Online-offline strategies of urban movements against vacancies.
The crowdsourcing platform *Leerstandsmelder.de* as a collective and critical mapping tool

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Abstract

It is a paradox that in spite of growth of major cities due to migration and enormously increasing spatial-economic pressure, a large number of vacant and neglected properties can be found in German metropolitan areas. Urban movements are increasingly protesting against this development and call for an opening and a non-commercial use of these properties. This article broaches the issue and the meaning of digitized urban movements in regaining control of urban development processes by focusing on the opening and the usage of vacancies. More precisely, it deals with collective critical online mapping of vacancies. Urban movements use new media technologies like crowdsourcing platforms to promote counter-publicity and alternative views. Building on a case study of the German online mapping platform *Leerstandsmelder.de* and the urban collective *Schnittstelle5* of the city of Mainz, I assess to what extent urban movements may take advantage of the new digital possibilities to tackle the challenge of vacancies. The article examines how urban movements use geoweb and geo-referenced crowdsourcing services, and considers how such strategies may change both the acquisition and the usage of urban space.

Keywords: social urban movements, urban collectives, vacancy, geoweb/web 2.0, collective critical online mapping, crowdsourcing platform

Introduction

Substantial research has been done in the field of vacancies in the rural periphery, in villages, and in shrinking cities (cf. Bontje, 2004; Bullinger, 2002; Dascher, 2010; Krajewski & Werring, 2013; Peter, Fengler & Moser, 2013; Vollmer, 2015; Reichert-Schick, 2010; Schiffers, 2009, pp. 27-48; Schmied & Henkel, 2007; Spehl, 2011; Stiller, 2011; Oswalt, 2005a; 2005b; 2006). There can be no doubt that both demographic and economic change result in shrinking processes in certain areas of Germany. In these regions there are many inexpensive vacant estates because for years people have been migrating elsewhere, most notably to the cities, leaving gaps and vacancies elsewhere. However, the picture portrayed here of abandoned houses in rural areas and shrinking cities is one-sided and does not stand up to a thorough analysis of the multifaceted phenomenon of vacancies. Also in Germany's metropolitan areas many empty houses and spaces can be found: "In spite of a general housing shortage in Berlin, thousands of council houses are vacant"[1] (Paul, 2014), and in Hamburg, as well as "in other major cities, more than 30 per cent of highly-priced new flats are untenanted. The vacancy rate of luxury flats in major

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[1] German quotations are translated into English. German titles are original quotes, so that they can be found in the literature.

cities is increasing" (Haimann, 2014). In Frankfurt am Main the "traditional high office vacancy", i.e. the vacancy rate, only for office space is currently higher than 13 per cent[2], which means "approximately two million square meters of office space in Frankfurt are empty, of which almost half is no longer marketable" (Schulze, 2012).

Due to the enormous population increase in some German cities and metropolitan areas, the need for (cheap) housing is growing and the demand for space for creative evolvement is ever increasing. So, how is it possible that in Germany hundreds of vacancies can be found in the city centers of prosperous and growing metropolitan areas? Aiming to address this unfavorable status quo, a variety of people have joined together in initiatives and organizations over the last years. Their aim is to draw public attention to the paradox and deplorable situation of spatial-economic pressure and high rents on one hand and massive vacancy rates on the other. In German cities, a diverse array of urban actors like single loose groups, alliances and other networks have united under the street-slogan and fundamental research issue *Right to the City* (cf. Lefebvre, 1968; Harvey, 2003; 2008; 2012; Merrifield, 2011; Mitchell, 2003; Purcell, 2002; 2015; Iveson, 2013; Novy & Colomb, 2013; Mayer, 2011; 2014; Holm, 2009; 2011; 2014; Holm & Gebhardt, 2011; Gebhardt & Holm, 2011; Vogelpohl, 2012; Mullis, 2014). They develop various ways and strategies to enforce an urban policy discussion on the topic of vacancies.

