Proceedings of the COOP 2014
Workshop on Collaborative Technologies in Democratic Processes

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# Table of Content

**Workshop Summary** ................................................................. 6  
Olav W Bertelsen  
Susanne Bødker  
Fiorella de Cindio  
Volkmar Pipek

**Socio-technical infrastructuring for participation** .......................... 8  
Maria Menendez  
Silvia Bordin  
Antonella De Angeli

**Interactive Performances as a Means of Social Participation and Democratic Dialogue** ................................................................. 11  
Louise Barkhuus  
Chiara Rossitto  
Love Ekenberg  
Rebecca Forsberg  
Willmar Sauter

**Enabling new democratic processes in Schools** ............................ 21  
Love Ekenberg  
Patrik Hernwall  
Konrad Tollmar

**Supporting Election Work: Infrastructures for Knowledge Sharing** ......................................................................................... 34  
Nina Boulus-Rødje  
Olivier Bélanger

**Mobile Participation in Urban Development** ................................. 37  
Carolin Schröder

**Overcoming Residents Opportunity Apathy in Danish Social Housing Democracy** ................................................................. 45  
Olav W Bertelsen

**First Steps towards the Development of Convivial Tools in the Digital Age beyond the Facebook Model** ............................................. 55  
Federico Cabitza  
Denise Cornetta
Consultation as education: a Learning Management System for online open consultations on bioethical issues .......................... 66
   Giuseppe Schiavone
   Fiorella De Cindio

E-Voting, the Case for Decentralised Systems ......................... 82
   Stéphane Frénot
   Stéphane Grumbach
   Damien Reimert

Methodological and ethical implications of testing alternative designs for technologies supporting democratic processes .......... 85
   Mauro Cherubini

Towards Societyware: Evaluation of an online petitioning system for parliaments ......................................................... 88
   Torben Wiedenhöfer
   Oliver Heger
   Volkmar Pipek

Explaining deliberativeness. The design of readers’ comments ................................................................. 99
   Tobias Zimmermann

An experimental approach to explore discourse architectures ............................................................. 107
   Matti Nelimarkka

Preliminary investigation of a tool for collaborative auditing of public policy argumentation .................................. 111
   Richard N. Griffiths

About the authors ........................................................................ 120
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Workshop Summary:
Collaborative Technologies in Democratic Processes

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Introduction

The present collection of papers forms the proceedings of a full day workshop on Cooperative Technologies in Democratic Processes - Beyond e-Voting. The workshop took place in conjunction with COOP 2014 on May 27, 2014 in Nice, France.

The workshop was motivated in the observation that much work on technology for democracy has been concerned with various forms of e-Voting. While information technologies, including the Internet, have hit high penetration in most western countries, opening for wide application of cooperative technologies in civic life, such as local democracy, public debate etc. E-Voting systems do not support new forms of engagement in the development of alternatives, they do not foster active citizenship. Contrarily they maintain a principle of a political elite developing the politics and the grey masses voting for a few fixed options. Thus, there seems to be a need in civil society organizations, as well as in new political movements, volunteer work, non-government organizations etc. for technologies for collaborative deliberation. The goal of the workshop was to better understand
technology support for forms of democracy such as direct and deliberative varieties by discussing the concrete cases and technologies and by exploring conceptual and technical frameworks and approaches.

The workshop attracted a broad range of participants. The day was organized as four thematic panels discussion 3-4 papers each: Arrangements, Engagement, Protocols and Discourse

We want to thank all the participants and co-authors for contributing to the workshop. We also want to thank the organizers of COOP 2014, not least the workshop co-chairs, for providing great facilities.

Olav W. Bertelsen, Susanne Bødker, Fiorella de Cindio, Volkmar Pipek
Socio-technical infrastructuring for participation

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Abstract. In this position paper we elaborate on our experience in creating a socio-technical infrastructure to support active engagement of students in a design project run in an Italian University, a context characterized by limited possibilities for direct participation. We believe that active participation needs to be supported by a receptive context, whose establishment can be encouraged by an effort of social and technical infrastructuring.

Innovation milieu

Current approaches to social innovation may demonstrate considerable weaknesses when stretched to fit the public sphere (Dalsgaard, 2010), for instance in terms of context. Each initiative for active civic engagement is in fact conditioned by the innovation milieu in which it is placed and by the specific characteristics of the latter. Our case study is set in Italy, a country which is increasingly disengaging from participation in public matters: this attitude is clearly witnessed by the number of voters, which fell from 94% in 1976 to 75% in 2013. This disengagement is also visible in other public, more local institutions:

1. http://elezionistorico.interno.it/
for example, at the University of Trento, only 17% of the students participated in the last elections to choose the student representatives. As for PhD candidates, last elections at the Computer Science department had a turnout of only 9%. In this context, a number of initiatives subsuming active and democratic participation have been launched: among these, the *Smart Campus* project tries to actively engage students in participating to campus matters.

The Smart Campus project

The *Smart Campus* project was born two years ago in order to empower the local University students to more actively contribute in designing and developing services for their own community, fostering their participation in campus matters; at the same time, the project aims to build a socio-technical infrastructure for the local Province to establish a Living Lab on the territory. The University campus acted as the playground to experiment with a vision emphasizing the role of the community as decision-maker and service-builder. The project unfolds on concepts of social innovation (Björgvinsson et al., 2010) and experiments with an extreme form of PD (Ehn, 1998) leading to participatory development, where students designed and coded mobile applications fulfilling their own needs by leveraging on the provided technical environment.

The role of the students’ community, which now counts approximately 500 members, evolved during the project. At the beginning, students were participants of user studies in order to understand what issues in their opinion were negatively affecting their daily experience of academic life; their role was constrained to that of testers and informants, as they were denied a role in decision-making. As time passed, however, the socio-technical infrastructure started to shape, thus influencing the milieu: a service platform was developed and activities for seeding a culture of participation and ensuring institutional support were undertaken. As a result, students now have a stronger voice in the design and decision making process. For example, a mobile app about the canteen services, called *iFame*, has been designed and developed entirely by students, with the organizational support of the *Smart Campus* staff: *iFame* has been released to the whole of the University students a few months ago and is generating a community of its own, which rates the food served at the campus canteens. An application for student assessments of the educational offering is currently under development in a similar environment as well. This suggests that we succeeded in creating a space for community-based development, and at the same time in creating a receptive environment for participation.
References


Interactive Performances as a Means of Social Participation and Democratic Dialogue

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Introduction

In this position paper we present our ongoing research in relation to cultivating democracy and civic participation through the writing and performance of interactive theater experiences\(^1\). We provide an example of a performance that facilitates audience participation through expression and sharing of opinions and emotions, by means of digital technologies. The performance leads to further discussion within the community and inspires more artistic and theatrical experiences in this context.

Related Literature

Over the last years, research has investigated the role of digital technology as a means of social inclusion (Warschauer, 2003). For instance, a number of projects have combined a focus on social issues of global mobility with the exploration of how technology can support various social relationships within city contexts. By drawing on the notion of cities as isolating places full of strangers, research has focused on how technology can enable connections between proximate strangers (Yukari, 1998), or facilitate the emergence of latent social networks in public spaces (Satchell, 2006). Another strand of research has been concerned with exploring how Information Technology can promote participation in “official”

\(^1\) This workshop paper is partly based on another article currently under review (Ekenberg et al. 2013).
democratic processes, such as elections and civic participation (i.e. De Cindio et al., 2007), and how computational artifacts can promote a direct dialogue between people and local institutions (i.e. Ranerup 2000). Research carried out in the German context has investigated, instead, the role of technology in promoting meetings between communities of immigrants through the organization of intercultural Computer Clubs (Stevens et al., 2004). The organizations of computermediated activities (i.e. documenting family history, sharing experiences about local neighborhoods) were occasions for people to address complex issues of identity building and knowledge acquisition. Similarly, the European Project Puente (Lentini et al., 2009) has targeted different social groups (migrants, local citizens, school children and teenagers) and institutions (public schools, refugee centers, unemployment centers, etc) to explore how participation in creative activities, such as the organization of photo exhibition about the local territory, could help establishing a dialogue between people and their territory and, thus, nourishing a sense of identity connected to the place itself.

Where much research focuses on official democratic structures and participation in official processes, we look at how people can be empowered to express their feelings and opinions in the context of cultural artistic experiences that they are able to participate in. We now continue with our specific case of an interactive theatrical experience.

Interactive Theatrical Experiences

In our project we investigate how inclusion and participation in the creation and design of interactive performances can encourage civic participation, particularly in inter-cultural areas of the city. Our collaboration with RATS theater is facilitating this research through its use of novel methodologies for inclusion of local community members in its creative process as well as the actual performance. We continue by describing the production of Antigone’s Diary as it appears to the participating audience. After describing first experiences through observation we reflect both on the theoretical implications of this multimedia performance and its outcome in terms of civic engagement and its potentials for public decision making.

Antigone’s Diary

Antigone’s Diary (Forsberg, 2012) takes place in Husby, a suburban area northwest of Stockholm. The subway ride from the city centre takes almost half an hour. In May 2013, Husby came to international attention as a result of a week of riots: young men roamed the streets and burned cars, threw stones at the police and shattered shop windows. These riots were reported world-wide and frequently compared to the outbursts of violence in the suburbs of Paris in 2005 and 2007. The unrest in Husby had ostensibly been attributed to local indignation following
the police’s murder of a 69-year old man. As is often the case in such incidents, the reasons are much more intricate.

Husby was developed and built by the Stockholm City Council in the early 1970s and the first tenants moved in around 1974. The subway station was opened in 1977. At the time of writing, about 12,000 people currently live there, and of these 83% are immigrants or the children of immigrants. The suburb contains two elementary schools, one school for the upper grades of the compulsory school system, a library, a sports hall and an ice-hockey hall as well as a very popular indoor aqua park (with swimming pool, wave machine and water slides). High unemployment and low education have turned Husby into an immigrant ghetto. This picture is enhanced by Husby’s proximity to another suburb of a very different kind: Kista.

Kista might be described as the Silicon Valley of Swedish computer engineering: it features a conglomerate of world-known technological industries, such as Ericsson, IBM and Microsoft, as well as more than 1,000 businesses and incubators working within the area of computer and system development. The computer departments of Stockholm University and of the Royal Institute of Technology are located there. About 25,000 employees and thousands of students work in Kista. The social standard of this suburb becomes obvious when one arrives by subway and has to pass through Kista Galleria, a large shopping mall featuring a significant number of fashionable global brands.

Husby may be the next stop after Kista on the subway’s blue line, with only a field separating the two locations. They are, however, in many ways, a whole world apart. Coming out of the subway in Husby, there is no shopping mall, but a rather narrow square with some private and public enterprises: a pizzeria, a kebab restaurant, an Asian grocers, a dry-cleaner, a pharmacy and a doctors’ surgery, a day centre for aging Iranians, a public assembly hall. On the square and the adjoining streets, women of all ages go about their business, wearing shawls and niqabs, while groups of men sit on some of the benches chatting in the sun.

The performance of Antigone’s Diary always begins right in the middle of Husby’s central square, where a little podium with some odd posters marks the place where the audience gathers. Some of the spectators come from the subway, but most members of the audience are teenagers from the local schools who have been especially invited to be part of the piece (see picture). Although these youngsters instinctively know how to download the application they are told they need for this production, many prefer to use the mobile-phones that are provided by the producer: they have split earphones so that two participants can share one phone and thus share the experience, which often seems preferable to most of the school-age children who participate in the production. Whenever the participants are ready, they push their start button and the performance begins. The voices that the ‘spectators’ hear are pre-recorded by professional actors, who are not present at the scene. The participants have to imagine the characters — what they look like, what they are wearing and their behavior implies — according to the expressive signs of the sound track. After a short prologue that invites them to join in the search for Antigone, the first scene plays around the podium in the square. Now, the participants hear the voice of a guard who urges both Antigone and the ‘ancient’ chorus who are also present through the headphone to remove the sculpture on the podium. Most of the young
members of the audience – usually about 30 participants at any one time – probably know little or nothing about the myth of Antigone, so they take in all the fictional information they hear on their mobile-phones. The imagined characters of the play are said to have no permission to build anything on the square, but they maintain their right to support Antigone’s idea of beautifying their suburb. The chorus gets angry about the guard’s stubbornness and Antigone asks the participants ‘What makes you angry?’ Now the display of the mobile-phone opens for a text message that can be sent in response to the question. This opportunity is much welcomed, especially by the young participants who immediately tap in their comments. Those who share the phone try to agree on what their message should be. As soon as the text has been sent, the participants can scroll the responses of other members of the audience, including those from earlier performances. Thus the collective answers to the question become part of the information that the performance transmits.
Meanwhile the participants move to the second performance space – some manage to write while they are walking – following the GPS map on their display. On the one hand, the group walks in a collective movement, but on the other hand each participant or group of participants choose their own pace. As they walk they listen to music and only when they arrive at the designated location does scene number two start in their earphones. This second scene is located at the schoolyard and the recording they hear imitates the loudspeaker voice of a headmaster, but in the play it is Creon who speaks. He addresses the citizens of Thebes, friends and students, and tells them that Eteocles has been buried and that Polynieces will remain unburied to be eaten by dogs and birds. Sophocles’ tragedy remains present in this contemporary narrative. Whoever defies this order will be condemned to death. Antigone is upset and her voice in the earphones asks the participants ‘When is it permissible to refuse an order?’

Scene number three plays in the bedroom of Antigone’s stepmother Eurydice, the wife of Creon. This time the outdoor location has little to do with the fictional environment. A concrete wall has been roughly painted so that a window might be pictured, but the listeners need to use their imaginations to picture this scene. Antigone’s stepmother is asleep and not willing to engage in Antigone’s worries about the unburied Polynieces. The question she asks the participants is: ‘When do you feel lonely?’

The fictional bus stop where scene four takes place and the Cultural Centre of scene five will have to be imagined by the listeners because at that point they are walking on a nondescript path within Husby’s housing estates. In scene six, when Antigone buries her brother and speaks to the dead body in a moving monologue, the group has come to a park, where some roughly hewn stones with inscriptions actually evoke a graveyard. In the following scene Antigone meets Haimon in a shopping mall, here played outside a grocery shop. As with several other locations, only some colorful stripes hanging from a rope between lamp-posts point to this as the place of the scene. In scene nine the chorus fuses lines from Sophocles’ play with descriptions of the local environment. Antigone responds with a significant question: whether Husby subway station is the first or the last stop on the blue line. In the next fictional scene Antigone is taken by the police and pushed into a police car. When a crowd approaches the car, the officers notice a fire in a parking lot. They decide to take Antigone to a disused subway station – the grave, in which Sophocles’ Antigone is buried alive. For local participants the nameless, disused station is a recognizable referent, a place of fear and to be avoided. For the participants, the conjuring of this station creates a palpable sense of the horror of Antigone’s fate.

The twelfth and final scene brings the scattered group back to the square. The listeners hear mass protesters shouting in Arabic – using recordings from the events in Cairo’s Tahrir Square in 2012 – demanding the end of Mubarak’s dictatorship. Haimon whispers the last question about what freedom means to each individual participant. The responses to this question stretch from simple statements such as ‘summer vacation’ over ‘democracy’ and ‘justice and equality’ to quoting Janis Joplin’s famous ‘freedom is just another word for nothing left to lose.’
Method

A student researcher examined the content and character of all the 714 text messages that were sent in during the performances. The messages were divided into five categories, of which the main category consisted of proper answers to the questions that were asked. No less than 617 or 86.4% of all the texts that were sent in were indeed reflections and responses to the questions that concluded each scene. Considering that a small number of messages were sent by mistake or otherwise unreadable and that some responses concerned the performance as such rather than a specific question, only about 5% remain for the category of making fun of the questions. But even the small percentage of participants who ridiculed the topics bothered to send text messages; this points to the fact that they were obviously listening to and engaging with the performance.

Participation through text

The seriousness with which the audiences encountered the performance is very well expressed in the text messages that were sent off in response to the questions. The question after scene three – ‘When do you feel lonely?’ – serves as example: ‘when I am alone’ – ‘when one cannot meet the family’ – ‘in the evening’ – ‘when my dad leaves my bedroom’ – ‘at three o’clock at night, sometimes’ – ‘when nobody stands up for me’ – ‘when I am with a lot of other people and I only think of how little we share with each other’ – ‘when one is solo para siempre’ – ‘when someone you trusted betrays you’. These responses showed a surprising level of engagement by the high schoolers who wrote them, inspired by the play.
Since each participant also could scroll the responses of other people, these messages became part of the ‘manuscript’. Thus the audiences were not only interacting with the performance, they were also interacting with each other. Here the sense of a collective experience became manifest – collective also in the sense that the text messages were anonymous or at most tagged with a common first name (this is excluded in the published text). Again, the seriousness of the messages might have had an encouraging effect on the participants, their engagement and willingness to contribute with their own opinions. We would argue, therefore, Antigone’s Diary provided experiential access to a theatrical event that carries theatre beyond the limits of the conventional co-presence that has dominated theatre and performance studies over the last two decades.

Artistic methods in citizen interaction

Antigone’s Diary was, as we mentioned at the beginning of this article, produced by RATS Theatre, a section of the Department of Computer and System Science at Stockholm University (DSV). Situated in the middle of a hub of hightechnology businesses on the one hand, and having Husby as the neighbouring community on the other hand, computer science moves constantly between technological advancements and social and political needs. Husby has been considered, not the least in the media’s coverage, as a ‘problematic’ suburb, neglecting the potential and activism of its multi-cultural inhabitants, which relates to the issue of civic participation and eGovernment. Indeed, the local population have displayed a degree of skepticism with regard to numerous kinds of reforms that have been initiated during recent years, not the least because these are considered to have been imposed on the citizens without a significant dialogue in advance, leading to an interesting function of Antigone’s Diary. The performance has been able to engage different groups of people and has, to a certain extent, changed the media image of Husby. Newspaper images of ethnic males presented as potentially dangerous ‘other’, have been replaced by attentive young women with headphones, listening to mobile theatre, making it highly relevant to consider whether such modalities can be used for citizen communication on a broader setting, involving people whose voices are not often heard to any significant extent from a societal perspective. This is particularly interesting since deliberative forms of democracy in which citizens participate more actively in the planning and decision- making procedures are generally considered utopian. The prevailing formal processes give disproportional power to people having the means, time and opportunity to participate in decision-making and negotiations.
The concerns involved here are many, but everything circulates around how to design public process models and how these can be incorporated in high complexity decision-making, encompassing different points-of-view, different perspectives, multiple objectives, and multiple stakeholders using different methods for appraisals. In the public decision implementation, such a decision framework should furthermore allow for different groups of citizens providing their assessments of planning options using methods designed for different points-of-view. Typically in planning decisions, this includes environmental impact assessment methods such as life-cycle assessments, return-on-investment calculations, equality and ethical assessments as well as political ideology alignment made by necessity by decision-makers. So the step from participating in a theatre play might seem to be large, but the largest problem with participatory decision-making is inevitable — public involvement.

