Chapter 4
Avatar–Based Modeling of Digital Communication in Political Conflicts

Ekaterina Yuryevna Aleshina
Penza State University, Russia

Vardan Mkrttchian
https://orcid.org/0000-0003-4871-5956
HHH University, Australia

Leyla Gamidullaeva
https://orcid.org/0000-0003-3042-7550
Penza State University, Russia

ABSTRACT

Many of the findings within the data have generated more questions than answers; but in doing so, illuminated several paths of further investigation that may provide greater insights into the complexities of stabilizing troubled states. This chapter then, is a starting point on a journey to discover more effective means to deliver humanitarian and development aid to conflicted societies without doing greater harm in the process. Holland discusses the utility of flight simulators in helping commercial airline pilots experience a variety of scenarios that would be unthinkable to expose passengers to in the real world. The value of the pilot's experience in the simulator depends on how closely the simulator matches the aircraft it models. With even greater numbers of lives and resources at stake, utilizing agent-based modeling as a policy simulator would allow leaders to experiment with numerous response and intervention strategies in a very short period of time.

INTRODUCTION

Pacification, nation building, stability operations, counterinsurgency operations – these are all various names for the activities a victorious military force finds itself undertaking at the cessation of hostilities. This is especially true of the belligerents in a civil war. The international community steps in in an effort to contain the hostilities and deliver humanitarian aid to the refugee population that is inevitably created by the hostilities. Frequently the outcome of a war cannot truly be known for several years after the guns have fallen silent. Does the defeated state rebuild its capacity for governance and join with its former antagonist in peaceful and mutually prosperous relations or does it descend into the Hobbesian hell of a failed nation state; a pariah to the world community? There have been examples of errors made by victors, such as the Treaty of Versailles, that have set the stage for future conflicts that have lessons applicable to humanitarian interventions initiated by the international community.

Troubled nations pose a complex dilemma for policy makers in international organizations. The humanitarian urge to intervene to relieve suffering is strong but it also has a dark side. The delivery of aid to a distressed population in a troubled nation is never neutral: there are always winners and losers. The difficulty in formulating policy lies in the complexity of these types of scenarios. The cause and effect are frequently widely separated in either time or space. Compounding the complexity are the multiple feedback loops surrounding the problem. It is frequently impossible to determine which feedback loop provided the correct linkage between cause and effect until the scenario has played itself out.

The purpose of this study is to identify behavior patterns for the various entities operating among the population where there are varying degrees of stability operations being conducted and utilize these patterns in creation of behavioral models. Agent-based modeling is derived from complexity science. If complexity cannot be readily defined, some of the behavioral elements can be defined. The behavioral elements derived from the literature review are utilized to create the behavioral rules that the agents, or adaptive actors utilize in the simulations. Avatar- Based modeling utilizes five principles that guide development:

1. Simple rules guide agent behavior and can generate complex behaviors;
2. There is no single agent that directs the other agents – there is no agent hierarchy;
3. Each agent has bounded rationality in that each can only respond to local situations in the environment and other agents in close proximity;
4. There is no global rule for agent behavior.

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