Seeking to explore strategies and implications of these urban movements and collectives acting against vacancies, this article more broadly addresses the interdependence of media and the city, too (cf. Georgiou, 2013; McQuire, 2008). In particular I draw on Georgiou's (2013, p. 4) considerations of the media city. She rightly draws attention on the interactions between revolts in urban and virtual spaces, because

> social actors are makers of meanings of the city and of the media: the urban dwellers, the consumers, the visitors, those seeking refuge are part of the story of the city, even if always from unequal positions. But there is a consequent and important element of this argument: the city is a site of struggle. And the very many struggles for symbolic and material resources in the city increasingly unravel at the meeting of the media and the city: when protesters use social media to gain local and global presence.

On that note, the article deals with new media technologies and digital means of communication such as peer-to-peer networks, crowdsourcing platforms and online maps as they have become important tools of urban intervention. Social urban movements use ICTs and networking platforms to efficiently organize themselves, to spread different opinions more quickly or to make issues a public matter. These trends have already been observed in many demonstrations and riots on different topics in major cities, such as Istanbul, Cairo, Madrid, London or Sao Paolo, or in the well-known and explored web-based mobilizations of the Occupy-movements over the last years (cf. Georgiou, 2013, pp. 117-144; Mörtenböck &

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[2] It should be noticed that this is the lowest level of the vacancy rate since 2002. In recent years it had been up to 18 per cent. These rates are also confirmed by Clamor, Haas and Voigtländer (cf. 2011, p. 4). They add "the office vacancy rate has become a visible problem in many German cities. In 1990, the average vacancy rate in the 125 biggest cities was at 1 per cent. By 2010 it climbed to 7.5 per cent. In the seven major cities it was higher than 10 per cent" (ibid., p.1).

Mooshammer, 2012; Bennett, Segerberg & Walker, 2014; Loader, Vromen & Xenos, 2014; Xenos, Vromen & Loader, 2014; Sloam, 2014; Kreiml & Voigt, 2011; Uysal, 2012; Castells, 2009; 2012; Diani, 2003a; 2003b).

Acknowledging media is "the medium which 'represents' urban phenomena by turning it into an image" (McQuire, 2008, p. vii), I will consider urban collectives as alliances in the composition of the *Right to the City* movements that digitally promote counter-publicity.[3] My focus is on their publishing of online maps of vacancies to circulate alternative views on urban space. Therefore I will map their role in both regaining control and influencing urban development processes in the field of the opening and utilization of vacancies through the use of media. In particular, I examine online-offline[4] strategies of urban collectives for making vacancies available for public use. The German-wide online mapping platform *Leerstandsmelder.de*[5] and the urban collective *Schnittstelle5 // Raum für Stadtentwicklung und urbane Projekte e.V.*[6] of the city of Mainz will serve as case studies. I will explain in which way urban collectives and movements against vacancies may appropriate the new possibilities enabled through the use of web 2.0 applications. How do they assert political pressure on urban development on the basis of voluntary

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[3] Urban collectives may consist of only a hand full of persons. For example, the members of *Schnittstelle5* in Mainz are nine active persons for the moment. Next to them there is a great variety of collectives working on other related issues. Together all these single collectives contribute to the *Right to the City* movement. This is why I see urban collectives as alliances who together form the *Right to the City* movement.

[4] As a comment I want to discuss and unpack the dichotomy of *online-offline*. First of all it is an analytical distinction to better grasp and comprise the different tactics and strategies of urban movements against vacancy. The hyphen highlights and symbolizes their coherence and simultaneity. For sure, in 2015 it is no more possible to keep up any separation between the physical and digital worlds or spaces. More than ever before we are interconnected through mobile technologies and users do not perceive borders between the physical and digital space as they "do not have the feeling of "entering" the Internet" (de Souza e Silva, 2006, p. 263) as a separate entity. We can imagine these interconnections as porous spheres and they even become one as they nowadays migrate into each other to one single life world or social space. But still, we have no meaningful expressions for this processes of melting, merging or convergence: we always fall back in distinct schemata like *online* and *offline*. Hence, de Souza e Silva (cf. 2006, p. 261f) proposes a conceptualization of the *hybrid space* as a configuration of the physical, the digital and the social space: "Without the traditional distinction between physical and digital spaces, a hybrid space occurs (…). Therefore, the borders between digital and physical spaces (…) become blurred and no longer clearly distinguishable" (ibid., p. 264). She concludes: "A hybrid space, thus, is a conceptual space created by the merging of borders between physical and digital spaces (…). It is built by the connection of mobility and communication and materialized by social networks developed simultaneously in physical and digital space" (ibid., 265f). In short, I strategically use the notion *online-offline* to better illustrate the movements' overlapping, interconnected and simultaneous strategies both in the physical and digital spaces (for other conceptualizations cf. Ohta & Tamura, 1999; Milgram & Colquhoun, 1999).

