT is not the only AI application and some other ones that I use are Deep AI, Gemini, Perplexity AI and Co-pilot. It is a wise idea to use several different AI applications and compare the answers that they gave when they analysed same comments and questions.

The structure of this book is that it will first focus on AI generally and how to use AI to analyse qualitative decision-making. After that the book focuses on analysing couple of examples from history and from the present day so that we

can see the countless of number of decisions made which were based on qualitative and quantitative opinions. The last chapters in this book summarize the content also by using the AI aid.

I have not changed the writing, or the content of the answers given by AI because I want that the reader should be able to evaluate the quality of the answers given by AI. The only changes that I have made to the answers given by AI was to make them tidier. If I have noticed a mistake made by AI, then I have noticed it in my next comment. AI is not mistake-free, but it is a product of humane activity and because of that it may make mistakes. If you suspect that AI has made a mistake in some matter, you should inspect that issue from other sources.

Historical examples that I have used in this book are ones that ChatFPT already mentioned to me and the examples from the very recent past are here because of their subjective importance being important matters in the time when this book was written and published.

Chapter I; A Short Introduction to AI regarding the topic of this book

Yoo said: Next, we will observe how ChatGPT reacts to the name of this book. (I had to define that I wanted a short explanation, not a long answer.) I will also give the long answer.

ChatGPT said (short answer): Got it! AI has revolutionized qualitative analysis by enhancing pattern recognition, linguistic analysis, and sentiment evaluation, but it still struggles with context and bias. While it's a powerful tool, human oversight remains crucial.

ChatGPT said (long answer): Artificial Intelligence as a Tool in Qualitative Analysis: Historical and Contemporary Perspectives

Introduction

Artificial Intelligence (AI) has emerged as a powerful tool for qualitative analysis, revolutionizing the way researchers interpret and process data. While AI's role in qualitative studies is most pronounced in the present era, its development can be traced through historical advancements in computational methods, linguistics, and pattern recognition. This paper explores AI's role in qualitative analysis, both historically and in the present day, shedding light on its contributions and limitations.

Historical Context of AI in Qualitative Analysis

The roots of AI in qualitative analysis can be traced to early computational models and formal logic systems. The 20th century saw significant developments in pattern recognition and machine learning, leading to the creation of expert systems in the 1960s and 1970s. These early AI systems were used in fields such as linguistics, psychology, and sociology to analyze text, categorize information, and identify patterns in qualitative data.

One of the pioneering contributions was the development of natural language processing (NLP), which allowed early computers to analyze text-based data. Scholars in historical and linguistic studies began using computational methods to assess authorship, detect linguistic trends, and categorize historical documents. The development of AI-assisted statistical analysis in the

late 20th century further strengthened qualitative research by automating the identification of themes and narratives within large data sets.

AI in Qualitative Analysis Today

In the present day, AI has become an indispensable tool in qualitative research across various disciplines. Key advancements include:

1. **Natural Language Processing (NLP)** – Modern AI-powered NLP tools can process vast amounts of text, extracting key themes, sentiments, and linguistic structures. This has proven useful in historical document analysis, social media studies, and political discourse analysis.
2. **Machine Learning and Pattern Recognition** – AI algorithms can identify recurring themes and patterns in qualitative data sets, making them invaluable for fields like sociology, psychology, and market research. Researchers use AI to analyze interview transcripts, survey responses, and textual data from historical archives.
3. **Sentiment Analysis** – AI tools can assess public sentiment by analyzing qualitative data from news articles, social media, and online forums. This is particularly useful in political science, marketing, and social studies.
4. **Historical Data Analysis** – AI is increasingly used in historical research to digitize and analyze ancient manuscripts, providing new insights into linguistic evolution, cultural shifts, and historical events.
5. **Automated Thematic Analysis** – AI can automatically categorize qualitative data into thematic clusters, allowing researchers to focus on interpretation rather than manual classification.

Challenges and Limitations

Despite its advantages, AI in qualitative analysis faces several challenges:

- **Contextual Understanding** – AI lacks true human intuition and may struggle with nuanced interpretation of historical or cultural texts.
- **Bias in Data and Algorithms** – AI models trained on biased data can produce skewed analyses, necessitating careful validation.

- **Ethical Considerations** – The use of AI in qualitative research raises ethical concerns, particularly regarding privacy and the potential for misinterpretation.
- **Dependence on High-Quality Data** – AI requires well-structured and comprehensive data sets to perform effectively, which may not always be available in historical or qualitative research contexts.

Conclusion

AI has significantly transformed qualitative analysis, offering powerful tools for processing and interpreting textual and historical data. From early computational linguistics to contemporary machine learning models, AI has played a crucial role in enhancing research efficiency and uncovering new insights. However, challenges remain, requiring careful human oversight to ensure accurate and ethical application. As AI continues to evolve, its role in qualitative analysis is likely to expand, further shaping the methodologies used in humanities and social sciences.

