

The Virtual Polling Station

Transferring the Sociocultural Effect of Poll Site Elections to Remote Internet Voting

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Abstract: Public voting in polling stations is believed to have a socioculturally-integrative effect, conveyed through the symbolic and ritualistic character of the election process. Remote internet voting is believed to not be able to provide this effect, because it omits the corporeal appearance at the polling station. The following contribution aims at indicating how such a sociocultural effect could be transferred from the real world polling station to remote internet elections.

1 The Public Nature of the Polling Station and Internet Elections

All forms of electronic voting, including internet voting, have been criticized for not fulfilling the Principle of the Public Nature of the Election which was declared as a constitutional principle in the Voting-Machine-Judgment of the German Federal Constitutional Court [BVerfG09] and which requires verifiability of the election for every citizen without special technical knowledge. Remote internet voting has additionally been accused of another shortcoming which the German legal literature has also located in the sphere of the Principle of the Public Nature of the Election. It has been brought forth that remote internet voting is not able to substitute the sociocultural integrative effect of public elections in real world polling stations, conveyed through the symbolic and ritualistic form of the election process. The corporeal act of voting at the polling station is described as the conscious exercise of a civil liberty as well as the perceptible expression of affiliation with the community to which is attested an identity-causing and ritualistic impact which politically integrates the voter and conveys to him a sense of the significance of the election [Ha04]. The "...polling station with its naked walls and shabby ballot boxes..." is described in contrast to the surroundings of the internet as a dramatization-free zone of political rationality [Me04]. The citizen is believed to experience himself through the ritual of the public election as sovereign and to gain the chance to identify with the state. This "symbolic-ritualistic character," which is attested to create a constituting effect in democratic elections, is believed to be "trivialized" and to dwindle in remote internet voting [Ka05]. Votes cast via the internet

are described as an unreflected act which is inadequate to the significance of an election and are even called “junkvote” [Bu01].

This criticism would mainly also be applicable to postal voting in which the corporeal appearance at the polling station is also omitted. In the Voting-Machine-Judgment this aspect of the public nature of elections was not addressed. The democratic-integrative effect of the election was based on the possibility for every citizen to fully monitor compliance with the election principles laid down in Article 38 of the German Constitution (GG). On the other hand, the Court was not called upon to say anything on this aspect, since the ruling only examined the use of on-site voting machines. It therefore remains unsettled, if a sociocultural effect as described is constitutionally required as part of the Principle of the Public Nature of the Election or if it is merely an effect caused by the established voting technique.

It shall not however be disputed here that such a symbolic-ritualistic effect of elections, aside from its dogmatic justification, is able to accomplish considerable integrative processes in democratic states. The abstract construct of the state becomes perceptible in symbols and rituals. By ritualistic participation of the citizens in matters which unite them and by establishing symbols for the display of common meaning, the community gains form, security and constancy [He83, p. 97]. Such symbols and rituals are widely known. The state, as a union of meaning and a body capable of acting, is perceptible in flags and emblems, in anthems, in the public meetings of parliaments and among many others also in the act of voting in public, in which moreover every eligible voter is able to take part actively. An election in a parliamentary democracy is the fundamental tool by means of which the citizens unite into a public body which is able to act. By active participation the citizens gain the possibility to take part in the installation of the organization called state and thus to perceive it as something of their own making, not as something ordered from above. Unity in meaning and unity in action by forming a public body are the two factors which in combination give the societal alliance its constancy [He83, p. 106 ff.]. In an election, they are exercised side-by-side and become perceptible by the symbolism and the ritual of the public act of voting.

It is however a misconception to believe that the described effect could only be conveyed by the corporeal act of voting in the real world, a misconception which overlooks that the sociocultural effect of public voting could be conveyed in new ways by a medium like the internet [Ne02]. It has not been proved by which actions or symbols exactly the described effect is conveyed. Is it interaction and communication with other voters? Is it the reputable surrounding of the polling station? Is it the slowness of the process? Is it all of them together? Is it something else for each voter? The question would be very hard to answer.

However in the following, it shall be indicated how the central aspects of the act of voting in the real world polling station could be transferred to remote internet voting.

2 The Virtual Polling Station

Concepts for internet voting systems in respect to user interfaces up to now have usually aimed at offering a login and a digital ballot paper. Internet remote voting is therefore rightly sometimes called electronic postal voting [Ta99]. In this form, it uses only part of the potential of the IT-surroundings: the mobility of the voter in comparison with elections in polling stations, the speed of the transmission in comparison to postal voting, and the speed of the counting in comparison to both.