[5] *Leerstandsmelder* can be translated as "vacancy detector" and stands for the possibility to report an observed vacancy through online mapping (cf. section 4 and www.leerstandsmelder.de).

[6] The initiative *Schnittstelle5* has chosen its name to identify with the meanings and functions of the notions "interface", "connector" or "link". The collective stands not only for networking with other initiatives in urban contexts, but also for distribution of information through the use of social media, personal communication and public activities. Thus, *Schnittstelle5* serves as a contact for bottom-up urban development or regeneration and initiates social, cultural and non-commercial projects in vacancies. *Schnittstelle5* is the local admin of *Leerstandsmelder.de/mainz*, too (cf. www.schnittstelle5.de).

collective online mapping[7] of vacancies? Or, more broadly, in which ways these activist groups aim at influencing the usage of urban space and future urban development?

Methodological approach

Discussing urban protesters, Holm (2010, p. 76) correctly states "such new urban movements (...) cannot be designed on the drawing-board". Hence, it seems insufficient to just observe urban movements and vacancies to gain deeper understanding of their workings and implications. Those movements take place on urban streets and they are part of everyday life experiences. My statement indirectly refers to the term *field research,* which Escher and Becker (2013, p. 146, emphasis in original) define as "an empirical method to collect cultural and social science data *on-the-spot and in its everyday life context".* Further, they suggest "to replace field research, as a concept of participation, with a concept of interaction and to contemplate rather than observe in order to create a dialogue process of knowledge gaining at eye level" (ibid., p. 148). It is only by means of active participation, involvement and interaction that the researcher will obtain a thorough understanding of the research object, its structures, processes and contents. On that note, I want to emphasize that my argument is informed both by my theoretical framework as well as by my embodied experience as an active founding member of *Schnittstelle5 // Raum für Stadtentwicklung und urbane Projekte e.V.* As such, I am involved in the developments and decisions of the association and also part of a local and wider network of activists. This experience guarantees a thoroughly grounded, contextual knowledge as well as access to the field. In other words, the relevance for the researcher to be included and actively involved and to have a deep insight into the object of research is ensured.

Generally speaking, an explorative, ethnographic research design was developed. Observations and developments from various German cities (i.e. Hamburg, Bremen, Stuttgart, Frankfurt am Main, Kaiserslautern) have been taken into account between February 2013 and July 2015. During this phase, several *Right to the City* meetings, workshops, discussions and conferences took place all dealing with the topics of vacancies, urban movements and bottom-up city-making initiatives.[8] Throughout these events, I met with individual interviewees and important actors on a regular basis to exchange ideas and in that way I had access to initiatives on the spot, too. Since urban movements are connected in cities and in cross municipal networks the selections of interviewees was mainly done through recommendations and because of their involvement into urban affairs and the topic of vacancy. All this provided me with the possibility to recognize problem areas, research critical background information and to understand their political actions. Roughly 25 meetings, exchanges and discussions as well as 13 more formalized

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[7] Glasze (2009, p. 188) refers to it as "volunteered geographic information" or "people powered mapping".

[8] Just to name a few examples: In March 2013 in Hamburg, a conference and workshop with the title *LEERgang – der Kongress von Leerstandsmelder.de;* in October 2014 in Mainz, a conference with the title *Strategies for the opening and usage of vacancies;* in January 2015 in Wiesbaden, a symbolic house squatting organized by *Leerstandsmelder* and in Bremen, *It's raining space – International workshop for urban diversity* in July 2015. During these events, previously interviewed individuals and important network protagonists dealing with the vacancy topic were met again and this way follow-up details and new insights could be exchanged.

interviews[9] with individuals and groups from these cities have been conducted. The explorative information collected during these meetings across Germany was used to develop topic guides for problem-oriented in-depth interviews which was subsequently coupled with data on Mainz. Information on the case of Mainz in particular was gathered through several interviews conducted with participants of the urban collective *Schnittstelle5* who also administrate the online mapping platform *Leerstandsmelder.de/mainz*.