How can Antigone’s Diary contribute to this intricate elicitation, modeling and development of e-democracy? First and foremost the performance shows how such interaction can be organized and also points out the conditions, under which the interaction can become successful. The creative process that has been invested in Antigone’s Diary became a crucial prerequisite for the interaction potential of the performance. The clear, intelligible plot enhanced the communication, while the perceived lack of comprehensibility of the problems at hand is something that forcefully prevents active participation in decision-making processes. City planning is a typical example: The ground plans and blueprints are difficult to understand for most people and the terminology used to explain such documents is of such a technical character that only experts tend to understand them. In this situation, a significant proportion of people who are concerned or likely to be affected by the proposed plans are largely excluded from the public discourse. Antigone’s Diary skillfully pointed out the importance of place, where city planning can serve as an obvious example. Often the plans are exhibited in the official locations that the authorities are based in instead of bringing the exhibition to the population likely to be affected by these changes. The accessibility in terms of the location that is part of the stakeholders’ own environment is as essential for city planning as it was for the drama of Antigone. Furthermore, guiding the participants to the exact locations which are the objects of the public discussions, creates not only a virtual engagement but becomes the playground for practical involvement. The movement through places, especially in collective groups, enhances the participatory potential. Participation becomes a kind of playful way of engaging with serious issues. In addition, the social media allow participants to instantly give expression to their perception.

Applied to the example of city planning the advantages are obvious: the authorities need to create materials that are comprehensible also for laymen, i.e. they have to be developed with the citizens who are affected by what is proposed. The forms of presentation need to be accessible in the places where they are to be
implemented. The interaction with the citizens has to take place while they are engaged in the questions at hand. The involvement has to be formatted so that the citizens feel that they are concerned. In the case of city planning, the experiences of Antigone’s Diary can almost be literally transformed into a model of public decision-making. Other public decision-making might require other elaborate analyses of the principles of public participatory processes.

This concerns the discursive and the public interaction layers which are dependent on the interest and willingness of various stakeholders to become involved. Antigone’s Diary illustrates a number of pertinent points about the issue of community involvement that have implications for the ways in which participation (on both a theoretical and practical level) can be considered by those working with these communities or supposedly representing their ‘interests’.

During the workshop we would like to discuss the following questions: How can we develop and document methods for enabling democratic dialogues at the level of the local community? How can we identify and document methods that can be used by the production team to design interactive performance aiming at triggering democratic dialogues?

References


Enabling new democratic processes in Schools
FlashPolls – student participation and contextual polling

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Abstract. This paper describes how the FlashPoll@Schools contextual polling tool could be used as an instance of furthering the democratic process in school, and in particular student participation and student democracy. Findings from two initial pilot tests of the FlashPoll@Schools tool in a school in the Stockholm area are used as backdrop for discussions on decision making, public participation and student democracy. The position paper open ups with a presentation for future work in the FlashPoll@Schools project in two intertwined veins; the development of the polling tool and pupil involvement in eDemocracy.

Keywords: Participatory decision making, Educational development, Polls, Democracy.

Introduction

In this paper will we describe an ongoing study aiming improving student’s democracy and participation in school development. The lack of preparing youths for an active participation in the life of society was already pointed out in the late 19th century by the Swedish author Ellen Key (Key, 1996) as a fundamental problem in the education system. Today the compulsory Swedish school is firmly
rooted in “democratic foundations” (Skolverket, 2011), equal to many other countries, however as noted by (Almgren, 2006; Aspan, 2005; Swahn, 2006) many elementary schools still has not been able to fully implement these recommendations for democratic working forms provided by the National Curriculum of the Compulsory School.

FlashPoll is a project funded by the EIT ICT Labs with the goal at identifying municipal areas of application for mobile citizen participation. The objective of the FlashPoll project is to develop a location-based and context-aware polling app that provides a direct communication channel between citizens and administrators in order to enable citizen participation in urban planning decisions. The FlashPoll application makes use of contextual information and spatial data in order to analyze and address certain target groups of citizens within municipal areas. Inviting citizens to give their opinions through their mobile devices offers a possibility for more contextualized polls. Since the tool is being developed for public clients, data protection and privacy rights are of great concern. The tool is currently tested in the cities of Berlin, Paris, Nantes and Stockholm. Here will we mainly focus on the FlashPoll@Schools case where the FlashPoll tool is currently deployed and used in a public elementary school, ABC School, in Stockholm. The FlashPoll@Schools case has during its first phase, produced a set of questions in collaboration with the teachers of ABC School in , Stockholm. Thereafter pupils and teachers have been introduced to the technology and questions of the FlashPoll app. Two pilot tests have been conducted, the first of which aimed at evaluating the technology and the questions, where different formulations and possible answers was tested. The second pilot test aimed at evaluating the technology in a larger group.

In the next section will we start with a brief view on decision-making and public participation to turn into the more specific issue of student democracy and the Swedish national curriculum take on “democratic foundations” in compulsory school. A short overview of the Flashpoll project will then precede a description of our ongoing work on deploying and testing FlashPoll@Schools in ABC School.

Decision making and public participation

Whilst there have been many decision analytical approaches proposed during the last two hundred years, these usually place far too many requirements on decision-makers for realistic and rational decision making. Similarly, they normally impose working processes that are not already parts of the regular processes used in organisations. Naturally, in public decision making, components
such as citizen involvement and transparency issues complicate the process further, e.g., (Hanson et al., 2012) discusses extensively.

As discussed in e.g., (Danielson et al., 2007a, 2009, 2010) we have been conducting projects regarding different facets of decision making with the goal to enhance the efficiency, transparency, and rationality involving utilization of new communication modalities. Here one example is how we in a FORMAS\(^1\) supported project designing and implementing public participatory decision making, in using multi-criteria, multi-user settings in two municipalities in the greater Stockholm area. In these we try, through various participation channels, to investigate the issues of citizen communication, elicitation, and involvement, while as far as possible attempting a rational and systematic treatment of the information delivered. Thus, in short the idea is trying to enhance the efficiency and transparency as well as rationality, while developing methods for realistic decision making in public settings. This is done in the context of a process model for public decision making, which is inclusive to many stakeholders and decision-makers.

An important aspect of this undertaking is to analyze the complex issues of how governance arrangements and formal planning processes as such can be structured to effectively accommodate inputs from various citizens in a decision framework, including usable and transparent decision methods equipped for handling a multitude of citizens and multiple decision-makers. This aspect of the research agenda focuses more extensively on means and tools for how citizen content may be analyzed, distributed, and utilized by decision making authorities in public decision making and planning. The general need to facilitate the expression of views, concerns, and opinions of the public are crucial not only to support decision-makers but to actually take part in the decision-making process.

**Democratic Participation**

For a process such as the above to be considered as reasonably democratic, it must at least be sensitive to the interests of various citizens, and consequently (i) allow for modeling of outcomes based on the different preferences, as well as (ii) facilitate a negotiation process where different views can be interactively adjusted when considering calculated outcomes, and (iii) provide a reasonable basis for broad participation.

A full design process in a public decision process implementation must acknowledge various views of citizens; at the same time, available facts must be used to increase citizens’ insights of the outcomes by applying different preferences and multiple perspectives. Furthermore, it must also include models for how enriched content may be incorporated in real-life decision making and planning. This calls for a common model encompassing different points-of-view,

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\(^1\) The Swedish Research Council for Environment, Agricultural Sciences, and Spatial Planning
different perspectives, multiple objectives, and multiple stakeholders using different methods for appraisals. Thus, a minimum requirement for a participatory approach to make sense is that the resulting process is transparent, encouraging participation, for example by adequate feedback mechanisms, and enabling a rational treatment of the information delivered, preferably through a multitude of participation channels.

**Children as participants**

The above arguments on the challenges for participation is given further complexity when the public is not of legal age, as with children.² Being underage is not just considered of less legal right, as in legislation. Children are also often conceptualized as human becoming’s, rather than human beings (cf. Prout, 2005), as not yet full members of the society. Hence, minors are in a subordinated position that in many respects can be paralleled with how i.e. women, or people of specific ethnicity, or people with disabilities, are treated. Aiming at including children in a democratic process thus need to take into consideration the generational ordering (Alanen, 1992), making age a complex issue intertwined of (but not limited to) biological age, cultural age and theoretical age. All of these approaching “the child” in different ways, but all positioning the child as a becoming and not a full being. The democratic participation of children are therefore often limited to tokenism, using more or less random utterances from children as cute illustrations of the other.

In this project we aim at not only come closer to the voice of the young citizens by using polling tools that they are familiar with, but also to include them in the actual process of both developing the FlashPoll tool and in the research process. The minors that we will work with are pupils at the above mentioned compulsory school in the larger Stockholm area.

**Student democracy and the national curriculum**

The compulsory Swedish school is firmly rooted in “democratic foundations” (Skolverket, 2011) as is the first statement in the National Curriculum as its “Fundamental values and tasks of the school” are presented.

*It is not in itself sufficient that teaching only imparts knowledge about fundamental democratic values. Democratic working forms should also be applied in practice and prepare pupils for active participation in the life of society.*

*(Skolverket, 2011, p10)*

Even if this can be discussed in relation to the compulsory school being an exercise of authority as every child are obliged to be part of the compulsory

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² Children are those that are under the age of 18 years old, according to the UN Convention on the Rights of the Child
school, the school is at the same time based on that “democratic foundation”. It is then left to each teacher, and each headmaster, to turn those phrases into work of practice. The democratic participation of pupils in the school is in consequence defined by others than themselves, making the compulsory school a fascinating object of study. Moreover, the student democracy is a complex, and in many respect tricky, thing it need to be understood as something profoundly deeper than participation of the pupil in the teacher-caretaker meetings or the colour of furniture in the common room. According to the National Curriculum of the Compulsory School in Sweden (Skolverket, 2011) in the section “Overall goals and guidelines” it is stated that:

The democratic principles of being able to influence, take responsibility and be involved should cover all pupils. Pupils should be given influence over their education. They should be continuously encouraged to take an active part in the work of further developing the education and kept informed of issues that concern them. The information and the means by which pupils exercise influence should be related to their age and maturity. Pupils should always have the opportunity of taking the initiative on issues that should be treated within the framework of their influence over their education. (p.17)

The compulsory school thus becomes an interesting arena of democratic participation, as all teachers, headmasters, etc., need to take into consideration the informed views of the pupils. This complexity of this undertaking can be seen as student democracy tend to be experienced as (and positioned as) influence rather than real power (Aspan, 2005); most often teacher driven rather than student driven (Swahn, 2006); and that student democracy is greatly difficult as the students do not get the appropriate knowledge on what democracy is, how it is practiced, etc. (Almgren, 2006). The issue of student participation, and student democracy, has a long tradition within the field of philosophy of education. Already late 19th century the Swedish author Ellen Key argued for increased participation of the pupils in the school, as a way of making the school relevant for them (Key, 1900/1996). Many of her thoughts are shared by John Dewey (1897/2011), Janusz Korczak (1929/2011) as well Paulo Freire (1970) and Peter McLaren (2007), all advocates for the need of listening to and taking serious the perspective of the pupil/the child, and giving this pupil full respect as a competent subject and citizen.

**A municipal FlashPoll tool**

FlashPoll is a project runned by EIT ICT Labs with the goal at identifying municipal areas of application for mobile citizen participation. Thus the purpose of FlashPoll is – for one – to explore mobile online solutions for political decision
making in urban development and – for another – to provide options for participation for groups with higher or lower affinity to new media. The FlashPoll application makes use of contextual information and spatial data in order to analyze and address specific target groups of citizens within defined urban areas. Inviting citizens to give their opinions through their mobile devices offers a possibility for more contextualized polls and provides instantaneous sets of public opinion on current political and societal topics. Hence the tool aims to overcome four shortcomings common to online-polls:

- the manipulation of results by mass-voting by including a user-ID per mobile device which allows single voting only;
- the lack of a direct link between decision-maker (poll-initiator), respondent and the subject of the questions by using the spatial context as entry point;
- a too time consuming structure by using an App with limited space and characters,
- the lack of feedback for the participants of a poll by providing the actual poll-result directly after submission of the answers.

A quite common situation in administering municipalities is the need to take decisions of various scopes and with differing consequences for different administrative levels and target groups. Though participation has become a regular element in administrative decision processes, we have learned in recent years that early communication is not always enough to guarantee a successful and satisfying result. It also needs a continuous and transparent dialogue and feedback. To this end, a mobile application for flash-polling can facilitate municipal decision making processes by means of a feedback function.
FlashPoll@Schools

FlashPoll@Schools is carried in collaboration with the “I Use IT” project. “I Use IT” is a research collaboration between Stockholm University (SU), Royal Institute of Technology (KTH) and ABC School in aiming at developing new tools and methods based on mobile technology for longitudinally following students, teachers and parents and their experiences of the school, schoolwork, homework, and their experiences of involvement and participation. “I Use IT” is supported by the city of Stockholm.

Approach

Senior researchers with different backgrounds from cognitive psychology, linguistics to pedagogy created the initial set of questions. The questions in the initial set were based on Lgr11 (the National Curriculum for the Compulsory School). These questions went through 3 iterations before they were used.

i. Two researchers completed the first iteration in order to standardize the questions into a uniform and easy to understand format.

ii. The second iteration was carried out at the school in collaboration with teachers from the school in order to phrase the questions to more directly target the student population of the school. Ambiguities and to difficult questions were changed into a format that would fit the student population.

iii. A third iteration was carried out in order to further ensure a uniform and easy to understand format of the questions. Some of the issues raised during the second iteration were addressed, often dealing with key concepts used in the school environment and how suitable these concepts would be for the high-level goals of the study.

The questions had two foci: Involvement and participation on the one hand and technology on the other. The questions were designed by researchers at KTH/SU in collaboration with a teacher group at ABC School. The issues were divided into four different groups: (1) Experiences of motivation and engagement in schoolwork and homework; (2) Experiences of being able to influence the schoolwork and homework; (3) experiences regarding support and scaffolding in
schoolwork and homework, and; (4) Experiences of succeeding/failing to reach learning/teaching goals.

The technical aspects covered in the questions referred to the technical environment, such as iPads and mobile phones. Since ABC School has distributed iPads to all its students, the questions about how they use this technology for both school and leisure are of importance.

Following the design of polls, the FlashPoll tool has so far been tested two times in two pilots. First, in a small-scale test carried out in one class of 19 students, aged 14 in where the students took the poll three times (49 polls in total). A second pilot-test was carried out in order to make sure the technology would work even with a larger number of students, ie. here 111 Students replies and 25 Teachers (952 polls in total).

1st pilot
One class of 19 students aged 14 took the poll three times during one week in November 2013. The FlashPoll app was introduced in class before the first poll by the project team. Each student has an iPad for school work, which they used to login to the poll and to answer ten questions. The questions were on how they used technology and on student participation. In the first poll the questions focused on technology and the second and third poll were focused on student participation. The questions were longer and more complex in the second poll compared to the third poll. At the end of each poll the students were presented with a thank you message. Eight students were interviewed in pairs at the end of the first pilot test. The student pairs were selected by their teachers.

During the interviews students found it easy to use the FlashPoll app and to answer the questions. One student had problems logging in, possibly due to ill formed error messages in the prototype implementation. But overall, the web app worked well.

The interviewed students found that answering ten questions each time was the right amount or possibly too few questions. They found that the questions could have been more varied and that it was not clear how exactly the questions varied from the second to the third poll. When asked, the interviewed students said that they had no problems understanding even the longer and more complex questions. What the students found difficult was how to answer questions referring to the school tasks they did previous the same day as they had many subjects and related activities. They also found it difficult to answer questions about the current activity, as the current activity was to take the poll rather than a school task. To overcome these difficulties the poll questions could refer explicitly to the current school subject or task by name, however this would make the poll more difficult to set up.

The students wanted to expand the scope of the poll to include questions about their spare time. The students did not have opinions about what to present at the
end of the poll, but they were positive to display the overall result for each question as a percentage number. The students expressed that no matter what kind of feedback given at the end of each poll, the feedback should always be anonymous or abstracted away from individual respondents.

2nd pilot

During the last week of the autumn semester, a three days test, including all students and teachers at the school, was carried out. The reason behind this was to test the technology further and make sure that the FlashPoll tool would run smoothly with numerous simultaneous users. The group decided to ask questions related to the Christmas leave and attitudes towards going back to school in January. The questions primarily aimed at also introducing the tool before further tests in 2014. The second pilot test was announced to teachers at a school employee meeting and on the school’s website and was answered by 21 teachers and 89 students in total, also raising some issues with the FlashPoll app, which needs to be addressed before the full-scale study in January.

First it should be noted that one main objective with the 2nd pilot was to test how the technology behind FlashPoll scales and work even with a larger number of students. Hence these results need to be followed up with more polls to be verified. Anyhow the analysis of the data from the 2nd pilot provides us with some interesting preliminary findings. To start with we can note an interesting difference in response rate between genders, see figure 2, i.e. girls (59.6%) and boys (37.4%).

Figure 2: Gender distribution 2nd pilot
Figure 3: Replies rates on Q4 and Q5

Figure 4: Correlation between Q3 vs Q4 and Q4 vs Q5
(Q3: It will be fun to come back to school in January)

We can also see, figure 3, some natural connection in the data, for eg the reply rate on question 4 (I think that the school has been fun this semester) and 5 (I'm happy with how I coped with school this semester). Digging further into the data we also find some other interesting correlation, like shown in figure 4 (p-value: 0.0001496 and p-value: 0.000634), and without going into the too specific details it seems that we can conclude that (1) The happier last semester was, the more willing to go back to school in January and (2) How to cope with school affects the feeling at school. These findings are indeed not that surprising but anyhow the main take-away lesson here are that we can see indications that the Flashpoll tool works in this setting and the data could provide new insights in how the students (and teachers) think about their situation.
Early conclusions and future work

The work so far has been focusing on the implementation of the FlashPoll@Schools tool in the school we are working together with. By inviting the school to participate in already the early stages of the development of the FlashPoll tool, the teachers, pupils as well as the school management has been introduced to the tool and its underlying methodology – contextual polling, aiming at support for local but grounded decisions. We can conclude that both the Flashpoll tool works and has been appropriated by the school. This has opened up for new ways of approaching the complex issue of pupil participation and student democracy. Inspired by this we are now turning our attention to the perspective of how to get a deeper understanding of the perspective of the pupils in relation to eDemocracy. Primarily this is about their understanding of, as well as the conditions for furthering their understanding of, eDemocracy. But also how digital media in general, and the FlashPoll@Schools technology in special, can be used in this vein. Our ambition is to facilitate workshops with pupils (i.e. grade 7 or 8), on a theme with relevance for the overall ambitions of the FlashPoll@Schools project: Increased involvement in, and support for, participation as well as local decision making as supported by tools such as the FlashPoll@Schools. At the same time, the theme has to be firmly anchored among the teachers and of relevance for the more general school work.

References


Supporting Election Work: Infrastructures for Knowledge Sharing

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Abstract. Our research project has investigated through qualitative studies the collaborative work practices involved in organizing elections in a Danish municipality. One of our findings is that the organization of elections is a knowledge-intensive practice relying significantly on the work of non-experts. In this position paper, we highlight the potential role of information infrastructures to support knowledge sharing.

Background

In the last decade, many countries have shown a growing interest in digitalizing elections, particularly through the use of e-voting technologies. In this context, the DemTech research project (www.demtech.dk) has been established in order to test whether it is possible to digitalize the electoral process while balancing the trust of the people on the trustworthiness of the deployed technology. In Denmark, the discussion about implementing e-voting technologies has been put aside, at least for the time being. The law for permitting experimentations with e-voting technologies has been turned down by the Danish parliament. Consequently, our research focus has shifted from how to design trustworthy e-voting machines to which parts of the electoral apparatus would benefit from some sort of digitalization. After all, elections are composed of, not only election day—where the voter cast their ballot—but also a long and complicated chain of procedures and processes (e.g., ordering election material, organizing advance voting, training employees, setting up polling stations, etc.). Some of these processes are already supported by different technologies (e.g. generating the voters register),
while others are far from being digitalized. One of the areas where technology can potentially support the process of organizing election is in developing and maintaining infrastructures for knowledge sharing.