It does not, however, use the possibility to create virtual reality and thus to simulate the act of voting as a perceptible exercise. The polling station could be displayed graphically and entered by the voters via avatars.¹ Voters could enter the polling station simultaneously and thus interact as in the real world. This user interface could become the frame into which established internet voting concepts such as authentication, digital ballot paper, encryption, etc. could be embedded and which could extend them by the sociocultural effect of the public election.²

2.1 The Polling Station and the Voting Avatar

The polling station could be displayed as a three-dimensional graphical space. It could be designed following the model of a typical polling station in the real world, for example a school building. It could even imitate the real polling station for each electoral district. The virtual polling station thus could convey a reputable impression like real world polling stations are believed to do. Creating one virtual polling station for every polling station in the real world would mean higher expenses than creating only one virtual polling station for all absentee voters. It might however convey a high level of identification with the electoral district.

The voting avatar represents the voter graphically in the virtual world and allows him to move in the polling station and carry out the necessary steps of the election. It could look like the actual voter and thus make him visible to the other voters like in the real world polling station. If it would indeed be sensible to shape the avatar as the real voter, should be further discussed. At least the design of the avatar should stay within the scope of what is possible in the real world, so that it would be adequate to the significance of the election and not give the voting process the character of a game.

2.2 Chat

If one sees an important trigger for the sociocultural effect in interaction and communication with other voters, as possible in the real world polling station, this could be arranged in the virtual polling station by means of a general chat, a display by which text messages may be sent and read by all participants. Whoever would misemploy this application in order to disturb orderliness in the polling station, for example by polemic statements or molestation of other voters, could, exactly like in the real world, be expelled from the polling station, § 31 S. 2 *Bundeswahlgesetz* (BWG). The name of each voter or alias should be shown above the avatar so that chat messages can be linked to it.

¹ The use of 3D-surroundings and avatars in internet voting has also been proposed in order to attract younger people to internet voting in [MP04].

² Established concepts might also be extended at crucial points by the virtual polling station. Such aspects shall only be experimentally hinted at in this contribution, however.

2.3 Electoral Assistants

If one sees an important trigger for the sociocultural effect in communication with electoral assistants, who embody the state, even this could be arranged in the virtual polling station. Electoral assistants could also take part in the election process by means of avatars. By means of audio and video transmission as in VoIP-communication, they could even get in direct contact with voters and exercise classic duties of electoral assistants, for example identity controls and voting instructions. Maybe they might even monitor by video transmission that the secrecy of the vote is not broken by persons gazing at the voter's computer display.³

Internet voting is often seen as a way to make election assistants obsolete. This approach is however in conflict with the democratic ideal of a public citizen election, in which citizens take part on both sides of the ballot. It furthermore disregards the communicative potential of the internet. Also, a democratic monitoring of the election by citizens on both sides of the virtual ballot might be facilitated in this way.

2.4 Casting of Votes

The actual casting of the votes could be conducted classically by use of a digital ballot paper, which the voting avatar optically receives from the assistant avatar. The ballot paper could be filled out by the voter at a voting table and be dropped into the graphical ballot box. All IT-based concepts for the protection of the voting principles could and should be brought to bear in the vote casting. The virtual polling station cannot replace them. It would only convey the symbolic and ritualistic framework for the casting of votes.

2.5 Possible Election Procedure

The possible procedure of an election in the virtual polling station will now be outlined in order to make the specific chances and risks accessible to further analysis. Additionally the design of the virtual surroundings and their functional interaction can be described vividly in this way.

Every voter might be handed the necessary software and be assigned a temporary or permanent voting account, which would grant to him access to his avatar and to an instantiated⁴ polling station. After logging in to his account, he might gain access to his avatar and might be given information on the voting procedure, the code of behavior in the polling station, and the possibilities for monitoring the election. He then might enter the virtual world with his avatar and appear, for example, on the street in front of the polling station.

³ This idea would of course have to be designed as to be in compliance with the Privacy of the Home (Art. 13.1 GG) and the Informational Self-Determination (Art. 2. 1, Art 1. 1 GG).

⁴ Instances in virtual worlds are closed areas, which may for example be entered only by certain users.

Here he might chat with other voters, exactly like in the real world. He might enter the polling station and, if one sees another trigger for the sociocultural effect of the election in the slowness of the procedure, get in line and wait for his turn. He might then approach an assistant avatar and interact with it. An audio-visual window might pop up by means of which voter and voting assistant might communicate directly. The voting assistant might brief the voter, check his identity, and eligibility. He might then hand over the digital ballot paper to the voter. This might be visualized by the assistant avatar handing a graphical ballot paper over to the voting avatar. The voter might walk his avatar over to a voting table and fill out the ballot paper.⁵ During the act of casting the vote, nobody must be able to interfere with the voter or his avatar. The voter might then again interact with an assistant avatar or directly drop the graphical ballot paper into the ballot box. He then might leave the polling station and log out or, as in the real world, might chat with other voters on the street in front of the polling station.