Being a member of activist networks proved additional methodological benefits. I had no difficulties gaining recurring access to informants, groups or to knowledge. Everyone politically active in the network knew about urban conflicts and subjects were all eager to exchange strategies. The rapid exchange was also facilitated by the distributed communication structures of such networks. Second, working and participating in such activist groups on a daily basis enabled me to incorporate an everyday perspective. This perspective mirrors bottom-up strategies of involved actors mobilized in a very detailed, engaged, grounded and careful rendition. Third, of course, participatory approaches have their own problems, but they can also be used in productive ways. For example, participatory researchers have been critiqued for producing potentially ideologically clouded research data. The point of view that an active involvement and immersive research experiences may lead to subjective knowledge production can be invalidated by the simple fact that there is no such thing as true objectivity in any research process. The researcher inevitably acts as an interpreter of the collected data and s/he determines the further research process: "When research is regarded as a dialectic interaction between subject and object, the result of the process, i.e. the developed theory, will always be a subjectively shaped product" (Strübing, 2008, p. 16; 2014, p. 12; see also Geiselhart, Park & Schlatter, 2012). Furthermore, according to Füllner (cf. 2014, 86), merging critical urban research with political activities offers numerous potentials, so why keep up the separation of political involvement from science and research? Why not combine both interests and thus create positive effects for both sides? "Activist urban research not only serves science, it can also help movements to gain new insights and possibilities of intervention" (ibid., p. 86). Nevertheless all empirical work and all other scientific efforts must be made transparent and comprehensible.

In short, the gathered empirical data consists of a combination of auto-ethnographic reflections alongside a body of interview data and insights in strategies of urban movements. My participation in protests and demonstrations, the involvement in urban movements, the creation of alliances as well as the contact with other urban initiatives and groups has informed this article in various ways, both explicitly and implicitly.

Theoretical framework: Urban movements/collectives and collective critical mapping in the web 2.0

Before discussing the Internet platform *Leerstandsmelder.de* and the empirical case from Mainz and *Schnittstelle5*, the theoretical foundations are clarified in this section. What am I referring to when I speak of *social* or *urban movements* and what exactly are *urban collectives*? In particular, attention is paid to recent research on *Right to the City*, the *power of maps* and *critical mapping*. New mapping possibilities in

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[9] The length of the interviews is between 35 minutes and more than four hours with an average of about two hours. Most of them are tape recorded, transcribed verbatim and anonymized.

open maps and open source projects of collective Internet platforms as well as *web 2.0* will play a central role in my considerations.

Social urban movements and new urban collectives

A great variety of movements are distinguished in the scholarly literature, like *new* and *old social movements*[10] as well as *social* and *urban movements*. In addition to discussing these, I deal with individual initiatives, alliances and groups, and their role as actors within urban movements and networks. Therefore I will define these as *urban collectives* at the end of this section.

A broad definition of *social movements* can be found in Lahusen (cf. 2013, p. 717). Social movements illustrate a consolidation of social forces over a given period of time. These forces have the objective of influencing or preventing certain social developments by replacing them with different views in order to change current social, cultural, political, or economic conditions. Roth and Rucht (2008, p. 13) are pointing in the same direction: "We speak (…) of social movements, when a network of groups and organizations based on a collective identity ensures a certain continuity", whereby the objective is "to shape social change".