**Current Work**

The focus of our work has not been so much on civic engagement per-se, as we are investigating the collaborative practices involved in the organization of elections, performed predominantly by municipal workers, but also by civil volunteers and representatives from political parties. Thus, our interest lies in cooperative technologies supporting election work. Specifically, we have identified that one of the major challenges in organizing elections is the maintenance of electoral capability and expertise between each election, which are characteristically disruptive and transient events. Because of the time lapse between two elections (e.g., two-four years), many of the municipal workers responsible for organizing elections feel that they have to start all over again: gather the right experts who participated in previous elections, collect their knowledge, assemble it in folders and spread it to the different teams, etc.

To ease the transition between elections and facilitate the sharing of knowledge and expertise, we provide reflections about enhancing the current information infrastructure of Copenhagen Municipality to support election work. We see infrastructures as shared resources; they are open and heterogeneous, and they contain different components that are integrated through standardized interfaces (Star and Ruhleder 1994; Monteiro et al. 2013). A repository which will enable storing and organizing different kinds of information and artifacts (guidelines, laws, manuals, videos, etc.) could be one component of such an infrastructure. We argue that a CSCW informed modification of the current assemblage of heterogeneous information artifacts and work practices could be fruitful for developing, maintaining, and sharing electoral knowledge across the various actors involved in organizing the different elections. We draw upon an ongoing ethnographic investigation we conducted at Copenhagen Municipality which is now in the process of designing an intranet solution, moving away from a centralized approach where knowledge is located only in the hands of a few municipal workers to a distributed approach to knowledge where knowledge is delegated across the vast amount of people that participate in organizing elections.

**Relations with CSCW**

Election work is a new and fertile empirical domain within the field of CSCW. However, the topic of knowledge sharing (Pipek et al. 2011; Ackerman et al. 2013) has been a key in this community. Most studies on knowledge sharing within CSCW tend to focus on routine work and the practice of experts, for example, health care workers, aircraft repair work (Spence and Reddy 2011; Pipek et al. 2011; Ackerman et al. 2013), software knowledge work, IBM,
consultancy work (Orlikowski 2002), etc. What is interesting in our case, is that although organizing elections can be characterized as a knowledge-intensive practice, it most often depends on the work of neophytes, and a few experts whose expertise has eroded over time. Thus, our interest lies in how the distributed nature of knowledge matters for collaboration in election work spanning not only organizational and cultural boundaries, but also, different actors, geographical boundaries, etc. Another problematic related to the transient nature of elections is that election work cannot be routinized (that is, become routine work) in the traditional sense since a long period can pass between each election, making it difficult, if not impossible, for election workers to remember what they did last time.

Therefore, Copenhagen municipality’s initiative for building an infrastructure for knowledge sharing is indeed a promising one. A solid infrastructure brings about some new possibilities, for e.g., with its incorporation of different formats (e.g., pictures and videos) something, which was not possible with the paper-based infrastructure and can facilitate learning. Furthermore, a digital repository can also allow easier maintenance and reuse of information, something which is crucial for elections. However, it can also raise various questions about informal knowledge, improvisation, and other crucial skills that are used when organizing elections. In this workshop, we wish to discuss further the development of information infrastructures dedicated to knowledge sharing in the context of election work.

References


Mobile Participation in Urban Development

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Abstract. With an urban planning and participation research perspective, my contribution offers reflections on a specific case of mobile polling apps in urban development. After introducing considerations on the characteristics of mobile apps for participation in contrast to face-to-face and E-Participation, I present intermediary results from an ongoing R & D project and finish with thoughts on the future of E-participation and E-Democracy. Is participation enough, why and when would cooperative approaches be more suitable and what are it's implications for the relationship between politics, administrators and civil society?

Mobile Apps in Urban Development

Participatory decision making is a fundamental activity to the success of many organizations — whether it be profit, non profit or state institutions. While this is being recognized slowly in national, regional and city governments, citizens as well as administrators demand both improved decision quality and transparency of political decisions. Established methods of representative democracy are being criticized for their lack of effectiveness, disenchantment with politics is on the rise while voter participation in local and regional elections is lowering. At the same
time politics on the local and regional level increasingly include citizens and NGO in political decision making processes. New ways and methods have to – and already are – being explored and tested while a shared culture of participation still has to be established.

While face-to-face participation has become something like a standard in Western/ Northern urban development since the 1990s, E-participation was only introduced during that time. In consequence, the number of E-participation implementation cases is still quite small. And maybe not surprisingly, professional conceptions of E-Participation are closely related to face-to-face experiences\(^1\). Accordingly, criteria for describing or analyzing E-participation rely heavily on the practical experiences with and theoretic reflections on face-to-face participation. But despite the initial hopes connected to participation via internet, the variety of forms and methods of E-Participation today is more limited than of face-to-face participation: most approaches to E-Participation are a combination of posts, comments and discussions, and informal voting/ rating as e.g. in many online citizen budgets, and municipal online dialogues. After some 15 years of E-Participation experiences, innovative technical developments and patterns of communication and interaction in social networks may give new impulses to the idea of participation and cooperation in urban development. The specific characteristics and structures of mobile apps – which sometimes are in contrast to either face-to-face or e-participation – ask for taking a closer look at capacities and limits of using mobile apps in and for urban development. While best practices and handbooks for face-to-face participation emphasize the need for context-related, sensitive approaches (Schröder 2013), apps are a tool for fast and short communication (cp. Evans-Cowley 2011), that do challenge existing conceptions of democracy and (E-)Participation. Two central questions in this context are 1) how and 2) in which role(s) different actors and stakeholders can become part of democratic decision making processes via mobile apps. While “most of the apps out there simply allow information sharing” (ibid.) on various topics, administrators and experts are looking for ways to interact more with civil societies and stakeholders, and vice versa (Conroy and Evans-Cowley 2006). In consequence, we now do find apps that allow for more social interaction and sometimes education (ibid; Zeile et al. 2012), such as the quite popular apps

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\(^1\) E-Participation or e-democracy is defined in the following as “the use of ICT to support … democratic decision-making processes” (Macintosh 2004). Narrowing this definition further down, one could add that e-participation refers to the goal-oriented interaction of civil society & administrators/ politicians via Internet, mobile devices such as Smartphone, Tablet, via different software and app.
that allow users to instantly interact with local administrations and services. At the same time, general polling and voting apps exist for almost anything, except in the field of urban development (Bohoj et al. 2011).

Overall objectives for using mobile apps in urban development are to facilitate interaction and support between groups and individuals (e.g. Knudsen et al. 2011), to better connect administrators, experts and public. A second, main objective is to provide better quantitative and qualitative data on individual lifestyles and choices. But due to space restriction, this context is not being looked at in this text. The hoped for consequences are increased productivity and responsiveness (Zeile et al. 2012), as well as (better) relations with civil society (Evans-Cowley 2011). Some future challenges for apps in urban development are consequently

- the integration of open data initiatives (Evans-Cowley 2011)
- the collection and integration of (geo-tagged) public data and place-based knowledge (crowdsourcing, participatory sensing, emotional mapping, cp. Estrin, 2010; Lane et al., 2010),

The FlashPoll mobile app

A quite common situation in administrating municipalities is the need to take decisions of various scopes and with differing consequences for different administrative levels and target groups. Though participation has become a regular element in administrative decision processes, we have learned in recent years that early communication is not always enough to guarantee a successful and satisfying result. It also needs a continuous and transparent dialogue and feedback. To this end, a mobile application could facilitate municipal decision making processes by means of a feedback function. But the question is, whether apps (remember: they're short, fast tools) allow for proper deliberation with sufficient information, rational enough communication and informed decisions.

FlashPoll (flashpoll.eu) is a mobile app aiming at a qualitative better integration of civil society in municipal decision-making processes through location based, instantaneous polling and opinion-giving. In addition, it will also allow for multiple poll initiators. If achieving this, the app would go beyond a traditional participatory approach to urban development (top-down) and generate multiple
ways of communication between individuals. On the one hand, shortcomings of face-to-face participation, such as limits to processing the input, opinionated stakeholders and process facilitators, (high expenses) and personnel required, intimidating socio-cultural or administrative structures could be counteracted by providing a neutral platform for opinions and dialogue. In addition, Flash Poll could facilitate participation because of its speed, reaching range, time-place asynchrony, anonymity, interactivity, and its ability to carry different forms of mediated content (e.g. sound, pictures). On the other hand, speed and limited text sizes may also cause problems: The need for text reduction on a smartphone screen affects the information given, questions asked as well as responses given. At this stage, it is not clear, whether advantages or disadvantages will be more prominent, but it is most certainly an opportunity to reflect carefully on what kind and what amount of information, communication and interaction is needed in the context of urban planning and decision-making.

Consequences for using Apps as mobile method for participation in urban development

Use Case

Figure 1: General use case for the FlashPoll app

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2 There are three principles of using the app: 1) non-georeferenced surveys and sampling, 2) with support of the geo-localisation, space-related opinions and polls can be fed in and 3) the integration of contextual information and spatial data in order to address specific target groups within defined urban areas.
The research team started testing FlashPoll in public in mid 2013 at different events in Germany, France and Sweden. As part of the University Network event "Long Night of the Sciences", the FlashPoll app was presented to and tested by the public for the first time. After downloading the app via Google Play, users could take part in five different instantaneous polls during the evening. Results were visible via the app immediately after polling. In order to ensure a larger number of testers, additional devices were provided as we wanted to do a technical test and participation research at the same time. Although the response rate was quite small (30 app downloads and 215 answered polls) and decreasing over time, there was a broad positive feedback on the FlashPoll concept and testers expressed interest in a future use of the tool.

From the participation research perspective however, and due to the relatively small number of testers and their unrepresentative selection, results of the poll questions can only indicate tendencies of the visitor’s opinion. Without the possibility for open text answers (only single and multiple choice answers possible), it was only possible to receive non-captured views, no comments, and no suggestions. The prevailing requirements of a Android operating system version 4.0 or higher and access to a google mail account were problematic as they made comparatively many people shy away from downloading the app.

In succeeding steps, the FlashPoll initiator web platform was designed and tested, then a skip-the-question button, the geolocalisation, the visibility of real-time results, varying lengths of information texts, varying numbers, length and complexity of questions and answers and the layout of the user interface. This evolving structures were mainly a result of the team's discussion process. In many cases, we discussed specific features in theory before implementing them. This procedure didn't correlate either to the management of app development nor participation practice but provided useful, though sometimes work-intensive, insights for both engineers and social scientists.

In interviews and focus groups, it became clear that a fast polling tool - that can be used on the spot without spending much time – is being asked for by both administrators and stakeholders. In consequence, descriptions of polls should be as compact but clear as possible, questions and answers provided rather detailed and clear (more than single words). There were also hints that a poll should not be too short in order raise motivation (approx. 10 questions) and should provide different ways of opinion giving (i.e. not only single and multiple choice questions, but also – where suited – scales and open text). Our privacy concerns

3 The polls consisted of 2-5 questions each and were launched through the app as the event progressed with the first poll starting at 4pm and the last one at 11pm.
were confirmed as testers appreciated that all feedback and polling results should always be anonymous or abstracted away from individual respondents. 
Reaching a large variety of people resp. population groups is heavily dependent on the access to recent smartphone or tablet models. Statistics suggest a quick growth rate for smartphones as well as growing familiarity with the use of mobile devices in all age groups which may lead to the assumption that the introduction of mobile participation to large percentages of populations will be less complicated than the introduction of online participation: While younger people are said to be more affine towards new media, our (limited) test results do not support this: People that participated in testing the FlashPoll app were mostly middle-aged, politically interested and already actively participating in society. This goes along with findings from face-to-face participation, but also with the general population structure of the visitors of the event.

**Conclusion**

Although it is impossible to generalize our findings, reaching potential users is still one of our major concerns in the test stages: While we tried to limit the personal information needed in order to protect user's privacy (and not to do what is technically possible), we are left with very little knowledge on social characteristics of the participants. Assumptions that e-participation may allow for more and different participants, for more contributions are not easy to verify as all participation relies heavily on individual access to information about such a process. While it is often assumed that E-Participation allows for reaching larger numbers of people than many face-to-face participation processes. But it is just as time-consuming and delicate to deal with. And, surprisingly, statistical data of E-participation and mobile participation is almost not available (Schröder 2013). While the literature suggests that “there is a chasm between those who have computers, computer skills, and Internet access and those who do not” (Brabham 2009: 242), there is not enough data available yet to see whether this also applies to smartphone use and users. 
As communication and interaction in E-Participation processes definitely ask for specific technical and social skills, E-participation is being considered a bigger challenge for members of local governments than for members of civil society. But with a new generation of administrators (those who learned about participation in schools and universities and those who grew into using computers and mobile phones) feedback and interaction are somehow a normality. Thinking further, one could ask what consequences this has for the use of ICT in local decision-making processes and what the relations of social and technical aspects of ICT and democracy are. The exclusive relocation of public discourses that deal with real spaces and real people into the internet realm may not be a vision to long
for. But in a more concrete step, it should be asked whether all E-participation is suitable for all levels: E-Participation processes are not as small-scale (yet) as many offline processes, mobile apps are mostly designed to offer non-location specific information.

What consequences does the (exclusive) use of mobile apps in local decision-making processes have? The exclusive relocation of public discourses that deal with real spaces and real people into the internet resp. mobile realm may not be too much a vision to long for. In practice today, we often find a complementary mix of offline, online, and mobile solutions (mash ups), even more so the smaller the scale to deal with gets (e.g. streets, small parks of only local significance, neighbourhoods). And finally, we have to deal with the fact that, due to (limits of) technical development, all E-Participation is informal as there haven’t been invented any mechanisms yet to introduce formal voting that would make decisions by administrators or politicians redundant.

References


Overcoming Residents Opportunity Apathy in Danish Social Housing Democracy

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Abstract. In this paper, I discuss how various technologies can support democratic collaboration in the social housing sector in Denmark, and help overcome opportunity apathy. I exemplify the discussion with an ongoing process of strategy development, in a Danish housing organization.

Introduction

In Denmark, social housing is organized around a democratic structure giving residents in the housing departments control over their budget etc. This democratic structure constitutes a possibility for saying no, and to modify administrative actions, but it also constitutes an opportunity space for inventing new common goods and dreams. This opportunity space, however, is very often not utilized by residents. It is common knowledge within the social housing democracy that residents turn up at the annual residents meetings if the rent is about to be increased or if a renewal project is being planned, whereas they tend to stay at home in most other cases. This is expectable and in line with thoughts by Dewey (“the public and its problems”), who indicates that engagement of the public is always rooted in issues. In this paper, I discuss this tension between opportunity apathy and issue based engagement as related to structural conditions.
in and around the social housing democracy. In particular I look into the how the logic of meetings tends to bind any debate to predefined proposals or themes that can be put to vote, and I look into how collaborative technologies may be utilized to open spaces for open, creative collaboration to evolve new possibilities for life in the housing department.

**Housing democracy**

The social housing sector in Denmark is built on the principle of local democracy and decision-making. The basic unit is the housing department, which can comprise from a couple to close to two thousand apartments, most often in co-located buildings of same type. Housing departments are joined in housing organizations, which are independent and self-governing. New departments are established by the housing organization through a system of municipal support, urban planning, national support, etc. Housing departments remain owned by the organization, but decisions about budget, renewal, and local rules are made by the residents in the department at the annual residents meeting. A local board, elected by the residents meeting, oversees the implementation of decisions taken by the residents meeting, local representatives for the general assembly of the organization are also elected. The housing organization employs administrative and technical staff to operate the units. Administrative staff supports residents’ democracy and help ensure sanity and legality.

**Opportunity apathy**

It is a challenge for the social housing democracy that a majority of residents, despite legal possibilities, do not participate. Some residents do not know the possibilities, some don’t think they are welcome or that they will be able to have a say if they participate. Some have experienced that the annual residents meeting is run by a clique of very experienced “residents democrats”, and others just don’t feel they can spend the necessary time. Accounts on this situation can be found in (Lund-Andersen, 2003, Jensen et al. 1999). Jensen et al. (1999, p51) reports that 40 percent of the respondents did not like to speak at big meetings, and that 41 percent almost never would speak at the annual residents meeting. These numbers show that the annual residents meeting is not the ideal format for all residents. The opportunity apathy can to some extend be attributed to the typical form of meetings in housing democracy; the tyranny of the vote theme focused meetings. The process leading to a proposal at an annual residents meeting is often closed, involving only staff and the local board up to the point of taking a formal
decision. Many residents have ideas and opinions, but these are most often not included in forming a proposal. Collaborative creativity in defining the future for a housing department is rare. Most debate is undertaken at formalized meeting where focus is on avoiding specific decisions or having other specific decisions approved. Ultimately, decisions are taken through voting for or against a proposal, and thereby any contribution that cannot be put to a vote is regarded irrelevant. In other words, the proposal centered meeting logic seems to be a problem. There is a need for new fora where discussions can be made freely without the pressure of formal decisions, thereby avoiding exaggerated focus on conflicts and creative collaboration becomes possible. While it seems trivially true that the format of typical meetings is a hindrance for active involvement, it seems clear also that it is not enough merely to reduce these structures of exclusion. It seems to be a general problem that most people are much more likely to activate themselves in relation to threats, issues and problems, and less likely to engage in filling out opportunity spaces. This is not only experienced in the social housing democracy, but also in general public planning as when the city of Aarhus called all citizens to contribute ideas for the detailed spending of a large part of its budget in a new library project on the harbor front. Virtually no one turned up to the meeting to pose interesting ideas. No one came to secure space and resources for their hobbies, etc. I will call this lack of drive to fill out and utilize common resources and opportunities opportunity apathy.

Examples of opportunity realization

The opposite of opportunity apathy could be called opportunity realization. In social housing departments one area where residents have engaged in opportunity realization is the creation of playgrounds. In Department 1, a department of a social housing organization in Aarhus, a group of young families thought that their children would benefit from the establishment of a playground. Some years earlier it had been decided to cancel the existing playground and have grass instead, both because it was expensive to renovate and also because the local board thought that there would be no children in the department. The group of young families started to make plans for a new playground and then they approached the local board. The local board rejected the plan, but was later replaced at the annual residents meeting. Later, approximately the same group of younger residents organized joint dinners for all who wanted to participate. Again with some skepticism from oldtimers, who believed that this way of using the department meeting rooms was too anarchist.
An example of a more organized effort to enable opportunity realization and broader engagement has been the initiation of regular sub-department meetings for one stairway or for one house (of several stairways). At these meetings no formal decisions can be taken because the meeting have no formal status. Therefore, it is legal to ask questions and to air new ideas regardless of realism, downsides, etc.

**IT based support for collaborative opportunity realization**

Below I point to examples of how IT is being used, or has been experimented with in engaging residents in the democratic life of a housing department.

**Experiences with using Facebook**

Many social housing departments have experimented with utilizing Facebook as a channel for informal debate and interaction among residents. The obvious advantage in this context is that Facebook is not suited for making formally legitimate decisions. Thereby, it is ensured that only free debate can take place, no one are held responsible for the implementation of their ideas, because decisions are made elsewhere. The general experience is, however, that the debate there most often is reactive towards threats and not seeking to explore possibilities. Thus, the lack of responsibility more often leads to irresponsible quarreling than to free development of ideas. While Facebook seems to provide a way to attract people, it does not break the opportunity apathy. In short, platforms like Facebook, as well as more dedicated debate platforms seem to lack direct support for open, creative, collaborative opportunity realization.

