Prospecting Socially-Aware Concepts and Artefacts for Designing for Community Resilience

Lara S. G. Piccolo
Knowledge Media Institute
The Open University
Walton Hall
Milton Keynes, UK MK76AA
lara.piccolo@open.ac.uk

Harith Alani
Knowledge Media Institute
The Open University
Walton Hall
Milton Keynes, UK MK76AA
h.alani@open.ac.uk

ABSTRACT

Defining flexible and consistent methods and artefacts to design for social impact is a current challenge for HCI. The ephemeral and vulnerable conditions of people living as refugees add even more questions about the suitability of design methods to the complexity of real — and many times tough — life . In this position paper we briefly introduce two concepts embraced by the Socially-aware Design Approach, the Semiotic Onion and the Basic Block of Culture. We then reflect about the potential contributions of applying these concepts and artefacts to inform design for boosting community resilience of people living as refugees.

KEYWORDS

Community resilience, Human-computer interaction, Socially-aware Design, Refugees

1 INTRODUCTION

For using the power of technology to help tackling contemporary social challenges and threats, new perspectives have constantly been added to Communities & Technology and Human Computer Interaction research, including the Socially-Aware Approach[1], design "in the wild" [9], social technology for "common good" [10], to name a few. In different ways, these perspectives are pursuing a positive social impact, and for this reason they require an understanding — from inside — of the sociocultural context, going beyond the technical aspects of design.

We subscribe to the idea that HCI practitioners' contribution to social issues, such as the refugee crises, should go beyond introducing technical innovations. We should also work to provide adequate methods and artefacts to support other designers in thinking beyond individual experiences with technology, also addressing sociocultural aspects and the consequent social impact.

In this position paper, we briefly introduce the Socially-Aware Design approach [1], proposing a discussion on how some concepts and artefacts could help mediating the technology design for and with a group of people living as refugees. This reflection is situated as part of a research project[1], which aims at building a collective awareness platform for community resilience in situations of crises.

---

[1]www.comrades-project.eu

2 DESIGNING FOR COMMUNITY RESILIENCE

We rely on the broad concept of *community resilience* to understand the role of a technology when helping groups of people to overcome crises situations.

In our research, we define community resilience driven by technology as a process of "*continuously enabling a broad range of actors to acquire a relevant, consistent and coherent **understanding** of a stressing situation, **empower** decision makers and trigger **community engagement** on response and recovery efforts, including long term mitigation and preparation.*" [3].

In the literature, some resilience strategies emphasize coping or returning to conditions that existed before a crises event. For refugees, most of the times returning to how things were before may not be an option. Neither is remaining displaced and vulnerable until the next crisis. Resilience strategies then must be built on the inherent creativity and aspirations of people in these communities to transform their lives towards thriving [5].

Berkes and Ross [2] point out some characteristics that contribute towards community resilience which, from our perspective, should be considered in design. They are: values and beliefs, social networks, engaged governance, positive outlook, community infrastructure, diverse and innovative economy, people-place relationship, knowledge skills and learning, and leadership. The authors argue that communities do not control all of the conditions that affect them, but they have the ability to change many of the conditions that can increase their resilience [2].

3 SOME NOTIONS OF THE SOCIALLY-AWARE APPROACH

The Socially-Aware Computing [1] is an approach to inform ICT design with sociocultural aspects, aiming at responding to the true needs of society. It provides us with methods and artefacts to identify the forces that are in play for the stakeholders, influencing the way people perceive things in the world, the way they interact with things and with others, their expectations, etc.

In this paper we shed lights on two independent notions carried out by the Socially-Aware approach: the "Semiotic Onion" [11] and the Building Blocks of Culture [4].

3.1 The Semiotic Onion

The Semiotic Onion [11] supports designers to make sense of a problem in a broader way. It suggests 3 layers of information related to a technology introduction and its impact. The layers are represented using the metaphor of an onion. In the core of the onion

are the technical aspects, surrounded by a formal level, where rules regulate the way people act. The formal level is, in turn, immersed in an informal level made up of cultural aspects, where people's beliefs, values, intentions and motivations are. The three levels are constantly influencing each other, from the moment the technology is conceived until the appropriation by a social group [1] [11].

According to this Red Cross report [5], building resilience requires partnerships with different stakeholders: communities, humanitarian actors, governments, private sector, etc. It forces any player, including technology designers, to commit to working together in a spirit of true collaboration. The 3-layer view provided by Semiotic Onion place the designer "in the problem", and helps to understand the connection between elements and some stakeholders.

Based on previous experiences with communities in crisis [3], and considering the resilience elements pointed out by [2], we represent in Figure 1 some main forces that potentially influence community resilience in the informal, formal, and technical levels.
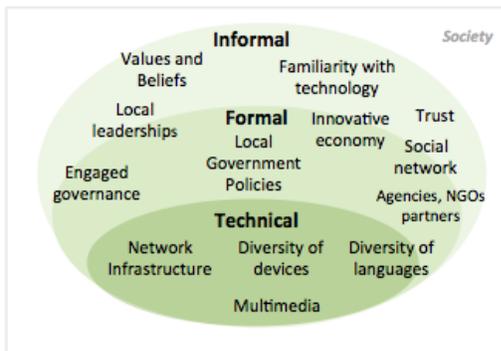

Figure 1: "Semiotic Onion" of designing for resilience in the context of refugees

At the informal level are different degrees of familiarity with technology, personal values and beliefs. Still in the informal level, the platform should be perceived as something trustworthy and reliable by all users and stakeholders. To engage people with the technology, the local leadership, which is both in the formal and informal levels, should be taken into account. The platform should formalise important aspects that boost community resilience, somehow promoting social engagement, social networks, ways to boost innovative economy [2], always in line with local government policies and in partnership with the work performed by agencies and NGOs. The technical layer represents some challenges like the network infrastructure, diversity of electronic devices in play, the need to address multimedia, such as voice and text, also the need to deal with diversity of languages or dialects.