A comment to the ChatGPT's answer: According to ChatGPT AI is a useful tool both to analyse decisions made in history and to help making decisions today. ChatGPT seems to understand the limitation of making decisions quite well. I would add that **the decisionmakers may not have enough knowledge or skill from the field to make right decisions**. Let's see how ChatGPT reacts to that comment. (I wanted AI to give longer answer to focus on decision making both in history and today.)

ChatGPT said: Decision-making, whether in history or the present day, has always been influenced by the knowledge and expertise of those in power. A key limitation, both then and now, is that decision-makers may lack sufficient understanding of the fields in which they make critical choices. AI can provide powerful analytical tools, but without proper domain knowledge, its insights may be misused or misunderstood.

Historical Decision-Making and Knowledge Gaps

Throughout history, rulers, generals, and policymakers have made decisions that shaped the world, often with incomplete or flawed knowledge. For example:

- **Military Strategy:** During the Napoleonic Wars, some generals underestimated the impact of logistics, leading to disastrous campaigns (e.g., Napoleon's 1812 invasion of Russia). A lack of understanding of supply chains and terrain conditions proved fatal.
- **Economic Policy:** Many monarchs and statesmen implemented policies without fully grasping economic principles. Spain's reliance on New World silver led to inflation rather than sustainable wealth, showing how decisions made without economic expertise could backfire.
- **Scientific and Technological Gaps:** The Tokugawa Shogunate's isolation policy (Sakoku) left Japan technologically behind Western powers. Decision-makers, unfamiliar with global advancements, failed to prepare Japan for the challenges of the 19th century, forcing a rapid and painful modernization after Commodore Perry's arrival.

Present-Day Decision-Making and AI's Role

Today, AI can process vast amounts of data to support decision-making, but it does not eliminate the need for human expertise. Some challenges include:

- **Blind Trust in AI:** Leaders may rely too much on AI-generated insights without understanding the limitations of the models. For example, predictive policing algorithms have been criticized for reinforcing biases in law enforcement.
- **Misinterpretation of Data:** AI in healthcare can identify patterns in patient data, but decision-makers without medical knowledge may misapply AI-driven recommendations, leading to ineffective or harmful treatments.
- **Economic and Political Risks:** AI is used in financial markets and policy analysis, but officials lacking economic training may misinterpret trends, potentially causing instability or poor regulatory decisions.

Balancing AI and Human Expertise

While AI enhances decision-making by processing complex qualitative and quantitative data, human judgment remains essential. The best outcomes arise when AI insights are combined with domain expertise, historical awareness, and critical thinking. The challenge is ensuring that decision-

makers understand both the strengths and limitations of AI, avoiding blind trust while still leveraging its potential.

A comment to the ChatGPT 's answer: The goal is to use AI to understand decision making both in more distant history and recent history. Using AI directly to analyse decision making is most likely problematic because there may not be enough information available to analyse it and that information may mislead us from the topic.

ChatGPT said: You're absolutely right. Using AI to analyze recent historical decision-making is problematic because of several key issues:

1. **Incomplete Information** – Many government decisions, military strategies, and corporate policies are based on classified or undisclosed data. AI models working with incomplete sources risk drawing inaccurate conclusions.
2. **Bias in Available Data** – News reports, political statements, and public records often contain biases. If AI relies on these sources, its analysis might reflect media narratives rather than objective reality.
3. **Contextual Misinterpretation** – AI lacks the human ability to understand nuanced political, cultural, and historical contexts. Decisions made in crises (e.g., financial crashes, military conflicts) often involve factors that AI might not recognize or properly weigh.
4. **Changing Perspectives Over Time** – Recent events are still subject to reinterpretation as new information emerges. For instance, economic policies or military actions might seem effective in the short term but fail in the long run. AI analysis based on early data could mislead rather than clarify.

Because of these factors, AI should be used cautiously as a support tool rather than a definitive analyst of recent decision-making. Historical context, expert interpretation, and access to full information are still essential for accurate assessments.

A comment to the ChatGPT 's answer: Those are very good points made by ChatGPT. Analysing decisions made in the recent history is very tricky because of lack of information. Some consequences of those decisions can be seen but the question is that were those consequences intended by the

decisionmakers? Let's ask ChatGPT why qualitative decision making is so important?

ChatGPT said: Qualitative decision-making is crucial in history because many of the most significant choices—whether in politics, warfare, economics, or diplomacy—are not purely based on numbers or hard data. Instead, they involve human judgment, interpretation of complex situations, and an understanding of culture, emotions, and motivations. Here's why it matters:

1. Context Matters More Than Numbers

Historical decisions are rarely made in a vacuum. Leaders must consider political landscapes, cultural traditions, public sentiment, and ideological factors, which cannot always be quantified. For example, Winston Churchill's decision to resist Nazi Germany in 1940 was not based on a purely military or economic calculation but on his qualitative judgment of Britain's resilience and the moral imperative to fight.