**Beboermødeportalen – breaking the meeting logic, keeping the meeting**

Heath (2010) developed a prototype, Beboermødeportalen, based on the idea that democratic life in a social housing department evolves in a one-year cycle with the annual residents meeting as the point of reference. Decisions are taken at the meeting, but the local board prepares the meetings and undertakes the implementation of decisions made. Heath’ prototype aimed to make transparent the work done by the local board before and after the annual meeting, and to open a space for broad democratic debate. The prototype gave an opportunity to participate asynchronously when it was convenient for the individual resident, eliminating the feeling of not having time to attend the meeting and giving
residents a chance to learn if and how participating in the meeting could be relevant. This also provided an opportunity to participate for people who are not confident with talking at meeting. Maybe most prominently, the portal provided an opportunity for all residents to follow the work done by the local board, possibly reducing the inbreed character resident democracy some times has.

By introducing the possibilities for asynchronous debate, and broader involvement of residents in the preparation of the annual meeting, the logic of the meeting is being broken up.

**Beboermening – breaking the space**

Kjeldsen (2014), in his thesis, explored ideas developed by Korn (2013), and colleagues, of localizing debate about planning issues by utilizing QR codes on situated issues posters. For instance, Kjeldsen’s system was used for posting a poster in the cycle parking basement raising the question of good conduct and usage of space in the bicycle area. The idea was to enable the residents to engage with issues and opportunities when they are in the relevant location carrying out relevant activities, thereby, tying democratic debate closer to actual life in the department.

A hypothetical, but realistic, example could be from Department 18 where the shared laundry facilities for 48 apartments include an ironer. The ironer is a relatively expensive piece of equipment to replace and while it seems like something that traditionally has been important, it is also evident that less people today iron their linen. Debate about the replacement of the ironer at the annual residents meeting tends to get heated and be more about the universal rights of having access to an ironer rather than about how the existing one is actually used and which alternatives there could be. A debate localized in the laundry, near the ironer, would help people remember and formulate aspects of their own use. E.g. “I am using the Ironer today because it is here and that it is much easier to iron my big table cloth, that I am only using for Christmas with the ironer that it would be to use an iron. I think, though, that it would be more important to have better ventilation of the drying room than to use resources for the ironer”. Another example could be “I am ironing my bed linen today. I am always doing that because it maintains cleanliness for a longer time. If the ironer broke down and wasn’t replaced I would probably have to get a small ironer for myself, but that would be expensive and take space in my apartment”. Based on such comments it could become clear that it would make more sense to get a smaller ironer and place that in a locked room where people who have a need and know how to operate a non-industrial ironer without breaking it could get a key. And then the rest of the money could be used for improved ventilation of the drying room.

However, the prototypes presented by Korn (2013) and Kjeldsen (2014) did not provide structural support for idea development. A platform, that in a more
structured way incorporates elements from e.g. future workshops, could be useful. To do so the difference between localized and non-localized should be further explored.

The case of the future housing quality in BK

BK is a Social Housing organization with more than 5000 apartments in a large town in Denmark. BK is currently in the process of ensuring the future quality of its housing departments. The challenge is to meet future requirements for energy consumption, housing comfort, facilities as well as the general age of buildings, and find ways to ensure the needed economic funds in the departments. This is a process that, in the Danish housing democracy, is conducted in cooperation with residents, organization’s administration, municipality etc. BK wants to ensure that residents take a leading role in developing visions for the future life in the departments.

The process followed in BK is somewhat traditional. The central board of the organization has developed a strategy in collaboration with the administrative staff. This strategy has been discussed with the general assembly and finally approved as a working principle. Then the situation, including the need for extra funds in the future budgets, has been laid out for each department. Now each local board is responsible for formulating the local strategy for quality of future housing, and to ensure the needed anchoring among the residents of the department. The central board wishes that all residents get to influence the process. It is evident, however, that just understanding the concepts of the strategic plan is a challenge for the local boards. Therefore, the involvement of all residents in a creative co-creative process seems to them like a lot to undertake. Therefore, involvement is in danger of degenerating into a process where ordinary residents are only asked to vote for the strategic plan.

What we see here is a double challenge related to opportunity apathy. In the first instance it is hard for the local boards to get involved with the space of possibilities at hand because of the complexity when they look ahead 20 years into challenges, like raising energy prices, that they have just begun to understand the impacts of. And foreseeing what they, or the future residents, would want for their homes in 20 years time, and to understand how basic features of the department may accommodate that, is even harder. In the second instance, involving the ordinary residents is a challenge in itself. They are even unsure about what the whole exercise is about, and they may be feeling even strange to open opportunities.
Three challenges

The above elicits three main challenges for democratic strategy development.

Involving people

Many residents do not attend residents meetings. It seems hard for them to justify the effort, even if it is just a matter of attending a meeting for an hour, and for many it also seems impossible to break the code of the established democracy, and thereby motivation to attend drops even further.

As pointed out above, Facebook seems to have potentials for engaging people because many already use Facebook, but it fails by not providing structures for democratic engagement, in particular there is no support for the maintenance of a friendly debate climate, and for idea development.

Opening the process

The discourse of social housing democracy is hard to penetrate for many residents; on top of that, local boards seem to be anxious about possible unrealistic, unhealthy, or other proposals from ordinary residents that do not conform to established standards and values of social housing.

Beboermødeportalen was an attempt to opening the process in a safe way, to let all residents learn about the discourse, enabling them to contribute in a way that is understandable for the local board, and avoid the stress when proposals can only be discussed and possibly accepted within the very short time of the annual meeting. In relation to the strategy process in BK, Beboermødeportalen did not provide support for generation and development of new ideas.

Providing views into the possible practical futures

Residents, as most other people, think about the future in terms of the existing world and possibly very specific proposals they are faced with. This inability to see and understand the unknown was addressed in early PD methods such as organizational games, mock-ups, prototypes etc

Beboermødeportalen can be seen as an attempt to help idea development by providing a way for residents to link the discourse about future possibilities and changes to actual practice with current arrangements. The weakness is, however, that current practice may be taken too much for granted. If a resident is asked about alternatives to the ironer just when he is about to use it, he may only focus on the non-ironer situation as a complication.

To see into possible practical futures we need alternatives to reflect current life in. Provocations, wild ideas, more advance practices, or just other arrangements to compare current situation with.
IT support for strategy development in BK

Asynchronous Future Workshop

Challenges, such as energy prices, or the changing demographics in the department, could be posted as a starting point and then a limited number of days could be allocated for each of the phases, critique, fantasy and realization. In the critique phase administrative staff and the local board would provide knowledge about the challenge, in the fantasy phase the task for the local board would be to show that any idea is legal, avoiding criticism of others ideas may be better done by third parties. In the realization phase the local board, or a third party, would help reaching a joint understanding of the ideas and administrative staff would help in assessing and assuring realism. Several challenges or issues could be run in parallel with non-overlapping phases. The weakness of this idea is that it requires residents to involve themselves in a longer process.

6.2.2 Treasure Hunts or Debate Tours

In a treasure hunt like setup based on geocaching., individuals or smaller groups, residents would be taken on a guided tour around the department. To complete the tour they would have to engage in debate, and suggest solutions to issues, at a number of locations. Locations could be inside or outside residents’ own apartments, and could be in places that have issues (e.g. this outside wall emits this amount of energy per year the standards are this, what could we do?), or in places with opportunities or unused resources (e.g. the lawn is never used, suggest facilities that would make you use it). Posts (or locations) could contain links to existing solutions in other housing organizations or other means of inspiration. Such treasure hunts could last for less than an hour and up to several days (with breaks), and the debate inputs could be made while at the location or somewhere else. Technically, the treasure hunt could be based on GPS and location specific web pages or a specific app. It could also be derived from the Beboermening prototype (op.cit).

Co-development of extreme character and scenarios

Within the approaches loosely labeled as critical design, systematic work with extremes has proved to support innovation well (e.g. Djajadiningrat 2000). In the development of future strategies for the departments of BK the development of housing for extreme scenarios and extreme characters could be a vehicle idea generation. Extreme scenarios could be related to environmental challenges. E.g. “In twenty years it will rain 200 days per year and there will be many storms, but average temperatures will be 10 degrees higher. What are the challenges and opportunities, and how can we deal with them?” Or, “In the future most families
will be brought together with children from prior marriages. Typically, two adults, their 1-2 shared children, as well as four children that live part time in another place. How can we provide the best conditions for such families?”. Extreme characters could be “the mercenary”, “the thief”, “the promiscuous single mother of six”, “the model railway enthusiast”, “the flamboyant gay couple” or more extreme. And the question could be how would the ideal apartment in our department be for each of these?

Development with this kind of extremes could well take place in a physical workshop, but since attendance to physical meetings seems to be limited, a web-based approach makes sense. One format would be that extremes would be suggested by process facilitators as well as by the broad range of residents. Within a short period of days, all residents could supply stories, descriptions, drawings etc. A follow up phase could comprise elements of the asynchronous future workshop, and could be summed up and related to the more realistic task at hand.

Conclusion

In this paper I have outlined challenges to the involvement of social housing residents in strategic planning for future housing quality. I have pointed to the specific problem of opportunity apathy, and how it can be addressed through computerized support for collaborative ideation. In the coming year I will aim to make experiments along these lines with BK.

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First Steps towards the Development of Convivial Tools in the Digital Age beyond the Facebook Model

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Abstract. In this paper we outline the main traits of our research in the domain of social neighbourhood networks. We report the main findings from the literature survey performed to orientate our research efforts and anticipate some results from a questionnaire based user study that involved 200 potential users of a social media aimed at supporting their life in condominium and in their neighbourhood. This class of social media is opposed to the currently dominant model, which we denote as the Facebook model, and is related to an important component of the sociality phenomenon, which we denote as conviviality, after the seminal works by Illich and others.

Motivations and Background

Very simply put, nowadays eVoting regards the use of ICTs by government institutions to let citizens express their opinions on specific matters of concerns, or more commonly, to receive mandate to represent their will in policy and decision making for the collective interest. Our contribution in going beyond this current picture is to focus on the use of ICTs, and more specifically Social Media (SMs), to develop communities of citizens at local level who are better informed on what they are called to express their vote and, possibly grow these communities so that they become mature Communities of Practice, which are able to have an impact on local (and not so local) institutional bodies. The kind of practice we would like to focus on and around which we aim to study the facilitating role of SMs in supporting the growth of the related community of practice is strictly related to collective opinion making and deliberation: it is the practice encompassing the collection of multiple stances, proposals and opinions
from the grass-root level of the community; the negotiation processes by which conflicting stances are discussed, reformulated and eventually integrated; the drafting of the motions that could represent the majority of the members involved; and eventually the building up of the “single voice” that could most effectively interact with the institutions and corporates at stake\(^1\). Our point is that such a community of practice (where the characterizing practice is not related to any kind of work, but rather it grows up from a bottom-up need to gain momentum and credibility to have an impact on the decisions related to a local reality and circumscribed territory) can be supported by ICTs, but not ICTs whose structure (or underlying model) is that of the Social Network Sites that are having an amazing worldwide success in the digitized societies.

SMs, and especially the so called Social Network Sites (SNSs) are an impressive phenomenon of the Digital Age that, in virtue of its extent, can be addressed from several perspectives and with multiple research aims. The research aims that we will outline in the next sections emerge from a preliminary question regarding whether the worldwide use of SNSs has so far improved the social capital and well-being of the people involved. This question has been addressed several times since the first introduction of successful SNSs. Studies addressing the role between Internet and sociality have often spent words of more or less cautious optimism in their discussions and conclusions: the reader can refer to, e.g. Wellman et al. (2001); Lee and Lee (2010) to have a glimpse of that portion of specialist body of works.

An influential reference that has often been cited by the less optimistic, or overtly contrarian, scholars was that of Putnam Putnam (2001). Putnam in his well known studies claimed that: i) in the thirty years before the end of the millennium, social capital had been inexorably declining; and ii) technological progress was one of the most plausible causes for this erosion, mainly due to the progressive individualization of entertainment and service/good consumption that it enabled, and sometimes fostered. This hypothesis, which at the beginning was little more than a mere conjecture, has recently received some further confirmation Antoci et al. (2013).

In fact, almost at the same time of Putnam, also Kraut et al. made a similar point, coining the expression “Internet Paradox” Kraut et al. (1998) to account for the apparent role of the Internet in making us less socially involved and less psychologically healthy. In this same strand, other researchers have pointed out as an increase in Internet usage is associated with decreases in the modes of communication Stern (2008), in the democratic autonomy of the people McChesney (2013), and even in their cognitive and learning capabilities Carr (2011); and, more notably to our aims, how the use of SNSs, like Facebook, is associated with an increase in social alienation Marturano (2011), socially destructive feelings like jealousy Muise et al. (2009), frustration Chou and Edge (2012) and envy Krasnova et al. (2013), and even a slight but clear decrease in the overall quality of life Kross et al. (2013).

\(^1\) This practice and the related community was suggested by Etienne Wenger in a private conversation.
A research on conviviality

In the light of the controversial research undertaken so far on the impact of SNSs on macro-scale level, our research question adopts a more circumscribed and purposely limited scope: we focus on the potential impact of social media on sociality when these are adopted in smaller existing communities, that is on their influence at meso scale (cities, neighbourhoods, streets), and micro scale (single multi-family buildings, or aggregates of buildings on the same street, condominiums and supercondominiums, respectively). Thus we focus on the impact of Social Media on existing communities of place, that is on groups of people living in the same neighbourhood, or even in the same building (condominium), and more precisely on two constructs that are often associated with community life, that is the “social capital” and “sense of community” of its members. However, to state that our contribution lies in the research strand that aims to frame and understand the actual, and also potential to be, impact of SNSs on sociality would be only partially true, as we also aim to address sociality, with respect to the design of functionalities that could support it.

Sociality generally refers to the set of attitudes and actions that individuals rally to develop social links with other people, associate with them in communities, and interact within a common framework of mutually recognized membership to the same community. However, we propose to distinguish within the vast concept of sociality, which is often treated as a single undifferentiated dimension, at least two main components: “sociality as practice” (cf. the practice theory by Bourdieu); and “sociality as communication” (cf. the social systems theory by Luhmann).

We believe that the communication pole is by far the most hegemonic: we refer to it with the expression “Facebook model” (of sociality fostering). For this reason, we propose to denote the latter pole, which nevertheless would be reductive to equate to cooperation only, with a different term: conviviality. This term needs to be carefully characterized especially towards the design of innovative social media having a stronger impact on the civil society.

Conviviality in (very) short

We are aware that the literal meaning of the term “conviviality” could hinder its wide adoption, especially in the design discourse: in fact dictionaries usually refer this term to what pertains to “social events where people can eat, drink, and talk in a friendly way with others” (cf. Merrian Webster 2014). Although this meaning is certainly true, and will not be repudiated at the end of our argumentation, we propose it for the same reasons it was first proposed as a value in the context of urban communities by Illich in the 1970s first, and then by Pettie in the late 1990s (all together with many others in the mould of these latter intellectuals).
More technically speaking, Illich first used this expression to denote specific tools (and hence nor people nor situations), the so called “convivial tools”, and consequently the communities of people using these tools Illich (1973). From Latin con-vivium — to live together— (and only hence to have a nice time together), a convivial tool is a tool fostering conviviality and hence designed to be easily used, by anybody, as often or as seldom as desired, for the accomplishment of a purpose chosen by the user; it’s a tool that enables “autonomous and creative intercourse among persons, and the intercourse of persons with their environment”: its aims are then to unite people in both its use and production; not to alienate them; and give them opportunities to enjoy life together. Convivial tools are “new tools [people can] work with, rather than tools that work for [people].”(p. 10). Some years later, Peattie took up again this notion in the context of urban life and planning, defining conviviality as a set of “small-group rituals and social bonding in serious collective action, from barn raisings and neighbourhood cleanups to civil disobedience that blocks the streets or invades the missile site” Peattie (1998)(p. 246), thus stressing the potential for action of people within the same local community that is enabled by communication and that somehow goes beyond mere chattering and messaging.

Moreover, in Illich’s words, convivial tools are “responsibly limited [...] modern technologies [that] serve politically interrelated individuals rather than managers [and corporate profit-related aims]”. More precisely, Illich defined a convivial tool as “that which gives each person who uses it the greatest opportunity to enrich the environment with the fruits of his or her vision”: it is therefore a tool empowering the user and giving her both voice and the opportunity to have an impact on her world; and a tool whose “renewal would be as unpredictable, creative, and lively as the people who use them” Illich (1973), so envisioning “in nuce” even the most recent tenets of End-User Development Fischer (2009). It is also a tool promoting continuous learning, but not in that it backs up the teaching of someone through it, and the internalization of abstract instructions and notions (characteristics of non convivial tools), but in terms of self-learning and the promotion of “unhampered participation in meaningful settings”. In light of this, we then use this term then to denote a class of artifacts that are aimed at “promoting sociality, self-expression and autonomous and creative intercourses among individuals”, and therefore both communication, and what adds to this latter the “will to act together”, that is collective deliberation, collective planning, and collaboration Nowicka and Vertovec (2013) to achieve collectively set purposes by means of agreed upon line of actions. If, also like Antoniadis and Apostol write “sharing information with neighbours is a critical requirement for creating convivial physical, and not virtual, communities and for a more informed and cohesive participation in public affairs.” Antoniadis and Apostol (2013), our point is to consider communication as a necessary, but far from being sufficient, condition for empowering “convivial physical, and not
virtual, communities”, whereas coordination for common actions and collective agreement are the elements tapping in communication that can support this dimension of sociality more clearly.

Our research: context, preliminary results and agenda

The idea that investing on the smaller, grass-root communities could have beneficial impact on phenomena at a higher scale is not new, as rightly noticed in Cho and Rogel (2013): this idea dates back to the beginning of the 20th century when Judson Hanifan described neighbours as sources of social capital (expression coined in that occasion) for each others, that is resources to satisfy personal needs as well as improve the living conditions for all of the members of the whole community.

The context

Condo communities are an interesting matter of concern for their diffusion, for their hierarchically flat (bossless) structure, which would call for some sort of support of a “distributed leadership”, and for the degree of infighting they exhibit, which has relevant consequences on one of the most congested, and hence slow, legal systems in the world. With the exception of “nuclear families”, people living together in the same condo are the smallest community with somehow clear-cut boundaries: they are, indeed almost by definition, “communities of place” and, to some extent also, “communities of interest” (being the common concern the ordinary administration of the same building, often with respect to service and good suppliers, and maintenance interventions). As condos give shelter to people with no other common trait than living in the same place, those human ensembles very seldom exhibits the features of other types of communities where social ties are strong and somehow affecting the lives of their members, like communities of knowledge, of purpose, of practice Foth (2003).
These aspects motivated us in beginning a research project, called condoviviamo (an Italian portmanteau from ‘condominio’ and ‘viviamo’, i.e., ‘condominium’ and ‘let’s live’, see Figure 1), which lays at the intersection of different, but yet related, disciplines, like community psychology, urban sociology and social and community informatics Carroll (2012). In this project we aim to study the relationship between the constructs known as “social capital”, “sense of community” and “social trust” at neighbourhood and condo level, and the potential impact of vertical SNSs on these constructs at either levels.

