Victorious Warriors // Searching the games played in the Romance of the three Kingdoms

Peter van Emde Boas

ILLC, FNWI, Universiteit van Amsterdam, PO Box 94242, 1090 GE Amsterdam Bronstee.com Software & Services B.V., Heemstede Dept. Comp. Sci. University of Petroleum, Chang Ping, Beijing, P.R. China peter@bronstee.com

Abstract. Your speaker has been invited to contribute a chapter in the forthcoming handbook of History of Logic in China on the logical and game theoretical perspectives on ancient Chinesee strategic theory. In preparation I have studied the ancient masters like Sun Tzu and Sun Bin, but also history texts and last but not least, the historic novel Romance of the three Kingdoms.

Game theory is a mathematical theory aimed at describing the behavior of agents in strategic interaction. The sources used give both strategic guidelines, and examples of instances where those guidelines were either used or violated. They contain many examples of stratagems - tricks used during warfare to fool or mislead your enemy.

However, in order to analyse such a story from a game theoretical perspective we better first find out what game actually has been played. And this is a question which is hard if not impossible to answer, based on the available information. How to reconstruct a game from a textual description of a single instance where the game has been played?

The problem is related to the literature study area called narratology. There one wants to produce a formal representation of the events described in a text. This is a non-trivial task. Our question adds another dimension to this problem.

In the talk I present an introduction where the problem area is described. Next I will give some examples of strategic recommendations of Sun Tzu, and compare these with the teachings given by von Clausewitz 2300 years later. I conclude with some illustrative examples of stories, and how they relate to the rules of Sun Tzu, and how they relate to games.

The bibliography below lists most of the sources I have used in my project at this stage; it is more extensive than needed for this presentation.

References

- 1. Carl von Clausewitz, Vom Kriege, Reclam, Stuttgart, BRD, 1980
- Carl von Clausewitz, On War, ed. Anatol Rapoport and transl. J.J. Graham, Penguin Classics, London, UK, 1968
- 3. Bill Fawcett, How to lose a war; more foolish plans and great military blunders, Harper, New York, 2009
- 4. Wikipedia, Horatii, http://en.wikipedia.org/wiki/Horatii, last accessed 20140330

- 5. Titus Livius, The history of Rome (Ab Urbe Condita), Books 1-8, transl. D. Spillan, available on the Gutenberg project at http://www.gutenberg.org/files/19725/19725-h/19725-h.htm , last accessed 20140330.
- Benedikt Löwe, Eric Pacuit & Sanchit Saraf, Analyzing stories as games with changing and mistaken beliefs, Rep. ILLC PP-2008-31
- 7. Luo Guanzhong, *Three Kingdoms*, vol, I, II and III, ed. and transl. Moss Roberts, Foreign Languages press, Univ. of California press, Beijing, China, 1994
- 8. Anatol Rapoport, The use and misuse of Gasme Theory, Scientific American, 207(6), Dec 1962, 108–118
- 9. Anatol Rapoport, Editors introduction, in Carl von Clausewitz, On War, [2]
- Ralph D. Sawyer, One hundred unorthodox Strategies, Westview, Boulder CO, 1996.
- 11. Sun Tzu, *The art of War*, ed. and transl. Thomas Cleary, Shambala Pocket Classics, Boston & London, UK, 1988
- Sun Tzu, The art of War, ed. and transl. Thomas Cleary, Shambala, Boston & London, UK, 1988
- Sun Tzu, De kunst van het oorlog voeren, ed. and transl. Roger T. Ames, Kosmos
 Z& K eds., Utrecht, Netherlands, 1993 (in Dutch)
- Sun Tzu, The art of War, ed. and transl. Ralph D. Sawyer, Barnes and Noble, New York, USA, 1994
- 15. Sun Tzu, *The art of War*, ed. and transl. John Minford, Penguin classics, Penguin group NY. New York, USA, 2002
- 16. Sunzi, *The art of War*, & Sun Bin, *The art of War*, Wu Rusong & Wu Xianlin and transl. Lin Wusun, Library of Chinese classics, Foreign Language press, Hunan peoples publishing house, Beijing, China, 1999
- Jiang Taigon (Lii Wang) The Six Strategies, ed. Kong Deqi and transl. Nie Songlai, Library of Chinese classics, Military Science publishing house, Shenzhen Jiaxinda Printing co., Shenzen, China, 2004
- The seven Military Classics of Ancient China, Ed. and transl. Ralph D. Sawyer & Mei-Chün Sawyer, Basic books, NY, New Yourk, USA, 2007
- Thucydides, History of the Peloponesian War, ed. M.I. Finley and transl. Rex Warner, Penguin books, London, UK, 1954
- Mastering the Art of War, Zhuge Liang & Liu Ji's commentaries on the classic by Sun Tzu, ed. and transl. Thomas Cleary, Shambala dragon editions, Boston, USA, 1989
- 21. The Dao of Strategy, Zhuge Liang (Kong Ming): The Hidden Dragon of The Three Kingdoms,
 - http://daoofstrategy.blogspot.nl/2012/11/zhuge-liang-kong-ming-hidden-dragon-of.html, last accessed 20140330
- 22. Stephan H. Verstappen, the thirty-six Strategies of Ancient China, China Books, San Francisco, USA, 1999
- 23. The Dao of strategy, Sun Bin: the art of Warfare (Military Methods) (5), http://daoofstrategy.blogspot.nl/2012/03/sun-bin-art-of-warfare-military-methods_05.html, last accessed 20140330.
- 24. Peking University; judge online for ACIP/ICPC, *Tian Ji, The Horse Racing*, http://poj.org/problem?id=2287, last accessed 20140405
- Mingming Leng & Mahmut Parlar, Game-theoretic analysis of an ancient Chinese horse race problem, Computers & Operations Research, 33 (2006), 2033-2055