2.6 Sociocultural Effect

The advocates of a symbolic-ritualistic effect, which can only be conveyed by the corporeal act of voting in the real world polling station, present triggers for this effect. These triggers are stimuli from the real world, like seeing other voters, the optical impression of the polling station, corporeal movement on the way to the polling station, etc. The described effect is a pattern-based reaction to these stimuli.

Stimuli from the real world may however be transferred into virtual worlds and the other way around [Fr05, para. 15 ff.]. By means of graphical simulation of procedures in real world polling stations, the stimuli of public voting may, to a large extent, be transferred into the process of remote internet voting and trigger correspondent pattern-based reactions in the voter.

During transfer, stimuli are subject to transformation processes. Transfers from one world to another, as would be the case here, are not complete [Fr05, para. 28 ff.]. Driving a car in the virtual world is only an abstraction of driving a car in the real world, different actions are necessary to succeed. This transformation is necessary to transfer a stimulus and the correspondent learned pattern from the real world into the natural laws of the virtual world [Fr05, para. 30 ff.]. In a successful transfer, the virtual world does not employ the same stimuli as in the real world, but an abstract version of the stimulus which is able to suggest a reaction pattern from the real world [Fr05, para. 32 ff.].

It is thus in principle possible to trigger the described sociocultural effect of public voting by a virtual version of the procedure in the real world polling station. How successful this transfer would be in respect to every single voter would depend on the quality of the stimuli which are used to simulate stimuli from the real world, which are believed to trigger the desired reaction pattern. These relations would have to be analyzed thoroughly.

⁵ A graphical polling booth might also be installed. It would however fulfill no other function than the visual one and might lead the voter to the misconception that it would grant the secrecy of his digital vote.

Graphical depiction of the polling station, the voters, and of the vote casting however appear to be functional suggestions of the voting procedure in the real world with a relatively low effort of transfer. Direct audio-visual communication with election assistants would demand an especially low effort of transfer, namely that from an authentic live portrayal to a real person, a transfer exercised by humans for ages.

The virtual polling station might slow down the remote internet vote casting and remove from it the feeling of cursoriness. The voter would not switch back and forth between browser windows, between the election, commercials and videos, but his senses would be focused on the election process.

Experiences in virtual worlds, especially communication and interaction in three-dimensional graphical surroundings leave behind memories. Nobody who has ever exposed himself to this technology would dispute this. The possibility of stimulus transfers from real to virtual and the effectuality of virtual experiences for the real world has furthermore been widely proven and accepted in education and training. Pilots learn real aviation in simulators. Doctors exercise physiological training by means of computer simulations instead of test animals [Mü96] and train surgical operations on humans in virtual surroundings [MHB10].

2.7 Difficulties

The process of stimulus transfer and transformation from the real world polling station will only work, if stimuli from the real world are known. The reaction pattern of the public election can only be suggested by virtual stimuli, if people still exercise and thus learn the pattern in the real world. For people who know only the virtual polling station, different reactions might be triggered. In order to convey the same reaction to these possible future citizens, the patterns would either have to be trained in the real world or virtual stimuli would have to be found, which trigger the same reaction originally.

By graphically depicting the public election of the real world, the aspect of monitoring the election and the sociocultural effect of the election would no longer be made possible by the same means. When an avatar casts a vote, this act visualizes the election. The visualization however does not grant certainty of the successful vote cast. For verification other mechanisms would have to be applied, which would allow monitoring for everybody without special technical knowledge. Voters would have to be advised not to rely on graphic visualizations, which are not designed to convey trust, but symbolic and ritualistic effects.

Remote internet voting and especially the virtual polling station would demand a certain amount of skill in respect to computers and the internet as well as access to hardware and software. Since these are not given for all citizens, the described technology may not fully replace established voting techniques, but rather be an additional voting channel.

Virtual realities have up to now become commonly known mainly through entertainment, especially gaming. The concept of the virtual polling station might thus be attacked on the ground that it would further trivialize the act of voting and change it into a game. Such criticism would however oversee that technology, especially information technology, triggers specific effects only by its specific application [Ro93]. The virtual polling station would have to be designed in a way that would be adequate to the fundamental significance of elections in parliamentary democracies and must not be designed following the aesthetics of entertainment.

3 Conclusion

By means of a virtual polling station as described above, remote internet voting could trigger the sociocultural effect of corporeal voting in the real world. Remote internet voting would not remain in the stage of electronic postal voting, but develop into an absentee election with virtual attendance. In comparison to postal voting, remote internet voting including a virtual polling station could thus considerably facilitate the sociocultural effect of absentee voting.

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