Preliminary results

To carry on this research strand, in Fall 2013 we undertook a questionnaire-based user study to investigate the attitude of people living in a city towards social media, in general, and social media supporting condo and neighbourhood life, in particular; their preferences towards community-oriented functionalities (what are valued most if already present, what are longed more if still not available); and whether some correlations could be detected between the sense of belonging to the place where one lives and the attitudes mentioned above. We collected almost 200 complete questionnaires and weighted the responses for age bias. In this paper we can anticipate results that will be soon discussed in a full research paper. The respondents declared a relatively low sense of belonging to the place where they live, both in the case of their condo (P=.002) and their neighbourhood (P=.001). These two perceptions were mutually correlated (Cronbach’s alpha=.67), and their aggregation was strongly correlated with several sociometric variables, like perceived acquaintanceship with neighbours [Spearman’s rho=.56, P<.001], perceived quality of relations with neighbours [rho=.4, P<.001], frequency of interaction with neighbours [rho=.5, P<.001]. This would corroborate the idea that
investing on the sense of belonging at micro-scale could impact also the meso-scale sense of community.

In the text of the questionnaire we briefly described the idea of a convivial tool that could support both social practices and communication in their condos and enumerated a number of functionalities, and tasks that could be supported by such a tool. In light of this description, the sample of respondents did not show a clear positive (nor negative) attitude towards such a tool. This can mean that the sample did not really have any strong feeling about the idea; however we cannot rule out that we failed to explain what this tool would be about in the questionnaire text effectively.

We detected a light to moderate positive correlation between the attitude towards this kind of convivial tool and some other sociometric variables: the higher this attitude is, also the higher the sense of belonging to either the condo or the neighbourhood (rho=.3, P<.001), the wish to have a better relationship with neighbours (r=.44, P<.001), and to do something of concrete to improve the quality of life in the neighbourhood (r=.4, P<.001). The more important people deemed it to share information about how the condo was administered, the higher the attitude for a tool that would allow this [rho=.21, P=.001].

In regard to the facilitating factors that emerged more clearly from the analysis, we detected that age was important [H(2) = 9.274; P=.010] (the younger the respondents, the higher their attitude), as well as having already an account on any SNS [U(227)= 3454; P<.001]: SNS users showed to appreciate the idea more than the other subgroups of respondents.

In regard to our task of prioritization of the functionalities that users would like to find in such systems, we can distinguish two segments: notably practice-oriented features were considered of higher priority than those communication oriented: the capability to organize collective events and be reminded of community deadlines (collective calendar), to be supported in the management of “ethical purchasing groups” (Gruppi di Acquisto Solidale, or GAS in Italian), to manage loans and used stuff exchanges, and to collect opinions and ideas from the grassroots. Conversely, having a personal page (account profile), being able to look for people with similar interests, and to discuss with other members on topics decoupled from practices (Forum) were all considered characteristics of lower importance (the difference between priority levels was statistically significant).

The research agenda

The Italian context presents the opportunity to run interesting comparisons between alternative approaches to support communities of place in the urban context: there is a vertical social network, called Condomani\(^2\) that counts

\(^2\) www.condomani.it
approximately 5000 registered users all over the National territory and aims to improve communication and the task of managing a condo with specific functionalities oriented to the administrator(s) and the involved suppliers and maintenance technicians, quite similarly to other platforms active in other countries, like iNeighbors\(^3\) Hampton and Wellman (2003) and Nextdoor\(^4\) in Canada and US Masden et al. (2014), and Peuplade\(^5\) in France.

There is also an initiative called “social street”\(^6\), that has recently gained great attention from the mass media. This is a network of people that spread a set of guidelines to create a condo- or street-related private groups on Facebook\(^7\) and use such a virtual place to organize community initiatives and socialize. There are also much smaller and condooriential initiatives from private citizens, who have created blogs or Web sites to create and maintain a very local community (e.g. PaoloSarpi\(^8\), Pesciolino\(^9\), Scarsellini\(^10\), this latter involved in a user study that has been recently reported in Cho and Rogel (2013).

Therefore, our future work will regard a qualitative research program that will encompass individual interviews, Focus Groups and questionnaires, in order to collect evidence of any significant difference between these different experiences: namely vertical corporatemanged SNS, the vertical use of generalist SNSs (like Facebook), and self-managed adhoc social media (which is probably closer to our ideal of convivial tool). Another objective, which is more ambitious but also more original, will regard the study of a phenomenon that we conjecture about but never really observed in “vivo”: the longitudinal evolution (we adopt the more neural term of “epimorhism”) of a group of people that, from being a mere “community of place”, progressively exhibits the characteristics of tighter kinds of communities, like the communities of interest and of practice.

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\(^9\) pesciolino.wordpress.com
\(^10\) http://housinglab.wordpress.com/progetti/scarsellini-vicini-piu-vicini/


Consultation as education: a Learning Management System for online open consultations on bioethical issues

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Abstract. Democratic theorists and practitioners have grown increasingly interested in the innovative possibilities opened up by the so-called digital democracy. Information and communication technologies (ICTs) have been suggested as potential solution to legitimacy and trust issues by which current democratic arrangements seem to be affected. These technologies would ameliorate or overcome completely such issues providing a technical ground for genuinely new and sustainable participatory processes that could in turn result in more radical forms of democracy. This paper focuses on the possibility of having participatory processes meant both to (i) enable citizens’ input into policy-making for bioethical issues, i.e. ethical issues arising from the biomedical and biotechnological progress, and to, by the very same token, (ii) provide citizens with vetted and contestable information and with the proper rhetorical tools for an authentic deliberative contribution.

Introduction

Democratic theorists and practitioners have grown increasingly interested in the innovative possibilities opened up by the so-called digital democracy (Coleman &
Blumler, 2009; Coleman & Shane, 2012; Davies & Gangadharan, 2009; Fung, 2003). Information and communication technologies (ICTs) have been consistently suggested as a potential solution to legitimacy and trust issues by which current democratic arrangements seem to be affected (as shown, for instance, in low electoral turnout rates and popular outcries). These technologies would ameliorate or overcome completely such issues providing a technical ground for genuinely new and sustainable participatory processes, capable of easily scaling up to an entire polity. This could in turn result in more radical forms of democracy.

So far, however, such promises have remained mostly unattained. The democratization of the public sphere that would supposedly follow the disruption of the media system has proven hard to gather empirical support. Hindman (2009) showed how the impact of the Web on the media has not resulted in the kind of narrowcasting of information that had been prefigured as a remedy to the domination of the public sphere by socio-economic élites. Slightly further on the spectrum of informal to formal loci of the public sphere (Mansbridge, 1999), democratic innovations—i.e. “democratic devices that provide citizens with a formal role in policy, legislative or constitutional decision-making” (Smith 2009, Introduction)—leveraging on ICTs have failed to engage significant, and/or representative portions of the population and have deployed a vast array of widely differing designs which made their impact hard to gauge and even harder to compare (Abelson, Blacksher, Li, Boesveld, & Goold, 2013).

Our contribution focuses on the possibility of having online participatory processes meant both to (i) enable citizens’ input into policy-making for bioethical issues, i.e. ethical issues arising from the biomedical and biotechnological progress, and to, by the very same token, (ii) provide citizens with vetted and contestable information and with the proper rhetorical tools for an authentically deliberative contribution to public decision-making. We intuitively believe that the same method could support issue-specific policy-making in areas (other than bioethics and health policy) whose deliberative pattern is relevantly similar to the one we outline for bioethics and health policy.

The normative standpoint

When, in 1927, John Dewey published his “The public and its problems” (Dewey, 1954, p. 31) as a reply to Walter Lippmann’s skepticism in democracy (Lippmann, 2011), the reasons for skepticism in democracy Dewey was counterarguing were very similar to the ones that characterize current elitist and technocratic stances: a disquietingly low voter turnout, a widespread apathy, the
disaffection with politics, the uninformed sentimental complaints, the swift preferences of the public, the detachment of candidates’ electoral fate from their political expertise, the influence of “Big Business” on electoral outcomes and on enacted policies, and so forth. All of this, paired with the increasing complexity of matters that are part and parcel of policy-making concerning controversial technoscientific issues, apparently made (and still seem to make) a forceful case for some form of technocratic government. Dewey himself lamented the disrupting impact of “[s]team and electricity” on traditional modes of social cooperation (Dewey, 1954, p. 141), therefore sharing Lippmann’s premises. However he went on to argue that the solution to this kind of disarray between technological progress and social practices was not the further removal of policy-making from the population, but rather the proactive cultivation of a more progressive public sphere. This, he says, is tantamount to subscribing to a specific interpretation of the old saying that the cure for the ills of democracy is indeed more democracy. This interpretation excludes that “the evils may be remedied by introducing more machinery of the same kind as that which already exists, or by refining and perfecting that machinery” (Dewey, 1954, p. 144). The suggestion that Dewey put forth was rather that of engaging with the construction of a robust “Great Community” in which members of sparse groups within the “Great Society” ought to share respectfully their views.

Nowadays, even liberal democratic theorists like Urbinati charge the Web (along with a number of other recent evolutions of the public opinion such as the turn to populistic or plebiscitary forms of democracy) with having deteriorated the normalcy of public opinion formation, to the point that she claims the new media have managed to disfigure Western democracy, undermining one of its essential phenotypic traits, i.e. traditional mass media (Urbinati, 2014, p. 16). And indeed, today’s talk in the public sphere seems affected by evils peculiarly similar to those that affected democracy between the two world wars. Dewey’s remedy thus looks as promising as it did almost a century ago. In fact, the failure of recent attempts at fostering a more participatory kind of democracy might be due to the misplacement of their efforts, a misplacement that we can characterize, with Dewey’s words, as an attempt at “introducing more machinery of the same kind as that which already exists”. In fact, even when deemed successful, consultative initiatives fail to gain traction due to the low number of people involved and to their scarce representativeness of the general population.

The most notable Italian example is the recent partecipa! initiative launched, widely advertised and financially well supported by the Monti cabinet. The initiative ended after the government had been replaced by the Enrico Letta cabinet.

As we recall below, Dewey suggests that the problem is clearly not the pace of technological progress, but rather the failure of democratic institutions to take up such progress and evolve, thus letting ideas and ideals lagging way behind technology.

The initiative ended after the government had been replaced by the Enrico Letta cabinet.
citizens submitted online surveys over the course of the consultation. Once reported to the highest political offices the long document summarizing the results of the consultation, though, was never referred to in the actual institutional discussions on constitutional reforms. The survey itself did not differ significantly from a standard market survey. The only relevant difference was, as a matter of fact, that market surveys are specifically addressed at representative samples of the target population. The unrepresentativeness of the sample (and its modest size as compared to the entire population with voting rights—more than 45 million people) might be one of the reasons justifying complaints in case the report was actually used to feed into the process of constitutional reform. This could be avoided completely in case the scope of the consultation is restricted to the horizontal, peer-to-peer exchange of reasons that ground some course of action over others. This is what, in a nutshell, deliberative democracy prescribes: that reasons be given as to why some collectively binding decision is being taken (Gutmann & Thompson, 2004, 1996). Upstream deliberative engagement can be a way to provide representative institutions with the reasons that ought to be taken into account, and hopefully formally addressed, whenever public choices are taken vis-à-vis some form of moral disagreement. We believe this is compatible with democratic innovations aimed, in a Deweyan spirit, at fostering a sense of communality.

This view does not predicate against the backdrop of a form of radical alternative to representative institutions. In fact, if one does not want to go for a plebiscitary specification of the deliberative democratic ideal, then deliberative democracy is to be turned practically into some—more or less complex—articulation of political representation and direct (depoliticized) participation (Pettit, 2004). Developing a similar line of thought Sabel and Cohen in the late ’90s presented their idea of a directly-deliberative polyarchy (Cohen & Sabel, 1997).

A host of attempts at deliberative bioethics have been made (Abelson et al., 2013), the most renowned being the one conducted by the Human Fertilisation and Embryology Authority (HFEA) in the UK upon receiving, in 2006, a license request for the creation of what came to be known as cybrids, i.e. cells created via the nuclear transfer of human somatic cells into non-human oocytes (HFEA, 2007). Within the array of consultative instruments used by the HFEA were face-to-face deliberative workshops. These unfortunately proved part of their

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4 As measured for the latest political elections. Data can be found at http://www.interno.gov.it/mininterno/export/sites/default/it/assets/files/25/2013_02_07_Guida_alle_Politiche_Servizio_elettorale.pdf (last accessed April 4th, 2014)

5 Pettit’s specification of what depoliticization amounts to is opaque and partly ambiguous. In fact, the kind of institutional innovations he calls for as depoliticized complements to representative democracy are participatory in nature and therefore suggest that what he has in mind with depoliticization is something akin to the removal of professional politicians from some depoliticized institutional loci.
limitations: being very costly, and affording relatively little time for participants’ information and consideration. On the other hand the Authority’s efforts to take the consultation online were limited to a paperless translation of a standard survey. The range of activities proper of deliberation can be supported via online tools and it seems intuitive to at least give a try to such solutions to a problem that has been apparent for quite some time now.

In the light of what we said it does make sense that the technological solution with which we decided to support our online consultation ended up being a Learning Management System. This enables the sort of collaborative and deliberatively discursive finalized efforts that might ameliorate the ills of contemporary democracy.

The deliberative process

The deliberative process that is being experimentally deployed has been drafted and perfected as a UML-compliant Activity Diagram (Fowler, 2003). Its structure embodies the theoretical precepts laid out as a set of deliberative criteria by Boniolo, and Boniolo and Di Fiore (Boniolo & Di Fiore, 2010; Boniolo, 2012). In particular it embeds a minimal requirement for scientific competence and moral reasonability. This is believed to enhance the discussion rendering it genuinely deliberative.

In Fig.1, colors identify different categories of actors (the owner of the process in blue, a board of scientific and ethical experts in green and participants in red), whereas the shapes of the boxes is used to signal actions (rectangles) and objects (circles). Cylinder-shaped boxes denote pools of data collected at specific time points.

In describing the process here we employ some degree of abstraction in that we outline how participation ought ideally to look like. Further below we instead describe the actual functioning of the online environment that supports our experimental deployment of the process. This distinction will become clearer as we define the experimental design.

Participants will ideally have to take part in a two-stage participation workflow. Each of the stages is further articulated in a series of phases. In what follows topics are broad areas of interest (e.g. stem cell research), issues are problems falling within specific topics (e.g. using human embryos for the derivation of stem cell lines) and questions are relative to proposals tackling one issue or another (e.g. “Ought we to use embryos for the derivation of stem cell lines?”).
Figure 1. Activity diagram outlining the ideal participatory process
Agenda setting

Survey of participants

Participants who join in on a voluntary basis are briefly surveyed for essential socio-demographic traits such as gender, age, geographic area, etc. As compared to the survey described below and used for our experimental deployment, this is clearly shorter and only meant to screen the participating population.

Selection of the topic(s)

Self-selected participants will cast votes on their favorite topics for consultation (they will be selected from a given list of items and will have the chance to add new items to the list). In the experiment described below we discount the value of this selection because, for pragmatic reasons, one question concerning one issue about one topic has already been selected.

The environment being open for participation to anyone who wishes to join, some degree of difference might end up being lost. This effect is undesired for a variety of reasons that range from the well-known effect of like-mindedness on the polarization of group decision (Sunstein, 2009) to the systematic de facto exclusion of minorities to the loss of deprovincializing effects associated with ‘hearing the other side’ (Mutz, 2006, p. 68). Such undesired effects of openness will therefore need to be downplayed by attempts at selective recruiting (Fung, 2006, p. 67) of traditionally disengaged and unfairly excluded populational subsets, e.g. the young and the elderly, ethnic minorities. This might be seen as a form of affirmative action.

Validation of the question(s)

Participants will be asked to provide feedback on the formulation of specific deliberative questions drafted by a scientific committee concerning the issue(s) belonging to the topic(s) selected for consultation. This process of bottom-up input into the formulation of the questions will be allocated a finite amount of time, after which the committee will rework the questions presenting them in some newly crystalized form, along with replies to doubts and perplexities expressed in the previous phase. The consultation will be then set up around those questions.
Deliberative participation

Voting intention
Participants will be presented previously validated questions introduced by scant information about the issue the question is relative to. These questions will have a Yes/No form and allowed answers will range from “Completely agree” to “Completely disagree” on a 4-point Likert-like scale.

Information
Once expressed their ‘intuitive’ vote, participants will enter a section in which a host of information materials are presented as drafted by the scientific committee. Information materials are divided in two sections.

(1) Scientific knowledge
By the time participants start engaging with the actual consultation, the scientific committee will have drafted information material pertaining to the issue being discussed. Contrary to what is the norm for offline deliberation, and relying on the availability of a longer span of time¹ for the consultation itself, this information material will be dynamically adjusted in the form of a crowdsourced Wiki to which participants will be able to contribute and within which they will be able to challenge assertions put forward by experts. To go through to the ethical information section, participants will be asked to answer a small set of basic questions concerning the information provided in the material. Due to the potentially changing content of the materials, in case questions relate directly to contested or controversial claims, the test can itself be revised. It must be stressed that these tests can be taken by each participant as many times as they like, until they manage to pass on to the next section.

(2) Ethical knowledge
People will be presented with a plain-language review of the main arguments tackling the ethical implications of the issue. Again, the material is only a starting point for further collaborative gathering of information and feedback. Once ready, each participant will be asked to present a principled counterargument to one of the arguments presented in the material as supporting the position he intuitively subscribes to. This is meant to test whether the participant is so ideologically

¹ James Fishkin’s deliberative opinion polls (Fishkin, 2009), for instance, normally stretch over weekends, whereas online asynchronous forums can afford longer spans of time. In our case one month per question.
committed to his own position as to be unable to conceive of reasons that go against his own point of view.

The competence test used for phase (1) can roughly be automatized. This is not the case for the assessment of the arguments presented by participants in phase (2). This problem is clearly capable of affecting the scalability of the method we are presenting. Such issue can however be tackled devising this test as an automated analysis of the formal structure of the argument itself, either via some sophisticated natural language processing instruments or, more realistically, having semi-structured submissions (e.g. a list of premises, each of which must make reference to a linkable source, and a list of conclusions depending on those premises).

Goal-oriented discussion

Participants will then gain access to an asynchronous structured forum, with contributions being answers to the deliberative question(s) and replies to answers being claims supported by evidence in favor or against the proposal (examples of tools that work along these lines can be found below). The discussion will feature both participants and experts acting as peers. The goal of the forum will essentially be that of supporting the delivery of a report containing recommendations to be handed over to a public decision-maker. The entire work will be allocated a reasonable amount of time depending on the scope and extent of the issue(s) being discussed.

Voting

Finally, participants will express their preference a second time. This will happen at different times depending on whether people are willing to spend more time discussing and contributing to the drafting of the report or not. Data concerning the participating population, their preferences and how they transformed as a result of the process, will be attached to the report itself.

The technological solutions

What follows presents the summary of a review of the existing technical solutions that could be employed in order to support our deliberative process. The workflow outlined above led us to single out the activities that we needed our platform to cover. Having these needs in mind, we proceeded to the evaluation of existing technologies, to see whether there were any of those that could satisfy the requirements set forth in the workflow. In order to accomplish such a result in a rigorous way, we set up our review via three preliminary steps:
Isolating relevant technologies, that might support one or more of the features we were looking for.

Subdividing this lump set of technologies into three subsets that would highlight features decisive for specific chunks of the workflow: (a) Argumentation tools; (b) Deliberative platforms; (c) Learning Management Systems.

Making requirements or desiderata subset-specific.

This resulted in a list of a dozen viable instruments. Both the analysis of the technologies isolated and the process of isolation of those technologies have been informed by the framework proposed in (Wenger et al., 2005, p. 8) that identifies four levels of analysis of community technology:

1. The configuration of technologies that a community and its members use […]. In our analysis, we did not address this level.
2. The platforms into which vendors and developers package technology […]
3. The tools that support specific activities (e.g. a discussion board), or bridge between types of activities […]
4. The features of tools and platforms that make them usable or differentiate one offering from another.”