Mayer (2014) explains that a distinction has to be made between *social movements in cities* and *urban social movements*[11]. She clarifies that, in terms of social movements, "the city is only the (passive) venue for political or social fights addressing a 'bigger' issue than purely urban or local concerns", whereas for urban movements the focus is on "specific urban problems, urban spatial aspects or the right to the city; thus specific urban properties, such as central squares, public places or urban infrastructures, that act as mobilization trigger factors" (ibid., p. 25, emphasis in original). The difference between social movements and urban movements is in the strategic orientation of the objectives and topics being addressed. Urban movements make inequalities in cities a subject of discussion and they take up the topics of urban lines of conflict, negotiation and appropriation of space. On that note, it is important to mention Castells (1977, p. 244) who argues that "the heart of the sociological analysis of the urban question is the study of urban politics" – and as such, more specifically urban power relations.[12] Moreover he (ibid., p. 378) amplifies that urban movements offer a way "to understand how the city changes not under the pressure of city planning technicians but under that of the conflict process in social groups". For Castells it is not about the study of urban movements for its own sake but for a better understanding of social, political or economic conflicts and, of cause, for a reflection of the possibilities for change: "Then the urban movements in the

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[10] I will not focus on the distinction between *new* and *old social movements* in this article. An introduction can be found in Klein, Legrand and Leif (1999) and in Gestring, Ruhne and Wehrheim (2014). It should be noticed that the distinction between *new* and *old* is not only a temporal differentiation. It also concerns the realignment and a new focus of the new social movements towards upcoming social topics, processes, and conflicts. Mobilizations, such as student, gender, urban combat, or anti-nuclear and peace movements, are prominent examples of *new* movements (cf. Gestring, Ruhne & Wehrheim, 2014, p. 12).

[11] For a more detailed definition of *urban social movement* cf. Castells (1983, p. 322).

[12] Research on urban power relations therefore needs to focus on the related fields of urban planning and urban social movements, while the former can be summarized as "the study of the intervention of the state apparatuses (…) in the organization of space" and the latter as "the study of the articulation of the class struggle, including the political struggle" within the urban arena (Castells, 1977, p. 261).

cities and not planning institutions become the real origin of change and urban renewal" (Castells, 2012, p. 38). In short, "urban movements aim at a change in the ruling urban order" (Künkel, 2014, p. 135) and consequently, urban space is both the objective and the starting point of their actions and it is a key factor in their claims and positions.

The current waves of formation of the so-called *Right to the City* movements, which occur all over the world and which are organized in cities as well as in cross-municipal networks, are of particular relevance in this context.[13] In their central demands, the *Right to the City* movements make "a general claim of non-exclusion from urban resources" (Holm, 2011, p. 96) or "non-exclusion from the qualities of urban society" (Gebhardt & Holm, 2011, p. 7). Holm (2010, p. 72) considers the *Right to the City* as the "return of an urban policy opposition" with "the demand to collectively participate in future urban development". He (ibid., p. 73) confirms that "urban policy movements increasingly focus on the socio-economic issues concerning urban development again" and that with this politicization of the urban space the *Right to the City* movements take up a key function by providing the possibility "to textually and practically link struggles which would otherwise be fought independently" (ibid.). Also Mayer (2011, p. 53), who has done extensive research on social and urban movements over decades, regards *the Right to the City* constellations as "a new phase in the development of urban social movements in which new and broad coalitions throughout the city seem to have the potential to unify a variety of urban policy demands and thus they are a challenge to neoliberal planners, politicians and urban developers". Harvey (cf. 2003; 2008) sees the radical global political and economic changes as the cause of a new wave of urban movements, and in his book *Rebel City: From the Right to the City to the Urban Revolution* he (ibid., 2012, p. 5) summarizes: "To claim the right to the city (…) is to claim some kind of shaping power over the processes of urbanization, over the ways in which our cities are made and remade".

In general, the foundations of the *Right to the City* movements must be understood as a counter-concept to today's new socio-economic and spatial exclusions from urban development. These new constellations may be regarded as a unification of groups that articulate their collective ideas, demands and concepts in terms of urban space and its development, and tend to consider themselves opponents of current urban policies. Together they have the potential to unify a variety of urban policy demands and that is why urban movements must always be seen in social, political and economic contexts (cf. Gebhardt & Holm, 2011, p. 7; Holm, 2011, p. 93; Grell, 2014, p. 240ff; Mayer, 2011, p. 53).[14]