2. Uncertainty and Incomplete Information

History is full of decisions made with limited knowledge. Leaders cannot always rely on statistical models or past trends; they must make judgments based on experience, intuition, and an understanding of human nature. For instance, during the Cuban Missile Crisis (1962), John F. Kennedy had to interpret Soviet intentions without full knowledge of their decision-making process, balancing military intelligence with political and psychological analysis.

3. Human Emotions and Motivations

Historical figures often acted based on personal ambitions, fears, or ideological convictions. Decisions like Napoleon's invasion of Russia (1812) or Hitler's attack on the Soviet Union (1941) were not purely strategic but driven by overconfidence and underestimation of their opponents—factors AI or quantitative analysis might struggle to predict.

4. Diplomacy and Communication

International relations and negotiations are highly qualitative. The success of treaties, alliances, or peace deals often depends on trust, persuasion, and perception rather than just military or economic strength. Bismarck's diplomatic maneuvering in 19th-century Europe, which maintained Germany's position without war, was a masterclass in qualitative decision-making.

5. Ethical and Moral Considerations

Many historical decisions involve moral dilemmas, where numbers alone cannot determine the best course of action. Decisions like the abolition of slavery, civil rights movements, or humanitarian interventions required leaders to weigh ethical concerns alongside economic or political calculations.

Conclusion

While quantitative analysis is valuable for logistics, economics, and military planning, qualitative decision-making remains essential in history because human factors—context, emotions, ethics, and uncertainty—play a decisive role in shaping outcomes. Understanding historical decision-making requires not just looking at data but also analyzing leadership, perception, and the broader human experience.

A comment to the ChatGPT's answer: AI is bringing some very good points. In decision making both history and today there are many qualitative factors to understand why something happened it may be difficult to prove the exact contributions of those factors especially when judging relations between the circumstances in which decisions were made, decisions which were made, reactions to those decisions and events that happened. On good example to think is the fall of Soviet Union in the late 1980s and early 1990s because there weren't many people in early 1980s who expected that Soviet Union would fall. Events like that are prime examples which do have a lot of different kind of qualitative factors which do have both short and long-term consequences, and they may cause surprising results.

Let's ask ChatGPT how AI will help people to understand decisions made in history?

ChatGPT said: AI can help people understand historical decisions by analyzing vast amounts of data, identifying patterns, and offering new perspectives on

events. However, it must be used carefully to account for historical context and human factors. Here's how AI can contribute:

1. Pattern Recognition and Trend Analysis

AI can process large datasets—such as diplomatic correspondence, economic reports, and battle records—to identify hidden trends that historians might overlook. For example, AI can analyze trade records to understand the economic factors behind wars or political decisions.

2. Text and Speech Analysis

By analyzing historical speeches, letters, and documents, AI can detect shifts in rhetoric, sentiment, and political priorities. This can help historians understand how leaders justified decisions, such as the shift in U.S. policy from isolationism to intervention before World War II.

3. Simulation and Counterfactual Analysis

AI models can simulate alternative historical scenarios, helping scholars explore "what-if" questions. For instance, AI-driven war simulations could examine the potential outcomes of different strategies in major conflicts like the Napoleonic Wars or World War II.

4. Detecting Bias and Misinterpretation

Historical records often contain biases, either from contemporary sources or later historians. AI can compare multiple sources to highlight inconsistencies, helping researchers critically assess historical narratives.

5. Connecting Different Disciplines

AI can bridge insights from different fields—such as economics, sociology, and military strategy—providing a more comprehensive understanding of historical decisions. It can, for example, correlate climate data with historical famines and political instability.

Limitations and Challenges

- **Lack of Contextual Understanding:** AI can recognize patterns but lacks the human ability to fully grasp political and cultural nuances.
- **Data Availability and Bias:** AI's analysis depends on the data it is trained on, which may be incomplete or skewed by dominant historical narratives.
- **Ethical Concerns:** AI-generated interpretations could be misused to oversimplify or manipulate history.

Conclusion

AI is a powerful tool for analyzing historical decisions, offering new insights through data analysis, text processing, and simulations. However, it should be used alongside human expertise to ensure that historical context, ethical considerations, and qualitative factors remain central to interpretation.

A comment to the ChatGPT's answer: I admit that this is repetition of mentioned points, but it is essential to ask AI how it understands decision making in history and handling that matter in the historical context. This is important issue because the reader should be able to understand and to evaluate the capabilities of modern AI. To summarize this issue, I would say that the cooperation between the human user and AI is here to stay. To get the best possible result, it is vital to have **as advanced AI applications as possible**, and **intelligent and knowledgeable people** to use those applications. High levels in knowledge, high skills and high education improve what AI can provide to humans.