The results of our taxonomical effort can be summarized as follows.

Deliberative platforms

Tools such as LiquidFeedback\(^2\), IdeaScale\(^3\), Airesis\(^4\), Loomio\(^5\) and OpenDCN\(^6\) were initially thought to be able to provide the range of features that might support the entire deliberative process as described above. All of these implement some specification of a space for discussion and voting about issues. However, the first four ones, are mainly idea gathering tools which embeds a specific deliberative path. OpenDCN is a platform including several deliberative tools, including wikis, informed discussions, certified consultations (i.e., voting) as well as an “agenda” component to customize deliberative paths. Unfortunately, it does not provide functionalities to support the competence tests of the Information stage.

Argumentation tools

Tools such as Deliberatorium\(^7\), Compendium\(^8\), The Evidence Hub\(^9\), and Reflect\(^10\) could support and structure interactions within the peer-to-peer discussion forum

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\(^2\) http://liquidfeedback.org/, (last accessed April 4\(^{th}\), 2014).
\(^3\) https://ideascale.com/, (last accessed April 4\(^{th}\), 2014).
\(^4\) http://www.airesis.it/, (last accessed April 4\(^{th}\), 2014).
\(^5\) https://www.loomio.org/, (last accessed April 4\(^{th}\), 2014).
\(^6\) http://www.opendcn.org/, (last accessed April 4\(^{th}\), 2014).
\(^7\) http://cci.mit.edu/klein/deliberatorium.html, (last accessed April 4\(^{th}\), 2014).
to which participants gain access after going through the information phase. Such
tools might be thought to support also the argumentative test in the second part of
the Information phase.

Learning Management Systems

Learning Management Systems such as Moodle\(^1\), Khan Academy\(^2\), and a couple
of LMS in use at our University, namely Just Learn It! (JLI!)\(^3\) and Ariel 2.0\(^4\)
were one of the essential points of reference given that our process relies
massively on the certification of competence to instruct a phase-wise progression
of the participatory flow.

With this (by no means exhaustive) classification available we were confronted
with the choice whether to bundle together two or more tools (namely OpenDCN,
a LMS and an argumentation tool) which would have required substantial
programming, or to sacrifice some of the relevant features and configure one tool
in order to have it support most of the features. We went for the second strategy
due to mostly pragmatic reasons, i.e. tight budgetary and time constraints.
Eventually we picked Moodle and turned it into our tool of choice.
Moodle’s modular structure and versatility allowed for the implementation of the
mix of education and discussion that we needed, without any further developing
effort.

The experimental design

We officially launched the online system on March 26\(^{th}\). Stage one of the process
described above will take place during the month of April, while stage two will
kick off in May.
The experimental design, adapted from (Smith, John, & Sturgis, 2013), is roughly
described below; it is supposed to provide answers to the following questions:

(1) Are there inequalities in participation to this online system? And if so, do
they mirror inequalities already existing in, for instance, electoral voter turnout?
(2) Do individual preferences change as a result of participation?

\(^{8}\) http://compendium.open.ac.uk/institute/about.htm, (last accessed April 4\(^{th}\), 2014).
\(^{9}\) http://evidence-hub.net/, (last accessed April 4\(^{th}\), 2014).
\(^{10}\) http://engage.cs.washington.edu/reflect/, (last accessed April 4\(^{th}\), 2014).
\(^{11}\) https://moodle.org/, (last accessed April 4\(^{th}\), 2014).
\(^{12}\) https://www.khanacademy.org/, (last accessed April 4\(^{th}\), 2014).
\(^{13}\) http://jli.di.unimi.it/, (last accessed April 4\(^{th}\), 2014).
\(^{14}\) http://ariel.unimi.it/, (last accessed April 4\(^{th}\), 2014).
(3) Do information, discussion and finalized discussion have differential effects on these changes in preferences?
(4) Do people involved in the process perceive it to be legitimacy-enhancing?

To provide an answer to these questions, the deliberative process described above has been adapted and somewhat simplified. The first simplification consists in the isolation of one issue concerning one topic: the direct-to-consumer (DTC) distribution of genetic tests of susceptibility to medical conditions. Participants to this first experimental deployment need to register to Moodle and fill an initial survey meant to profile everyone interested in participating for standard socio-demographic traits and self-reported political belonging. At the end of the survey, prospective participants are asked to provide feedback as to the partiality and intelligibility of the question. Comments to the formulation of the question are then analyzed and fed into a reformulation. The question in this validated form is then presented to a sample divided in subsets. Users are randomized to 4 groups, which have been dubbed (a) the control group, (b) the information group, (c) the non-goal-oriented discussion group and (d) the goal-oriented discussion group. No quotas will be set on the groups because the whole sample will inevitably be affected by a significant self-selection bias. The deliberation will be opened on the platform once this phase is over.

Figure 2 Experimental pipeline

Members of the different groups will follow a slightly different path, illustrated in Figure 2.

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15 We use a validated six-item questionnaire (Choma, Busseri, & Sadava, 2009) meant to assess liberalism and conservatism separately.

16 There are also theoretical reasons why representativeness of the sample is not one of the goals for this kind of consultative initiatives. We explore those reasons in a related and forthcoming paper.
Members of group (a) will have to answer one single question, twice: the first time the question will be prompted as the system is launched, whereas the second, once the system is deemed closed. This will allow us to monitor possible changes in the public opinion due to external influences.

Members of group (b) will have to provide an answer to the same question at the beginning of their workflow. Once gone through materials and competence tests that assess their understanding of the materials, these users will have to provide again their answer to the same questions.

Members of group (c) will have the chance to comment on and ask for revision of informational material they will be provided access to and will eventually be granted access to a forum in which they will have a chance to discuss horizontally, i.e. peer-to-peer, about the reasons in favor or against one answer or the other. The forum will be moderated.

Members of group (d) will be asked to do what members of group (c) do, with one essential difference: their forum will be given the explicit goal of drafting a report to be submitted to a public decision-maker.17

It is possible to foresee the submission of a post-test survey to be sent out to groups (b), (c) and (d) asking the subset of the sample to highlight pros and cons of the deliberative process and of tool, e.g. how intuitive the graphical user interface is, how hard texts were to read, how interesting they found the topic etc.

**Relevant endpoints**

Socio-demographical traits of the sample will be compared to those of the Italian general population. This will provide a way to test the hypothesis that advantaged (either economically or culturally) strata of the populace tend to engage more in active citizenship practices.

The measure of drop out rates in different groups will provide an answer to the question whether information or information + non-goal-oriented discussion, or information + goal-oriented discussion do have differential effects on the degree of engagement of citizens as to bioethical issues. We expect the rate to be significantly higher, the higher the demand put on the participant for their participation.

A potential shift in individual preferences will be measured as well. We will try and gauge correlations between the transformation of individual preferences and participation in the discursive deliberative activities of the forum (against the backdrop of a control group and a group exposed to information only).

A post-test survey will provide an answer to the fourth question, asking participants to articulate reasons why they do or do not believe this kind of democratic innovation might have a legitimacy-enhancing potential.

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17 An additional resource concerning the canons of argumentation is available for every participant.
Conclusions

We started from the suggestion that Deweyan insights as to how to further develop democracy in-between the two world wars are still relevant to the issues democracy is facing today. This, we argued, entailed considering consultative initiatives in democratic countries as primarily an attempt at educating people in order to proactively promote a specific ideal of democratic citizenship. Proceeding from these theoretical considerations we tried to embed the features of such a normative theory into an actual online deliberative process. Then we provided a brief summary of the technologies that could intuitively serve as points of reference for the development of an experimental implementation of the ideal process of deliberation we outlined. Finally we singled out the most widely used open source LMS as the tool of choice to support our deliberative process, thus coming full circle with our theoretical and normative contentions. The forthcoming experimental consultation on the direct-to-consumer (DTC) distribution of genetic tests will allow a first validation of the approach and provide elements for its improvement.

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References


E-Voting, the Case for Decentralised Systems

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Abstract. Despite serious concerns about their robustness, e-voting systems have started to be adopted by some countries to support political elections. These systems essentially offer electronic solutions to support existing election paradigms. Social media though radically change the ways citizens can interact with political powers, by allowing in particular a more continuous form of participation. New possibilities permitted by digital technologies should be investigated, to extend these interactions and support new election capacities beyond legacy protocols. Two principles seem of uttermost importance to us. First, the "it freedom of election", that is the capacity not only to participate to an election, but to launch an election and invite people to participate to it. Second, the "it control of election", that is the capacity for the people to control the election process and the computation of its tally. We claim that to satisfy these two principles, decentralised protocols, with no trusted third party control, are of great help, if not necessary.

E-voting systems have been adopted in various countries. Cryptographic means are used to ensure some reasonable level of confidence. Nevertheless, most protocols have been shown to be vulnerable to attacks, thus impeding their widespread adoption. We propose a radically different approach. While elections are traditionally based on a central authority, collecting the votes and computing the tally, we propose to use decentralised protocols, leaving control and tally to the voters themselves.

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1 Work supported by INRIA ADT Brow2brow as well as ANR C3PO projects.
We claim that decentralised protocols might allow to improve classical properties by not relying only on cryptography to guarantee them. More importantly, they can ensure new properties and support new forms of elections. Liquid Feedback offers the possibility to freely organise elections, by using its open source software. Nevertheless the control stays in the hand of the organisers around centralised structures.

The fundamental property we want to ensure, that is the basis of the two principles we propose, is the property of no concentration of knowledge, which can be stated as follows:

*The amount of data accumulated by each participant during an election, that includes ballot casting and computation of tally is logarithmic in the number of eligible voters.*

The amount of data participants are able to accumulate is an indication of the level of control they have over the process. Decentralising the control, means distributing the data evenly between participants.

Such principles have demonstrated their efficiency. For popular decentralised protocols, the control is not ensured by a trusted third party, but by the participants themselves. It is the case for BitTorrent, used by hundreds of million of users for file sharing, as well as for Bitcoin, used for electronic currency. The confidence in these systems, of particular importance for Bitcoin, relies on a trust by computation.

Since in centralised systems, one authority concentrates all the knowledge of the election, it will always be a challenge to trust this authority, and ensure differential privacy for instance, and be confident that the ballots of voters cannot be recovered using additional data. If the control is shared by participants, and they can accumulate at most a logarithmic amount of encrypted data about the tally computation, trust is greatly increased, since leaks and corruption are severely restricted.

Moreover, in such decentralised systems, nobody can interrupt the election process without hijacking the network. The freedom to organise elections cannot be contested by force.

We have developed such a system for electronic voting, which relies on a decentralised protocol. The proposed system, BitBallot, which departs from legacy systems, does not require a central authority to control and certify the correction of the processes. Instead, BitBallot, strongly inspired by decentralised
systems such as BitTorrent or Bitcoin, performs complex tasks in a fully
decentralised manner while ensuring rigorous properties. BitBallot relies on a peer
to peer protocol allowing peers to carry in a cooperative fashion the voting
process as well as the computation of the tally.

One of the main novelties of BitBallot is that voters *pull* the ballots of other
voters, instead of *pushing* their own ballot into the system. We claim that this
technique, which strongly differs from classical systems, greatly simplifies the
protocol while ensuring desirable properties of privacy in a rather straightforward
manner.

The system has been implemented at the browser level, and relies on open
standards such as HTML5 and JavaScript, available on any smartphone, tablet or
laptop. For the synchronisation of ballots handled by the participants, we
developed a torrent, that allows a fully decentralised management of the election
by the voters.

Our experiments on a simulation platform show very reasonable results, both for
the amount of knowledge handled by peers, as for the convergence speed, which
at this stage is linear in the number of voters. The system, accessible on
smartphones, has been tested at this stage by students to grade their teachers.
Methodological and ethical implications of testing alternative designs for technologies supporting democratic processes

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In recent years we have witnessed an increased number of solutions to support democratic discourse and enable citizen to exercise unmediated political power. For example: Liquid Feedback (or lqfb) is a software that was released in 2009 that implements a Delegated voting system which is to establish a new form of political representation and participation that takes into account the knowledge disparity of its participants\(^1\). Similarly the Movement 5 Star, an Italian movement for direct democracy, recently released the M5S OS, a web portal that allows members to vote on law proposal currently under discussion in the parliament and to comment and decide on initiatives that might lead to new law proposals\(^2\).

These softwares have the same core objective: in essence they aim at enabling users to express their political views. However, their interaction design is dramatically different and might lead to extremely different outcomes. For instance, while lqfb uses the *Schulze Method* to select the winner in case of preferential voting, other system like the M5S OS might use a ranked pair voting method.

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1 See also http://en.wikipedia.org/wiki/LiquidFeedback
2 See also http://en.wikipedia.org/wiki/Five_Star_Movement
While from a sociological perspective both approaches could be analyzed with the same lens in order to understand why society is moving away from representative democracy, from a human-computer interaction perspective it is extremely hard to understand the different outcomes that such systems might yield.

These two softwares are extremely different. One of the most striking difference concerns how pools are organized. While in M5S OS one voter counts one vote only and the system does not allow delegation, lqfb has a proxy voting feature which allow the user to delegate his voting power to another user that s/he trusts. Delegation can be revoked at any time, it can be assigned to another user for a given topic or for a given ballot only. Hypothetically speaking, if we were to observe the exact same pool being conducted with the exact same voters over both systems, we would probably obtain radically different results. Then we would be able to reflect on the ability of each of these systems to allow participation in the democratic process and the ability of each outcome to represent the real political views of the citizens. Conducting such comparisons would be extremely important for the evolutions of these systems because we should aim for a design that does not bias results in any manner, that represents with fidelity the political views of the voters, that allows the voters to take informed decisions, and finally that encourages participation.

Unfortunately, conducting experimental comparisons is challenged by several methodological and ethical issues:

- **It is extremely complicated to control all variables in a live experiment.** The scientific method requires manipulation of one experimental factor while maintaining all other factors equal. Unfortunately, achieving this in a live experiment is extremely complicated if not impossible. For example, while one user might access the experiment with a 21” display thus allowing multiple sets of information, another user might use a 10” tablet which could potentially change the experience s/he might have on the voting platforms. Some of these variables might even be impossible to control because they might be related to the historical context at the time the test is run (e.g., the public opinion at the time of the experiment, etc).

- **A within-subject design can lead to presentation and recall biases, while a between subject design can lead to sampling biases.** If we ask users of a voting system to use two different variants of a voting system to cast their vote about a given topic, they might be influenced by the particular order in which they see the variants or their first experience voting might influence how they might vote while voting a second time on the same topic. Conversely, if we used two different groups of users to cast votes for the exact same topic using the two
variants of the design, we might inadvertently introduce a bias in the selection of participants assigned to the two variants.

- **There are ethical implications in applying experimental manipulations to real pools.** Similarly to the research conducted with/on embryonic stem cells, researchers working on technologies for democratic processes face the dilemma of influencing ballots that have real-life implications for the life of the citizens. For instance an experiment might be conducted when voters are debating how to amend the immigration law of the country. Depending on the design of the feature at hand voters can be nudged to vote in a given manner to the pool. In turn the biased results of the pool might results in immigrants being deported, or imprisoned.

Specific design choices might be accused by opposing parties to nudge users in a given direction and to bias the results, so how can we fully explore a design space while at the same time maintaining transparency with regard to the users and the general public? Conducting experimental comparisons of different design for technologies that support democratic processes is extremely important because it is the only way to demystify blunt criticisms, achieve transparency, and make progress on these technologies. It is our responsibility also, as designers and as researchers to make sure out solutions are effectives in achieving a truly democratic interaction in our society.
Towards Societyware: Evaluation of an online petitioning system for parliaments

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Abstract. The increasing availability of computers and the internet enable new forms of and channels for political information, deliberation, and participation (Mambery 2004). The model test “Public Petitions” was a step by the German Government towards a better integration of citizens into the political process. Based on this online-system we examined practices and contexts of users (i.e. citizens submitting petitions) and analyzed available preliminary studies. Thereby we detected support areas and use practices which would remain hidden in an idealized view of a petition process and should be considered when further developing general systems for organizing the civil society (Societyware). It also becomes apparent that the introduction and usage of innovative participation formats and technologies lead to a change in established political processes.

1 Introduction

The term ‘Societyware’ describes a group of applications and information systems whose role in organizing the processes of civil society and the democratic system justifies public interest (Grimm et al. 2008). Questions about the reliability, confidentiality, transparency and legal security of such systems are often discussed (e.g. regarding voting machines, Richter et al. 2010), as well as questions about access and fairness, for example regarding the support of participation processes for land-use planning (Märker 2005).
The development of such systems is frequently initiated by governmental organizations to pursue relevant interests, such as cost saving during elections or improving the effectiveness of participation processes. Thus the system development itself is based on assumptions made by the staff of those organizations. These assumptions do not necessarily have to be impractical; but it is this public interest which requires the assumptions to be empirically tested. Design and further development of societyware demand development approaches which particularly provide for an equal contribution of user perspectives and creativity on one side as well as development expertise and creativity on the other (e.g. ’Infrastructuring’, cf. Pipek and Wulf 2009).

In this contribution we focus on online petitioning systems and, with the aid of secondary analyses, usage data from a pilot project of the German parliament and an additional qualitative study with petitioners, try to figure out which aspects of ‘work’ regarding the creation and management of petitions from the user perspective deserve special attention.

2 Formats and channels of participation

In what follows we will present an overview on formats of participation and brief examples on participation channels which have increasingly emerged in recent years (Cantijoch & Gibson 2011). According to a study by Albrecht et al. (2008) there are five essential types of political participation:

1. Information/Transparency refers to providing information on political activities. Examples: Information websites of political institutions, Angela Merkel – Die Kanzlerin direkt1, Abgeordnetenwatch2.
2. Consultations aim to obtain opinions or expertise from citizens, NGOs or business experts in order to derive decisions or assessments from it. Example: Public discussions about the budgeting in Bonn „Bonn packt’s an“3
3. Petition is a form of participation for making suggestions or complaints to responsible authorities. Example: E-petitioning system of the German parliament4
4. Activism/Lobbying is a format where individuals or organizations take actions to look for support for their interests or positions. Example: Initiative ‘minimum wage’5
5. Voting allows individuals or organizations to choose from a selection of persons, suggestions, etc. Examples: internet votings (e.g. web polls), support of elections (Kalchgruber & Weippl, 2009) under secure conditions (Hassan & Zhang 2013)
3 E-Petition as an example for societyware

3.1 Petition process of the German parliament

In the following section we will describe the petition process (effective until October 2008) of the German parliament. Generally there are two different kinds of petitions: first, the traditional, non-public petition (n-pp) and second, the public petition (pp).

A traditional petition can be submitted in three different ways: (1) by post; (2) by post using a Word-template which can be downloaded from the petition site of the parliament; (3) by using an input form on the petition site (online petition). Public petitions can only be submitted via the internet; however, not through the input form mentioned above but through a Microsoft Word-form which has to be completed and sent as attachment of an e-mail.

In order to clarify the submitting and processing procedures, they will be described by reference to a pp and n-pp. Concerning the management’s perspective only those processes will be depicted which have direct influence on the citizens.