Unfortunately, in the literature on the *Right to the City* movements, these individual groups or associations that (co-)characterize and (co-)support the embracing slogan *Right to the City* are often neglected or mostly summed up into one consistent mass, following a clearly defined mutual goal. The significance of individual organizations and initiatives is often only mentioned briefly in the scientific discourse. Furthermore, their specific demands, approaches and tactics are not considered and their strategies are not analyzed but widely ignored. However, when taking a closer view, it becomes clear that various actors

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[13] The *Right to the City* movements refer back to the title and content of the book *Le Droit à la Ville* by Lefebvre (1968) (cf. in detail Schmid, 2011a; 2011b; Mullis, 2014, pp. 33-72)

[14] It should be noticed at this point that in the course of all these discussions, approaches to a post-political and post-democratic city are considered as well, since power structures, suppression, insecurity and diminishing democratic processes are closely linked to capitalist mechanisms of urban development (cf. Swyngedouw, 2007; 2013; Mullis & Schipper, 2013).

develop distinctive models to approach a topic and to support the *Right to the City* movements. As mentioned, specifically situated groups and their digital strategies will be emphasized in this article. I will therefore expand the view and specifically address the specific efforts of urban collectives within the mentioned *Right to the City* networks.

Ziemer's (2013) concept of *complicity* provides a theoretical framework for my following observations on new coalitions and urban collectives. This concept offers a new perspective on collectivity, as it allows us to grasp the ways in which people come together "to fight for temporary (or for change in) use of areas, the retention of open space, or the strengthening of cultural initiatives in cities" (Ziemer, 2012, p. 275). Her understanding corresponds to what I have said about the vacancy initiatives and collectives expressing themselves politically in urban affairs. In Ziemer's definition, accomplices are "co-perpetrators who jointly make a decision, co-plan a deed, and carry it out together. These three factors need to coincide for true complicity" (ibid., p. 275). In addition, complicity must be based on a collective opinion or attitude towards a certain topic. To achieve such conditions of compliance sometimes long-lasting and exertive discussions between all members of such collectives are necessary. These processes of grassroots democracy, opinion formation and target formulation are mainly found in smaller social configurations because such common agreements demand consciously and active participation and time-consuming involvement. Through teamwork practices of active agreement making the collectives build their own clearly defined convictions, dynamic logics and rules instead of adopting and adapting to established hierarchies or agendas. These methods can be understood as formations of a subaltern counter-public. While I regard urban collectives as active, mobile and flexible coalitions of people who take interest in urban affairs and policies, Ziemer defines complicities "as the intensification of networks" (ibid., p. 277). Urban collectives work pragmatically and align their methods and functioning with mutually defined objectives while being part of a greater network structure. These perspectives and the significance of urban collectives as social groups within urban movements will be taken up in the empirical section.

In summary, every resident of a city has the right to participate as well as to shape urban life and the material urban surroundings. The regaining of this right is reflected in the possibilities of participation, co- and self-determination, and in the appropriation of vacancies. It can be concluded that these network-type co-operations must be embedded in the German-wide trend of participative planning processes and civil participations. Even if urban collectives mostly use subversive means and strategies to create political pressure, their key objective remains a greater say in the decision-making process and to gain a greater influence on urban developments. Furthermore, since cities also exist in media, it is important to focus on the mediated, less tangible and visible types of opposition beyond 'spectacular' street protests. My focus here is specifically on online protests. This perspective will be expanded below with a view on online strategies in terms of critical mapping in web 2.0.

Critical mapping and cartography in the age of web 2.0

As an introduction to *critical cartography* and to *the power of maps*, Harvey's (2001, p. 220) much cited statement explains that cartography and the making of maps play a fundamental role in the history of