Chapter II: The Basics of AI and the decision-making process

Next, we should focus on understanding why did AI technology develop so rapidly during the first half of the 2020s?

You said: Why did AI technology develop so rapidly during the first half of the 2020s?

ChatGPT said: AI technology developed rapidly during the first half of the 2020s due to several key factors:

1. Advances in Computing Power

The growth of specialized AI hardware, such as GPUs and TPUs, allowed for faster and more efficient deep learning. Companies like NVIDIA and Google developed processors specifically optimized for AI workloads, significantly improving training times for large models.

2. Explosion of Data Availability

The digitalization of almost every industry provided AI with vast amounts of training data. Social media, online transactions, medical records, and scientific research all contributed to refining AI models, enabling them to learn more efficiently.

3. Breakthroughs in Neural Networks and Algorithms

Innovations in transformer models (such as OpenAI's GPT series and Google's BERT) revolutionized natural language processing (NLP). These advancements allowed AI to understand and generate human-like text, greatly expanding its practical applications.

4. Increased Investment and Competition

Tech giants like Google, Microsoft, OpenAI, and Meta heavily invested in AI research, creating a competitive environment that accelerated innovation. Governments also recognized AI's strategic importance and funded research in areas like military applications, healthcare, and cybersecurity.

5. Popularization of Generative AI

The rise of AI-generated content, including text, images, and even video, captured the public's imagination. Tools like ChatGPT and MidJourney demonstrated AI's creative capabilities, leading to widespread adoption in business, education, and entertainment.

6. Demand for Automation and Efficiency

The COVID-19 pandemic highlighted the need for automation in supply chains, healthcare, and remote work. AI played a crucial role in vaccine development, logistics optimization, and customer service, further driving investment in AI solutions.

7. Open-Source Collaboration

The AI community benefited from open-source projects, such as Hugging Face and TensorFlow, which made cutting-edge AI models and tools accessible to researchers and developers worldwide. This democratized AI development and accelerated innovation.

Conclusion

The rapid development of AI in the early 2020s was driven by technological advancements, increased data availability, strong financial backing, and high demand for automation. These factors created a self-reinforcing cycle of progress, pushing AI capabilities forward at an unprecedented pace.

A comment to the ChatGPT's answer: Like AI said there wasn't just one reason why AI development was so rapid during the first half of the 2020s, but there were several positive reasons from the point of view of development why did that happen. For that point it is a good idea to move to define AI shortly and how does it work.

You said: How would you define AI shortly?

ChatGPT said: AI (Artificial Intelligence) is the simulation of human intelligence in machines, enabling them to learn, reason, solve problems, and adapt to new information.

You said: How does AI work?

ChatGPT said: AI works by using algorithms and computational models to process data, recognize patterns, and make decisions. It typically follows these steps:

1. **Data Collection** – AI gathers large amounts of structured or unstructured data from various sources.
2. **Processing & Learning** – Using machine learning (ML) or deep learning, AI analyzes data to identify patterns and relationships.
3. **Model Training** – AI models improve their accuracy through repeated training, adjusting based on feedback.
4. **Decision Making** – AI applies learned patterns to make predictions, classify information, or generate responses.
5. **Adaptation & Improvement** – AI continuously refines its models based on new data and user interactions.

AI can be rule-based (following strict logic) or learning-based (improving through experience), making it useful in fields like automation, natural language processing, and robotics.

You said: What are the different levels of AI exactly?

ChatGPT said: AI is generally categorized into three levels based on its capabilities and intelligence:

1. Narrow AI (Weak AI)

- **Definition:** AI specialized in a single task or a limited range of tasks.
- **Capabilities:** Can perform specific functions like image recognition, language translation, or game playing but lacks general intelligence.
- **Examples:**
 - Chatbots (e.g., ChatGPT, Siri, Alexa)
 - Recommendation systems (Netflix, Spotify)

Can a machine help us understand the past? Can it shed light on the present?

In this groundbreaking exploration, Petri Luosto engages in a rich dialogue with AI; specifically ChatGPT; to examine the power and limitations of artificial intelligence in historical and qualitative analysis. From the decisions of Tokugawa Ieyasu and Napoleon to the complexities of modern geopolitics, Luosto tests how AI interprets context, language, and human judgment.

Combining deep historical insight with a clear-eyed look at cutting-edge technology, this book offers readers a rare blend of reflection, technical explanation, and philosophical inquiry. It invites historians, students, and curious minds to witness how AI can assist; not replace; our understanding of why people made the decisions they did.

This is not just a book about AI. It is a book with AI; part guide, part experiment, and part conversation with the future.

This summary was made by ChatGPT.

BoD