3.1.1 The citizens’ perspective

For the purpose of submitting a pp, a Word-form is available on the petition website of the parliament. After completing it, the petition can be sent to the parliament via e-mail. The n-pp is sent to the petition committee by post. After the expiry of the review period the petitioner is informed about the approval by post. If the pp is approved, it will be published on the petition website. With the publication a six-week phase for co-signatures and discussions begins. For n-pps this step is skipped. Forpps it can happen that revisions are necessary so that the petitioner will be consulted. If the approval of a petition is rejected because, for instance, the parliament is not responsible, the petitioner will have the option to raise objection in writing within six weeks. When the notification phase has ended, the pp is forwarded to the parliamentary review; the n-pp is forwarded immediately. The petitioner is informed by post. In this review phase it can happen that the petitioner of a pp will be consulted in a public committee meeting. This is especially the case when a petition obtains more than 50,000 signees in the first three weeks. After the parliament has decided over the petition, the petitioner is informed on the decision by post. Simultaneously the statement of reasons for the decision on a pp is published on the petition site.
3.1.2 The management’s perspective

As soon as a pp (via e-mail) or an n-pp (online form or post) arrives the petition committee office (PET), it is reviewed with regard to responsibility, general approval and reference to a main petition. It will also be checked whether a pp is considered to be a pp or normal petition. If it is not a pp, the petitioner will be informed in writing. If it gets the approval, the petition will be published on the petition website and the 6-week phase for co-signatures and discussions begins. In this phase of a pp the discussion forums are moderated and the signatures are controlled by the PET. At the same time the PET receives requests by citizens and petitioners. After this, the parliamentary review is initiated. The review process for n-pps is rather simple: positive notifications for a positive feedback by the respective ministries or negative notifications for petitions with no prospect of success. The petitioner is informed in writing. In the review process of pps the signatures will be evaluated, however not the discussions. After the ministries have given their statements, the respective petitions are again evaluated, this time by rapporteurs of the petition committee. It is common practice that the discussion forums are included into the evaluation the more important and popular a pp is. If they give their approval, the petitions are either bundled or individually voted on. Pps or petitions with more than 50,000 signatures are always individually voted on. The petitioners of pps can be invited to a public committee meeting.

4 Empirical study

The study of the German parliament’s petitioning system was conducted in the period from October 2006 to July 2007. The study comprises the analysis of preliminary studies on the system and, based on these, the analysis of the application context from both the citizens’ and the management’s perspective. For the analysis of the use context and usability of the petitioning system from the citizens’ perspective we carried out scene-based walkthroughs and semi-structured interviews. Following three subjects were available:

• Subject I (SI): Experienced in computers and pps
• Subject II (SII): Experienced in computers and not experienced in petitions
• Subject III (SIII): Not experienced in computers and experienced in traditional petitions

On the management’s side we analyzed the use context of two employees of the PET who are responsible for the administration of petitions. For the analysis we focused on the areas: tasks and activities of the subject, IT-support for task processing, information handling, division of tasks and work process.
4.1 Results

4.1.1 Secondary analysis
Previous to the user-centric analysis of the petitioning system we took a secondary analysis of two studies (E-petitioner: A Monitoring and Evaluation Report, 2001; e-Petitioning in Kingston and Bristol – Evaluation of e-Petitioning in the Local e-Democracy National Project, 2005) by the Napier University (Edinburgh) into account. Both studies analyzed the E-Petitioner – the petitioning system in Scotland. The German parliament adopted this system.

The essential results of both studies were:
1. Citizens in remote areas can better participate in politics.
2. The exchange between citizens in regard to a certain petition through related discussion forums was perceived to be very useful.
3. Apart from the online support, the same support should be available offline.
4. Promotion, marketing and public relation activities are central instruments to increase the importance and visibility of petitions.
5. Personal data are entered only very hesitantly.
6. It can be difficult to obtain signees because it is hardly possible to collect signatures on the streets.

4.1.2 Motivations for submitting a petition
SI sees the potential of petitions to address a problem relevant to the entire society. In fact the subject is politically active, but to address the matter through a political party or the Constitutional Court would take too long. For him it is particularly important that as many citizens as possible hear about the petition and sign it, because like this a great pressure can be exerted on the legislator.

The petitions from SIII resulted from an individual case in the area of start-up support. Since there was no money for an attorney, a petition was identified as alternative. That is why SIII submitted an n-pp. Pps had not yet been introduced at the time of his/her first petition (1995). The petition was submitted to the petition committee in order to, on the one hand, increase the pressure on the decision-makers (employment agencies, mayor), and, on the other hand, address the political level which has the power to change laws. The petitions were also forwarded to the mayor, employment agencies and district to underline its significance and urgency.

4.1.3 Work practices of the subjects
For the analysis of the subjects’ work practices we divided them into three main activities: searching for information on the petition topic and petitions, creating petitions, and submitting petitions. SI+II first tried to seek general information on petitions through Wikipedia and afterwards obtained detailed information on the submitting process, deadlines, standards, etc. from the petition site. Additionally the internet was used to get information on the petition topic (e.g. laws, opinions, similar petitions, etc.). SI+III spent 3-7 days for creating the petitions in collaboration with their life partners. SII prefers to write a petition jointly with others because “political topics are too complex”. In this case the joint writing process, creation of to-do-lists and coordination work has priority. During the phase of collecting co-signatures SI actively participated in discussions and, in doing so, made contacts also beyond the forum. Furthermore the petitioner was even phoned at home by affected citizens after they had found out the number though his/her name. The promotion of the petitions was important to all three subjects. PI did not see any need to make further marketing efforts because the petition had been well received on the petition site. PII believes that social networks are suitable for promoting petitions.

4.1.4 Technical support for citizens

SI+II used applications for almost the entire petition process, whereas SIII did not use a computer. Petitions were written in MS Word (SI) or would have been written in Word (SII). SII stated that he/she would use a Wiki-system to jointly write a petition. SI+II used the internet browser to obtain information on the petition topic and petitions in general. SI sent the Word-document with MS Outlook. Since SI received calls from other citizens affected by the topic, the telephone infrastructure was used, too. The n-pp (SIII) was handwritten and was sent to the petition committee, the mayor, the district, and employee agencies by post.

4.1.5 Log File analysis

In the period from 10/1/2005 to 02/28/2007 the petition site was viewed by 1,320,001 persons; 8,625,394 page views and 50,722,873 hits were counted. These numbers show that this form of participation has been highly accepted from the start. The analysis of the individual page views shows that the notification site and the co-signature site were viewed much more frequently than the discussion forum or the postcard. Furthermore it can be noticed that many page viewers come from websites of associations which are active in the petition’s topic. (e.g. Attac.de, Heise.de or Arbeitslosenselbsthilfe.org) (Riehm, Coenen, & Lindner, 2009).
5  Integrated support of societyware

In the following section we present areas of support which we derived from the preliminary and empirical studies.

5.1  Supporting the collaborative creation of petitions

Petitions are normally created in a collaborative process. Hence, E-participation systems should support essential collaboration practices. These practices comprise: (1) discussions on the elaboration of the petition topic; here forums and blogs were perceived to be useful by the subjects; (2) the joint organization of the tasks (to-do-lists, coordination of responsibilities) as well as (3) the shared processing of the petition document, e.g. through Wiki systems. The empirical study and the preliminary studies show the necessity for supporting both local and distributed collaboration. Internet-based platforms are useful to better integrate people with physical disabilities or in remote locations. We further suggest an improved integration of the statements of reasons for rejected petitions because they significantly contribute to future petitions. Currently these statements are sent by post to the main petitioner and are not available in digital form. This makes the forwarding to other petition authors more difficult.

5.2  Supporting the promotion of petitions

The promotion of pps is an important and central task. The studies show that this task is not sufficiently supported in the petitioning system. Several requirements could be revealed. First, the connection to external initiatives or networks: the publication of petitions on Facebook or Twitter can reach a high number of network members. Second, the connection to other political platforms, associations, or action groups: here again there should be possibilities to publish petitions on these websites. Third, the study mentioned the difficulties in obtaining signees on the streets. This leads to the requirement of establishing such processes as well, so that it is possible to win supporters in the offline world.

5.3  Supporting the evaluation of discussion forums

The option to discuss about a petition was perceived to be very useful not only by the subjects of all studies. In fact, discussions become confusing especially for important petitions, so that potential signees have difficulties to understand the arguments. But also the parliamentarians and employees of the ministries identify
discussion forums as a potential source for capturing opinions and further information on the topics directly from the citizens. Currently discussions are analyzed by rapporteurs; however, this process is extremely laborious because of missing evaluation support, so that it is only done in exceptional cases. Analysis and evaluation functions are necessary to fully integrate the discussions into the evaluation and decision-making process. At this, the transparency of the evaluation process is particularly important: The results must be made available to all relevant persons; it must be clear which processes of the institutions have to be informed; and the process, which defines the analysis criteria, could be democratized and technically supported.

5.4 Supporting persons with linguistic, physical, or geographic disadvantages

The studies revealed deficits in the support of linguistically, physically, and geographically disadvantaged persons. Language support is important for two areas. First, suitable language on the level of the user interfaces: This includes the support of different languages as well as avoiding expert vocabulary. Second, writing assistances, templates, or spelling and grammar checks could help persons who have difficulties with the German language (e.g. foreigners). Furthermore it must be ensured that people in remote areas have comprehensive access to the internet. The support of persons with physical disabilities (especially blindness) has to be increased in the core processes (seeking information, discussion, creating petitions and promotion) with the aid of more efficient voice control and output functions.

However, we want to make clear that these requirements and support suggestions are not merely limited to online petitioning systems. They also have to be made available to people who do not have a computer or are not experienced in using one. For instance, local city offices could be included into these tasks to a greater extent.

5.5 Supporting an integrated petition process

Apart from the support areas mentioned above, it is important to consider the entire petitioning process for the design of appropriate systems. The current system supports the submission, publication, co-signing and discussion of petitions. What is missing are the areas of seeking information, joint elaboration and promotion. Moreover, there are another four sub-processes which have to be considered as well. Feedback and revision processes are not supported by the system. The assistance for the revision of the petition text should be related to the
comments given by the PET. In addition, the studies showed that there is a two-sided interest between the petitioners and the parliamentarians: It is important to the petitioners to gain the support of members of the petition committee and the parliament at an early stage. On the other side parliamentarians are interested in identifying petitions which could be relevant to their work. Generally one has to be aware of the fact that the different participation categories (e.g. by Albrecht et al.) are indeed analytically comprehensible, but should not be considered as strictly divided when studying political work (understood as real actions) in reference to its technical support. From the citizens’ perspective it is rather unimportant in what way they reach their goal (enforcing an idea). Petitions are the most direct link to the participation bureaucracy, but there should also be transitions to other forms of participation.

6 Summary

The public interest in societyware requires that, above all, the interests and work practices of citizens are considered in the design and development of such applications. Based on secondary analyses, log file analyses and an empirical study, we derived support potentials for work practices of petitioners in order to develop online petitioning systems in accordance with the needs of citizens. Furthermore, our studies show that a variety of IT tools and forms of participation are merging into a ‘democracy infrastructure’, whose development processes should be guided by methods which treat and support both developers and users on an equal level (e.g. Infrastructuring by Pipek and Wulf 2009).

Literature


Explaining deliberativeness. The design of readers’ comments.

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Abstract. Great expectations on a vibrant digital public sphere have been articulated since the deliberative turn of democratic theory met the interactive and participatory potential of digital media. Readers’ comments on professional online-news sites provide the chance for deliberation in a visible online environment. This case study discusses the explanatory potential of structural design features for the quality of online-deliberation via readers’ comments. Therefore, this study applies a quantitative content analysis design, which shows limited deliberative potential of a fully analysed debate on a German news site. The findings suggest that structural design features offer useful hints to understand the character of debate that takes place.

Keywords. Deliberation, public sphere, design-features, readers’ comments

Introduction

Deliberation „that no force except that of the better argument is exercised; and that, as a result, all motives except the cooperative search for truth are excluded” [1] is highly en vogue [2, 3]. Since the “deliberative turn” [4] of political theory has met the interactive potential of digital media the development of numerous “third spaces” [6] reinforces the chance for interaction and deliberation in societal (mass media) discourse [7]. Though different case studies produce optimistic
results proving deliberative potential, literature remains sceptical about the impact and the quality of online-deliberation [5, 8, 9]. One way to engage people in digital public discourse is represented by readers’ comments. Readers’ comments embody an important gateway for civic engagement via public debate and supporting the democratic process in two ways. First, most of Social Media occurrences do not appeal to a huge audience permanently. Readers’ comments are attached to articles on online news-websites what leads to higher visibility of the contributions than on most independent forums [10]. This gains particular importance because the high amount of digital voices tends to fragment public attention [7]. Moreover news-consumption and self-expression become more instrumental and interactive activities with a wider online-audience [11]. Second, immediate and largely uncensored character of readers’ comments copes quite well with current demands for non-hierarchical, informal ways to participate. [3, 10, 12]. Research on readers’ comments is in the beginning. Different case studies present different results [10, 13, 27, 28, 29, 30, 31, 37]. Further theoretical and empirical research is needed [13]. Therefore this paper applies an explorative case study. It discusses structural design features of online-deliberation and their potential impact on deliberative quality. It also clarifies structural design features of readers’ comments and arranges a quantitative content analysis based on operationalized deliberative criteria. Hence this study asks for the explanatory potential of structural design features for the deliberative capacity of readers’ comments -debates.

Design of online-deliberation

Design of digital discussion spaces has remarkable influence on the character of debates that take place [6]. Literature has shown the deliberative potential of digital discourse by setting up experimental designs [14, 15]. Davies and Chandler [16] go even further by evaluating the impact of diverse design criteria to facilitate online-deliberation. This leads to the assumption that the design of online-deliberation may help to explain or even to predict the kind of debate that takes place. The design of online-deliberation is determined by technical and organizational features [17]. A central technical feature is constituted by the temporality of the discussion whether it is operated synchronous or asynchronous. Recent research emphasizes that asynchronous deliberation fosters participation and bears higher potential for reflection, which results in longer contributions. Synchronous dialogue in contrast is suited for enabling interaction and mutual understanding [16, 18]. Openness and publicity of online-deliberation is central for the plurality of debate. General openness is important because online-discourse tends to homophily. But respective case studies suggest at least that apparent contradictory positions are not ignored [19, 20]. It matters if dialogue is structured strictly or not. The presence or absence of a moderator has remarkable influence on the character of discussion [21, 22, 23]. The general freedom of expression and
agenda setting represent two additional possibilities of structuring digital dialogue [17]. Stricter structure of online-deliberation increases the quality of deliberation through fostering rationality and interaction but decreases participation. Reversely less structure boosts participation especially because quality of deliberation does not seem to influence levels of participation strongly [16, 20, 21]. The identification or anonymity of users is also mentioned as a central criterion with regard to the quality of discussion. It is shown that anonymity lifts participation as well as heterogeneity of debate but decreases responsibility. That affects the quality of debate negatively. Hence, anonymous deliberation tends to produce the better results [17, 18, 21, 24]. It is often implied that online-discussion is operated text-based because most online-communication is text-based [15]. This is important. The reduction of communication on text-exchange could lead to an efficient way of communicating what is characterized by its briefness and preciseness [25]. Moreover, studies argue that people find it more favorable to discuss delicate topics through text exchange than face-to-face. Others emphasize that the leaner and impersonal character of text-based communication could lead to misinterpretations and encourages uncivil discourse [26]. This set of variables is of course not-exhaustive but mentioning the detailed discussion of design criteria by Davies and Chandler [16] it seems that the most important aspects are included.

Readers’ comments could be considered as an interactive platform for expressing points of view in the very visible environment of online news sites. They relate spatial to a journalistic article enabling the readers to publish their opinion in a linear chronology directly attached to an article [10, 27]. It is said that that readers’ comments offer a lot of space for contributions including minor censorship, a lack of moderation and anonymous posting. Even if it is possible to presume identification of users or to foster a registration including additional information like a cell number, discussants register overwhelmingly anonymously through using nicknames if possible [10, 28]. Moreover, the topic of the debate is generally set by the journalistic article but people could also discuss off-topic [29]. Studies of readers’ comments often do not elaborate that discussion is operated text-based and asynchronous which represents important features guiding the discussion as discussed above. Taking these characteristics into account this study will be able to discuss the structural design features who might explain the character of debate made visible through content analysis in the end.

**Methodology and data**

The debate analyzed here was held on the webpage of the only daily newspaper in the German city of Kiel (Kn-online.de). Citizens participated in a discussion about the renaming of the local boardwalk called “Hindenburgdamm”. This highly polarizing debate between deputies of the renaming-plan and a movement which aimed to retain the old name was chosen for analysis, because it bears a hard test of deliberative potential. Seven articles dealing with that topic were published on kn-online.de between January 19 in 2013 and January 16 in 2014 and offered
space for discussion via readers’ comments. Full discussion was coded and included totally 205 (=n) comments. Altogether the readers’ comments on kn-online.de correspond to the description above with one exception. Different to most comment-functions, the linear chronology connected to the article is combined with a web-forum structure. Functional conditions of contributing a comment remain quite similar, what seems to be consequential because readers’ comments represent as Domingo [30] puts it “micro-forums attached to news”. Corresponding research suggests that this joined structure strengthens deliberative quality with regard to politeness and interactivity [31] which has to be taken into consideration in the analysis of the findings. Registration by E-Mail is fostered but not necessary. Participants used nicknames and secured anonymity in this way. Active moderation was not apparent. Censorship was very slightly operated. The system makes transparent if a comment was revised by the editors of the webpage, which happened only in one case. It was not clear if comments were completely deleted and, if they were, to what extent. All in all the “shadow of control” [22] was not very visible.

It was chosen to operationalize deliberation in two steps. This study applies central categories of the Discourse Quality Index: Level of Justification, Respect for groups and Respect for counterarguments and Interactivity. This quantitative content analysis design posed a valid method for analysing deliberation in various contexts [32, 33]. DQI categories proofed applicable for online-deliberation [8, 17] and were recently adopted for analysis of readers’ comments [10]. Jürgen Habermas himself mentioned the DQI positively [34]. Though application of DQI produced sophisticating results in intercoder-reliability [32, 33] objectivity of the categories remains the central point of criticism [35]. Because of that this study looks also on some harder categories as this has proven to be a fruitful procedure by various studies [17]. It counts the number of: off topic comments [29], quotations and one-time-participants [17]. The frequency of participation was coded as well as its volume. Moreover, participation of disagreeing parties was binary coded showing heterogeneity of the debate [19].

Results and discussion

The results contain some evidence for the explanatory potential of structural design features. Results for the level of justification come along very ambivalently. The clear majority of comments dealt with the topic of the discussion (83%). But it was still a relevant amount of contributions ignoring the topic of debate. The clearly most awarded DQI-code was inferior justification

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1 Categories, coding instructions and the codebook are elaborated in a number of publications by the team around André Bächtiger [32, 33, 36]. The traditional DQI measures also the content of justification and a category they call constructive politics. These categories are not applied in this study as their validity is questionable according to new developments in deliberative theory [36] and they have no outstanding importance for the research question.

