HCI for Peace: Visualising Poverty, Unemployment, and Immigration

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Abstract
There is an increasing interest in immigration and an ongoing discussion on wether it is a security issue or not; by social scientists, policy makers, and peace activists alike. Immigration is related to unemployment and poverty, and cannot be studied alone.

In this paper is proposed a twofold role that HCI can play concerning the above. Firstly, in suitably visualising data in order to provide information to social scientists, policy makers, and peace activists. Secondly, in presenting a narrative of the data and their visualisation in a usable GUI.

This proposed role of HCI might be applicable to other fields of discourse around peace.

Keywords
Multi-agent, simulation, visualisation, poverty, unemployment, immigration.

ACM Classification Keywords
H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous. I2.11. Distributed Artificial Intelligence: Multiagent systems.

General Terms
Design, Human Factors.

HCI for peace

We present ideas for future research including the use of technologies, methods and approaches in which HCI may play a positive role. In particular, a visualisation method and a GUI design are discussed as a tool to help represent immigration narratives, aiming at recovering from conflict.

This idea is based on [11, 16, 18], and has further been explored by the author in [14]. The author's previous work in [12, 13], although not on the exact topic, has greatly contributed in the formation of the ideas of [14].

Since in the next section is presented an idea for future research, feedback and constructive criticism is sought in order to evolve this idea. Moreover, the rationale and the results of [12, 13, 14] might offer useful insight to other projects.

Visualisation and GUI for immigration narratives

Immigration has many causes and is a complex phenomenon. This leads to multiple views of the issue, ranging from the securitisation of immigration to activist counter-narratives [11]. Even some identifiable causes of immigration, like poverty, are considerably complex themselves, and quite often the notion of *relative poverty* is used [6].

Given the complexity of the problem, if we want to study immigration, poverty, and unemployment (as a link between the two) we can see two ways: one can gather real data, or one can run simulations [7, 10].

Visualising multi-agent simulations

Real data may have credibility issues beyond the scope of this paper, so only simulation data will be addressed. One can simulate poverty, unemployment, and immigration data as in [18], using the multi-agent methodology of [4, 5] and tools such as Mason [15].

However, the results of simulations can be hard for a peace activist, policy maker, or social scientist to understand, and may need to be suitably visualised. In [14] many existing solutions from [2, 3, 8, 9, 17] are examined and it is explained why each of those is not solving the whole issue. Still, each has useful elements, which help the creation of the eight visualisation principles for immigration's simulations [14, 18].

A GUI for immigration

In order to allow information extraction from the visualised data, a GUI that will present a narrative can be built. Such a GUI can follow the principles of [16] and present information in a "news summary" multimedia design, since immigration narratives are spacio-temporal. Also, in [14, 18] the simulation data are treated as spacio-temporal, according to the methodologies of [1, 2]. Of course, such visualisations and GUIs need to be user-tested and evaluated.

Conclusions

Overall, the creation of an user-interface for a "news summary" of immigration simulations is introduced, and the necessity to suitably visualise the underlying data; hoping that it will lead to understanding about poverty, unemployment, immigration, and the relationships among them.

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