This representation, though, is preliminary with the objective to illustrate the suitability of the artefact. It should evolve involving people from communities of refugees and key stakeholders to better reflect their reality. Once this overview of the problem in sociotechnical terms is built, the design can move towards applying more specific artefacts that will directly influence decisions.

3.2 Building Blocks of Culture

The main challenge in the Computer Science domain is to properly address the informal level of the Semiotic Onion. The way Hall understands culture [4] can help us with that task by identifying evident cultural aspects of a social group that may lead to design decisions [7]. Hall argues that any culture can be characterised, analysed and compared through a combination of 10 areas that he named Basic Building Blocks of Culture:

- Interaction: describes how people in a group relate with their environment.
- Bisexuality: refers to differentiation according to gender, age, race, etc.
- Association: how people interact with others.
- Learning and acquisition: how the knowledge is transmitted (from a biological origin to formal and informal learning).
- Defense: the way people defend themselves from hostile forces from nature and within the human society.
- Play: aspects of joy, competition, affection.
- Exploitation: refers to adaptations, including the material ones, to exploit the environment.
- Temporality: involves cycles and rhythms, how people deal with time.
- Territoriality: regards taking possession, use and defence of a territory.
- Subsistence: includes from individual food habits to the economy of a country.

The Basic Blocks of Culture [4] have been applied to communities in different contexts to inform ICT design for them [7]. In [8], for instance, they shaped the analysis of an ethnographic study and results of a quantitative survey. While in [6], they framed participatory activities around identifying and discussing human values through a new design artefact called Value Pie [6].

Independently of the humanitarian issues behind, it is evident that the condition of living as a refugee strongly impacts some basic blocks of culture. People from different background share threats to the way the used to deal with Territoriality, Defense, or Subsistence, for example.

Thus, we believe this sociocultural approach can help HCI practitioners to mediate discussions with groups of people living as refugees in three different ways: first to evidence important shared values in place in their current community life, so that any technology introduction would be aligned with them; second, for better understand the aspects of life threatened by current living conditions, i.e. Defense, Territoriality, etc.; and last but not least, to identify and address aspects that can be associated with the resilience of the group, such as the way people relate to each other and with the governance (Association), how they teach and learn (Learn and Aquisition), among other aspects pointed out by [2].

4 CONCLUSIONS

Based on previous experiences of designing for communities and pursuing a social impact, this position paper selected two concepts and design artefacts from the Socially-Aware approach that we believe would be suitable to be applied with communities of people living as refugees. The first artefact is for providing a general picture,

mapping the socio-technical elements of a design problem. The second suggested approach supports the identification of strong cultural aspects that may influence design decisions. This approach could benefit the design in different way, both revealing exiting values and threats in the status quo, as well as those that could be strengthen to boost community resilience. Applying these concepts and artefacts to co-design with a group of refugees still demands reflection in theoretical and practical terms, which will be addressed by further research.

REFERENCES

[1] M. Cecília C. Baranauskas. 2014. Social Awareness in HCI. *interactions* 21, 4 (July 2014), 66–69. DOI:http://dx.doi.org/10.1145/2621933

[2] Fikret Berkes and Helen Ross. 2013. Community Resilience: Toward an Integrated Approach. *Society & Natural Resources* 26, 1 (2013), 5–20. DOI:http://dx.doi.org/10.1080/08941920.2012.736605

[3] Tina Comes, Stina Toerjesen, and Kenny Meesters. 2016. *D2.1 Requirements for boosting community resilience in crisis situation.* http://www.comrades-project.eu technical report.

[4] E.T. Hall. 1959. *The silent language.* Anchor Books.

[5] International Federation of Red Cross and Red Crescent Societies 2016. *World Disasters Report - Resilience: saving lives today, investing for tomorrow.* International Federation of Red Cross and Red Crescent Societies.

[6] Roberto Pereira and Maria Cecilia Calani Baranauskas. 2014. Value Pie: A Culturally Informed Conceptual Scheme for Understanding Values in Design. (2014), 122–133.

[7] Lara Piccolo and Roberto Pereira. 2015. *Clarifying culture in technology design: what, why, and how we think about it.* http://oro.open.ac.uk/id/eprint/43612

[8] Lara Piccolo, Arno Scharl, and Cecíliat Baranauskas. Design of Eco-Feedback Technology to Motivate Sustainable Behavior: Cultural Aspects in a Brazilian Context.. In *Proc. of Intern. Conf. on Infor. Resources Manag. - Conf-IRMâĂŹ12.*

[9] Yvonne Rogers. 2011. Interaction Design Gone Wild: Striving for Wild Theory. *interactions* 18, 4 (July 2011), 58–62. DOI:http://dx.doi.org/10.1145/1978822.1978834

[10] Douglas Schuler, Fiorella De Cindio, and Anna De Liddo. 2015. Encouraging Collective Intelligence for the Common Good: How Do We Integrate the Disparate Pieces?. In *Proceedings of the 7th International Conference on Communities and Technologies (C&T '15).* ACM, New York, NY, USA, 157–159. DOI:http://dx.doi.org/10.1145/2768545.2768562

[11] Ronald Stamper. 2001. *Organisational semiotics: Informatics without the computer? Information, organisation and technology: Studies in organisational semiotics.* Academic Press, NY.