2 Tabular results are available as an online-appendix from the author. Data rounded.
(58%). It was coded with respect to the special characteristics of text-based asynchronous communication as elaborated above. Even some shorter contributions were coded as qualified or sophisticated and may qualify indeed as efficient communication. Majority could not offer a complete argument. This ambivalence affirms results of previous studies [10, 13, 29]. 19 per cent of the contributions did not include any argument. It could be resumed that people focus on the argument as the main instrument for persuasion but that they often fail to make their point. This ambivalence could be traced back to the ambivalence of structural design. The lack of structure and the anonymity of the participants represent indicators for a lower rationality of debate. In contrast the text-based asynchronous communication influences argumentative quality positively. At this point results may lead to the assumption that the lack of structure limits the potential of this kind of communication to produce precise arguments. This is supported by the recognition that a big amount of contributions had shortened length (43%). The idea that the lack of structure may lead to irresponsible behavior proved rather true. The amount of explicit statements of dis-respect is very high (38%). Balanced or explicit respect is nearly absent. Indeed, a majority did not express explicit disrespect and fulfilled this basic precondition of deliberative dialogue. This observation matches also with related studies. Ruiz et al. [13] show that moderation could produce satisfying results here which leads us to the converse argument. The lack of active moderation could be seen as an indicator for unsatisfying results in the category of respect. Due to the complexity of human communication, censorship might help to provide hate speech but is not able to produce respectful cooperation. Contributions could be easily offensive without being obscene [13, 37]. The measure of interaction presented interesting results. At first it has to be stated that only a minority behaved interactive in a decided deliberative way. 33% included counter-arguments of other participants, largely in negative manner, which supports the findings from the category respect. The weakness of asynchronous dialogue in producing mutual understanding offers an additional explanation, which suits these findings quite well. With regard to the ongoing character of discussion a majority of contributors were one-timers. That is similar to other studies [37, 38]. At this point it has to be stated that interaction is far from being absent. Including the fact that citation was frequently used (44%), a relevant amount of interaction is present. Looking at the inclusiveness and heterogeneity of debate helps us to classify regarded levels of interaction. We have a stable majority (66%) of like-minded people arguing against a renaming. Insufficient diversity of opinion may avoid intensive dialogue. But a slight overweight for one point of view seems expectable and does not qualify the debate to be homogenous [13]. Only a very small amount (12%) of contributions had overlength, which supports this argument. However, results appear ambivalent in comparison to other studies. Frequent use of citation indicates that design features enabling interaction are adopted [29]. But more qualified analysis shows limited potential for interaction that is merely competitive. That affirms results of some other studies [10, 13, 27]. Especially the competitive character of interaction may show heterogeneous nature of debate but is problematic from a deliberative point of view [10]. There are some users considerably more active than others. It seems that a larger minority impresses the debate. In a nutshell readers’ comments provide some potential for interaction but it seems compelling
that lack of structure may boost heterogeneity but hinders decided deliberative interaction. Even if we recognize that heterogeneity is far from being perfect, the debates analyzed did not follow the Web 2.0-trend of homophily.

Conclusions

This study offers some suitable explanations for the deliberative quality of debates via readers’ comments. This indicates that the design of online deliberation is influential and might be suited to predict general direction of deliberativeness. This is important as it helps to come to appropriate expectations about the usability of specific platforms for online-deliberation. Furthermore, it could help structuring the vast heterogeneity of those. But it has to be constrained that information provided by the design of readers’ comments is more a tendency than an ultimate statement. Moreover, it has to be acknowledged that the scope of this study is limited and should be seen as a small contribution to an explanatory starting point. Larger comparable studies will be able to light up the effects of design in detail. Comparison of different platforms for readers’ comments shows different outcomes already [13]. In our case, it is still possible that other factors played their role in influencing the quality of debate. This could only be suspended in a comparable design. Additionally it is not clear how the design features interact. To conclude about the democratic potential of readers’ comments, this study adds its small piece of evidence to the literature giving support to some findings. Readers’ comments offer a possibility for rational argument about what is not fully utilized until now. Especially mutual, respectful interaction seems difficult under current circumstances. In sum, readers’ comments analyzed do not demonstrate high deliberative quality. But, we should not be too pessimistic as Wright [6] suggests. Maybe the deliberative ideal creates undue expectations.

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An experimental approach to explore discourse architectures

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Abstract. This work examines existing research on the design of discussion places and demonstrates how design can be used to support certain approaches of participation. We link these efforts to the concepts of discourse architectures and democratic innovations and furthermore, examine how we could experimentally approach the study on these.

Introduction

The design of the discussion system has been observed to effect how participants engage with the discussions. Sukumaran et al (2011) have examined how the site layout and appearance impact the comments people assume seeing on the site. They observe that people expect to see more serious comments on sites that look more professional and suggest that this is related to the experienced norms on the site. On the other hand, in computer-supported collaboration effort has been put into developing new systems, which engage participants in thoughtful discussion. The CONSIDER IT (Kriplean et al, 2012a) and REFLECT (Kriplean et al, 2012b) propose new processes supported with the design. Their experience on both of these systems are positive, participants are engaging more with these processes. Lastly, Stanfill (2014) examine how media companies use different interfaces to create norms of participation.
This research has been scattered to different domains, from classical human computer interaction and computer-supported collaboration to new media research. This phenomenon has also been acknowledged in political science, they refer to them as *discourse architectures*. Discourse architectures are set of technical affordances (or limitations) guiding participants towards certain behaviors (Freelon, 2013). I furthermore highlight how understanding these discourse architectures are critical part of *democratic innovations*, the institutional designs used to involve citizens in democratic decision making (Smith, 2009). These approaches aim to engage citizens in mini public (Himmelroos and Christensen, 2014), online petitions (Wright, 2012) and social media (Ellison and Hardey, 2013).

The democratic innovations aim to engage citizens, and creating environments where participants can take part easier and the system would support thoughtful commenting and dialogue. Using the notation of discourse architectures developers should examine how they can increase the accessibility on the site, and furthermore explore how thoughtfulness could be increased.

### Designing thoughtfulness

There is a possibility to improve (online) democratic innovations based on evidence-based approaches: i.e. justify the certain design practices by exploring the options in (quasi) experimental settings. Quasi-experimental methods are used to explore and justify policy choices (Stoker, 2010; Druckman et al, 2006), but also in human computer interaction to study the differences between systems. The quasi-experimentation allows certain level of natural settings, which increases the external validity of findings (Oulasvirta, 2012). As highlighted, there is an emerging interest in online deliberation systems (Kriplean et al, 2012a,b), however these work have not (yet) applied quasi- experimentation.

My current work explores discourse architectures especially educational domain. Even while surprising, this domain has major benefit of easy to organize cases for study. Furthermore, modern education paradigms highlight the need for considered dialogue and collaboration when making these decisions, therefore not that far away from the ideals of democratic decision-making.

Examples of potential changes in the discourse architecture level include

- threaded conversation interfaces
- message length and turn taking
- feedback structures, such as gamification
To evaluate these innovations, I’ll adapt the evaluation framework for democratic innovations (Smith, 2009), but extend with elements on participants’ experience (Baek et al, 2011). I’m therefore interested in the level of participants’ engagement, the quality of the discussion (c.f. Steenbergen et al, 2003) and the experience of participants; and explore how the environment impacts the use.

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Preliminary investigation of a tool for collaborative auditing of public policy argumentation

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Abstract. The very early development stages of a collaborative argumentations system entitled Pacisco is described. At this point particular emphasis is on the interface and interaction design of the analytic functionality. Three examples of open-access collaborative argumentation systems currently available on the Web are examined briefly to provide a context for the development of a new system. The approach of Pacisco is differentiated from its predecessors as encouraging detailed comprehension and auditing of debate rather than establishing outright victory for one position. The argumentation schema employed is based on that described by Stephen Toulmin in 'The Uses of Argument' (1958), but modified to enable chains of reasoning to be captured. To provide a context for development of the prototype, four fundamental requirements are identified; integrate well with other web systems, allow only anonymous contribution, be intrinsically secure, be transparent. How these requirements should be represented in the design is indicated. The proposed development process is described briefly.

Introduction

Effective collaborative argumentation in the sphere of public policy debate is a tantalizing possibility offered by the World Wide Web as an enabler of vigorous participatory democracy. Effort is underway to bring this about, e.g. the work on a ‘World Wide Argument Web’ (Rahwana 2007).
The project described here with the working title 'Pacisco' is intended to explore human interaction and interface design issues in computer supported collaborative argument analysis; in particular making the auditing of public policy debates accessible to the untrained but interested user. The vision is for a web based forum in which detailed auditing of argument pro and contra public policy can be engaged with by all stakeholders (citizens, experts, government, lobby groups, etc.) on an equal footing. That is, to become informed as to the current status of any controversy and to intervene by posting their own arguments in support or opposition to established positions. Wikipedia is a good model for this endeavor. The success of such a system hinges on the ability of untrained people to analyze and construct argument in a relatively formal way. An initial prototype has been constructed that will be evolved through trial with volunteer testers to identify and provide effective support (appropriate interface design, help text, tutorials and/or augmented grammar checking). This should demonstrate either that adequate performance is possible or give a strong indication that it is not. The bar for this challenge has been set by the experimentation of Adelman et al. Using a Toulmin based argumentation system with 22 users over a six week period produced mixed results on improving analysis and understanding of the Toulmin formalism, but strong indication of perceived difficulty in generation (Adelman et al. 2007).

There have been a number of attempts to create comparable systems on the web, currently exemplified by Debatabase (IDEA) hosting expert curated debates that anyone can contribute to in the manner of Wikipedia, and Riyarchy (Riyarchy Inc.), described as a collaborative argument tree to which anyone can contribute. Of the two, Debatabase appears to be the most active with a substantial number of live debates. Riyarchy on the other hand appears only to hold ‘demonstration’ debates. The company behind it has commercial aspirations for its sibling product, DebateWithMe (Riyarchy Inc.). We will examine here only their analytic functionality (i.e. the initiation of and contribution to debates) but not their evaluative functionality (i.e. establishing the relative merit of the arguments made). At this stage of Pacisco’s development, consideration of its evaluative functionality is deferred until the plausibility of its analytic functionality has been demonstrated.

Both of these systems are largely text based, though using graphical layout devices to make argument structure apparent. In Debatabase arguments are initiated as debating motions (“This house would …”); a short paragraph of free text, heading up a list of subsidiary points at issue expressed as succinct single sentences. Each point at issue contains two bodies of unstructured text; the ‘point’ or ‘counterpoint’ that protagonists are invited to improve, subject to ‘curation’ by an expert.

In Riyarchy the starting point is a topic expressed as a title, e.g. “Same-Sex Marriage”. This is followed by elements labeled ‘pro’ and ‘anti’ consisting of
titles followed by unstructured bodies of text ending with links to ‘refutations’, the whole thing organized as a hypertext tree.

These contrast markedly with the ‘classic’ collaborative argumentation approach of Issue-Based Information System (IBIS) (Werner and Rittel, 1970) currently exemplified on the web by bCisive (Critical Thinking Skills BV). Here a diagrammatic notation is used to capture relations between predefined types of information (e.g. situation, question, option, reason, objection, evidence, etc.). Additionally the intention of IBIS inspired systems is for synthesis; the combining of ideas to produce a successful outcome, while that of Debatabase and Ryarchy is analytical combat; the definitive defeat of alternatives leaving one position triumphant.

Pacisco aims for the middle ground, on two counts. Firstly the representation of argument is more finely structured than the combative examples but less so than the IBIS inspired. Secondly Pacisco does not attempt to settle an argument as a zero-sum game; that is for the mind of the hearer after engaging with the debate, and even then perhaps only when forced to make a decision (vote, etc.). Instead it intends to enable comprehension and auditing of debate, i.e. confirming that there are no obvious lacunae in the structure of the argument, e.g. unsubstantiated assertions, tautologies, errors of fact or logic, etc.

**Pacisco**

The argument structure employed in Pacisco is essentially that described by Stephen Toulmin (2003). It has been extended somewhat to allow chains of reasoning to be captured; essentially the Toulmin structure has been made recursive with each of the elements: grounds, warrant, backing and rebuttal, being treated as claims with their own potential supporting or rebutting arguments.

The Toulmin schema has been chosen as it appears to offer an intuitively understandable way of identifying the parts of an argument and their function. Originally developed from analysis of forensic argumentation it is essentially practical.

Toulmin described his schema succinctly in the famous diagram (Fig. 1).
Fig. 1 Adapted from Toulmin (2003 p.97) ‘G’ replaces the original ‘D’ for datum.
Here ‘G’ is the grounds on which the claim ‘C’ is based, justified by warrant ‘W’ with backing ‘B’. The warrant’s strength of application to this case is qualification ‘Q’, with exceptions rebuttal ‘R’.
In Pacisco the claim, grounds, warrant and qualifier are explicitly named. An additional entity is introduced: the case. This acts as a container for grounds and warrant and is assigned as intending to affirm or rebut its associated claim. Toulmin's backing and rebuttal are implicitly the recursive cases associated with the grounds and warrant claims.
A claim is required to be an atomic proposition; i.e., a statement capable of immediate interpretation as bearing a truth value. Atomic propositions are expressed as declarative sentences, as defined by Hodges (1977 p.19).

“… a grammatical English sentence which can be put in place of ‘x’ in
Is it true that x?
So as to yield a grammatical English question.”

Grounds and warrants can be compound propositions, composed of atomic propositions joined by logical connectives (initially: negation, conjunction, disjunction, exclusive disjunction, implication and strict implication) together with a 'hypothetic' operator to indicate ambivalence as to the truth-value (both the necessity for, and naming of particular connectives will be part of the investigation).
Toulmin’s ‘backing’ and ‘rebuttal’ elements are not explicitly represented in the Pacisco structure. Instead, all atomic propositions utilized in grounds and warrants are themselves regarded as claims to be supported or rebutted in their own arguments.
As the argumentation structure is essentially recursive it requires termination. This is supplied by allowing cases associated with a claim to be declared ‘self-evidently true’, ‘self-evidently false’ or to contain a reference to an external resource by which data is introduced into the argument. The diagram in Fig. 2, utilizing elements of the UML static structure notation summarizes the structure.
Other liberties taken with the Toulmin model are that an argument can have multiple cases (grounds, warrant and qualifier tuples) and a case may have multiple warrant and qualifier combinations.
Think you know the facts about nuclear power? Not sure? Here's the low-down on the key issues.

Some people argue nuclear power is a solution to climate change. Here are 5 facts that show it's a gamble we don’t need to take.

Fact 1: We don’t need more nuclear reactors
- The Government’s own model shows we can keep the lights on and tackle climate change without nuclear.
- A major independent study shows we can produce 100% of the energy we need from renewable sources.

Fact 2: Nuclear energy is expensive
- Lots of subsidies
  - Billions of pounds have been poured into nuclear power.
- Hidden costs
  - For storing toxic waste and closing down old power plants.
- Very hidden costs
  - In 2010 the tax payer was left with a £4bn bill to shut down old plants.

This extract may be rendered into the Pacisco structure as follows.

Argument 1:
Claim: Nuclear power is a solution to climate change.
Rebutting case 1.1:
  Grounds: NOT We need more nuclear reactors.
  Warrant: If something is not needed then it is not part of a solution.
  Qualifier: Always
Rebutting case 1.2:
  Grounds: Nuclear energy is expensive.
  Warrant: The cost of a possible solution to a problem should be taken into account when judging its suitability.
  Qualifier: Usually

Argument 1 illustrates multiple cases. Depending on the evaluative function they may be thought of as being in a disjunctive relationship, the strength of the argument being that of the strongest case. Alternatively the naïve notion of a claim being strengthened by multiplicity of cases may be acknowledged.

The grounds of rebutting case 1.1 are expressed as a negated positive version of the source statement to facilitate similar claims being recognised and linked in subsequent arguments. With appropriate natural language processing capabilities this requirement could be relaxed.

The warrants in both cases 1.1 and 1.2, as is usually the case in informal argument, are not stated explicitly in the source. For Toulmin “… statements of warrants … are hypothetical, bridgelike statements.” (Toulmin 2003, p. 98)

Whilst the force of an argument depends on the strength of its warrant, it is surprising how tacit this aspect is in normal discourse and considerable cognitive effort is often required to explicate it. Doing so may make it controversial.
Argument 2:
  Claim: We need more nuclear reactors.
  Rebutting case 2.1:
    Grounds: The Government's own model shows we can keep the lights on without nuclear.
    AND The Government's own model shows we can tackle climate change without nuclear.
    Warrant: Government models are reliable. AND Governments should act consistently.
    Qualifier: Always

The claim of argument 2 has been generated from the grounds of case 1.1. The form of its grounds in turn, where the single source statement has been rendered as two distinct propositions in conjunction, has been chosen to make explicit the independence of the informally elided constituents. These become claims in subsequent arguments. The controversial nature of the expressed warrant is immediately apparent.

Argument 3:
  Claim: If something is not needed then it is not part of a solution.
  Case: Self-evidently true

The claim of argument 3 is the warrant of case 1.1. It illustrates the terminating case. However it is still open for protagonists to further substantiate or rebut it.

Argument 4:
  Claim: Nuclear energy is expensive.
  Affirming case 4.1:
    ...
  Affirming case 4.2:
    Grounds: There are hidden costs for storing toxic waste. OR There are hidden costs for closing down old power plants.
    Warrant: Where costs are hidden something may be much more expensive than it appears.
    Qualifier: Usually

The rendering of the grounds of case 4.2 might at first appear incorrect; in the source the two propositions are elided together with the word ‘and’. However it is not being used in the source as a logical conjunction. The case becomes more robust if disjunction is used instead. Clearly the task of casting argument into this form requires delicate judgment of the sort regularly employed by lawyers. The extent to which supportive design can assist in developing this in the lay population remains to be seen. However, for Pacisco absolute precision in drafting may not be necessary. Depending on the evaluation mechanism employed, better drafted argumentation may replace poorer as the branches of an argument evolve over time.
The initial prototype

To set an appropriate context for the prototype development a number of assumed requirements for a fully deployed version were made. Pacisco should:

1. integrate well with other web systems, e.g. social media
   E.g. Twitter might be used to draw people into engagement with a particular argument.
2. allow only anonymous contribution
   To cut through polemic and rhetoric, and to encourage rigor. Protagonists may deliberately seek to strengthen cases that they actually oppose in order to make their rebuttal more comprehensive.
3. be intrinsically secure
   To encourage free speech, those posting supporting arguments that may carry social opprobrium or legal sanction (not necessarily in the hosting jurisdiction), must have their identity untraceable in the database.
4. be transparent
   To maintain confidence in fairness it must be demonstrable that no partisan manipulation of the software and data is possible; practically this means it must be open-source and this should apply to any incorporated components too.

**Fig. 2 Structure of the Pacisco argument scheme**

The immediate implications for the design are; for requirement 1, on
following a link to Pacisco, it should open a page displaying the argument specified in the URL encoded search string that is immediately comprehensible on first visit.

For requirement 2, registration to read content should certainly not be required. To edit content this may be problematic from a security (spamming) point of view. Also entering an argument may require a number of editing sessions before publishing. Maintaining the draft version on the client may be an appropriate option that accords also with requirement 3. There are further linked issues for implementation of the evaluation mechanism that will need addressing should the project proceed that far.

Requirement 4 mandates the use of standards based technology. The prototype has been produced using HTML, CSS, JavaScript and jQuery (jQuery Foundation) in the client and an open-source implementation of XQuery (W3C) on the server. Its supporting manual/help-text has been created in WordPress (WordPress Foundation).

Future work

In its initial instantiation the prototype exposes the argumentation structure directly, the individual components being labeled as: argument, claim case, grounds, warrant, and qualifier. It may well be that a more subtle approach utilizing a template of linking phrases in place of bald labels is appropriate.

It is intended also to experiment with enhanced grammar checking, feeding back to the user the appropriateness of the propositions entered; detecting deixis, inappropriate anaphora, negation, unacknowledged compound propositions, etc. The open source grammar checker After the Deadline (Automattic Inc.) is a candidate to support this experimentation.

Collaborators will be sought to assist with testing, design and implementation, pending initial demonstration of the effectiveness of the approach.

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