- 26. Wikipedia, Records of the Grand Historian, http://en.wikipedia.org/wiki/Records_of_the_Grand_Historian, last accessed 20140330
- 27. Wikipedia Warring States period, http://en.wikipedia.org/wiki/Warring_States_period, last accessed 20140405
- 28. Wikipedia, End of the Han Dynasty, http://en.wikipedia.org/wiki/End_of_han_dynasty, last accessed 20140330
- 29. Wikipedia, Records of the Three Kingdoms, http://en.wikipedia.org/wiki/Records_of_the_Three_Kingdoms, last accessed 20140330
- 30. Wikipedia, Romance of the Three Kingdoms, http://en.wikipedia.org/wiki/Romance_of_the_Three_Kingdoms, last accessed 20140330
- 31. Wikipedia, Timeline of the Three Kingdoms period, http://en.wikipedia.org/wiki/Timeline_of_the_Three_Kingdoms_period, last accessed 20140330
- 32. Wikipedia, List of people of the Three Kingdoms, http://en.wikipedia.org/wiki/List_of_people_of_the_Three_Kingdoms, last accessed 20140330
- 33. Wikipedia, List of fictional people of the Three Kingdoms, http://en.wikipedia.org/wiki/List_of_fictional_people_of_the_Three_Kingdoms, last accessed 20140330
- 34. Wikipedia, List of fictitious stories in Romance of the Three Kingdoms, http://en.wikipedia.org/wiki/List_of_fictitious_stories_in_Romance_of_the_Three_Kingdoms, last accessed 20140330
- 35. Wikipedia, *Military history of the Three Kingdoms*, http://en.wikipedia.org/wiki/Military_history_of_the_Three_Kingdoms , last accessed 20140330
- 36. Wikipedia, Battle of Red Cliffs, http://en.wikipedia.org/wiki/Battle_of_Red_Cliffs, last accessed 20140330
- Wikipedia, Red Cliff (film), http://en.wikipedia.org/wiki/Red_Cliff_(film), last accessed 20140330
- 38. Pacific Standard; the Science of Society, Michael Todd, China lost 14 milion people in world war II; why is this forgotten ?, http://www.psmag.com/navigation/politics-and-law/china-lost-14-million-people-world-war-ii-forgotten-66482/21030917, last accessed 20140405.