geography: "Cartography is, plainly, a major structural pillar of all forms of geographical knowledge".[15] Bittner and Michel (2014, p. 64) define the field of critical cartography as follows: "Critical cartography includes both the questioning of maps and their reflective application by means of using critical maps. Thus, critical cartography is both critique and critical practice". The discussion about maps inherently focuses on the question of their power, their production and their utilization. As a consequence, the social practices to produce maps will have to be observed as well. In the course of the discussion on the power of maps, the early works of Harley (1988; 1989; 1996; 2008) are essential. In his legendary article *Deconstructing the Map*, Harley (cf. 1989, p. 12; 2008, p. 438) makes an important distinction between the internal and external power of maps. *External power* refers to the link between maps and political power, since the production of maps was and remains often centralized, imposed from above and depended on very few, mostly political privileged actors. Accordingly, Harley (1988, p. 278; 1996, p. 378) states that they are "never value-free images (…), maps are a way of conceiving, articulating and structuring the human world which is biased towards, promoted by, and exerts influence upon particular sets of social relations". In other words, maps obtain their power through social practices. They guide or instruct social action and only by this means they can have powerful effects.[16] Thus, *internal power* is considered as a process of making geography by means of cartography, in which the map creates and (re)produces 'realities' by depicting or abstracting spatial structures or circumstances of given places. Their contents (often prematurely) become 'true' by their mere existence and "the apparent honesty of the image" (ibid., 1989, p. 3; 2008, p. 426). Thereby, maps create a powerful impact: "We can talk about the power of a map (…) as a force for change. In this sense maps have politics. (…) The key to this internal power is thus cartographic process" (ibid., 1989, p. 13; 2008, p. 439).[17] In his explanations, Harley broaches the issue of social structures that are 'hidden behind' maps. Maps are social products, they are constructed, they represent power and they communicate and visualize – often intentionally – distinct (world) pictures (cf. Crampton, 2001). Cartographers are therefore powerful people in two respects: their profession gives them power and the act of cartography is an act of appropriation, concentration and retention of power. Cartographers must thus be regarded as fundamentally political actors. As Scott (1998, p. 87) succinctly puts it, "the apparent power of maps (…) resides not in the map, of course, but rather in the power possessed by those who deploy the perspective of that particular map". This takes us to the subject of new technologies of the digitalized world in web 2.0 and the associated new possibilities, mentioned earlier in this article.

New types of media, ICTs and social networks have a revolutionary impact on our ways of thinking, behaving and working.[18] The digitalization and mediatization of our everyday lives and surroundings heat up the debate about the extents and effects of these new developments, they have caused a boom in

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[15] To illustrate Harvey's statement, we can refer back to the beginnings of the surveying of the world and the related gathering of geographical knowledge which led to military and economical power, domination and exploitation: "When it became clear that geographical knowledge was a vital source of military and economic power, then the connection between maps and money (…) followed not far behind" (ibid., 1990, p. 424).

[16] "Maps do not have a social effect as artefacts – as such they are merely printed paper or pixels on a screen (Belina, 2013, p. 152).

[17] For a detailed overview of the discussion and conclusions concerning the power of maps and critical cartography, cf. Crampton, 2001; 2010; Crampton and Krygier, 2006; Dodge, Kitchin and Perkins, 2009; Kitchin and Dodge, 2007.

[18] Cf. Hodkinson, 2011; Croteau and Hoynes, 2014.

literature and creative ideas about the links of media to both urban space and urban society. This boom has introduced a new terminology for geo-referenced data systems, such as *web mapping*, *volunteered geographic information*, *ubiquitous cartography*, *wiki-mapping*, *vernacular mapping* or *spacial media*, *geospatial web*, in short *geoweb*, *locative media*, *spatial crowdsourcing*, *geo-collaboration*, *map hacking* and, more generally, *neogeography* (cf. Elwood, 2009, p. 256; Crampton, 2009, p. 91; Parker, 2014, p. 11). Addressing the wider contours of this development, Georgiou (2013) conceptualizes the interdependent dependencies and fertilization between media and the city or mediatization and urbanization. She thereby initiates a fruitful discussion on the opportunities of citizenship and urban action through media. Georgiou (ibid., p. 145) proposes three different and conflicting versions of cosmopolitanism. First, *neoliberal cosmopolitanism* can be described as implemented form from above or as a top-down diction, because it "is ubiquitous, hegemonic and normalized" and it "has been widely incorporated into governance and business strategies as a way of managing and benefiting from" (ibid., 145). This version is not of further direct interest in the present argument. Second, a kind of *vernacular cosmopolitanism* (ibid., p. 145) as a form of progressive bottom-up politics around urban issues of equality, recognition and redistribution is fought at street level. Interestingly, such local, bottom-up activist struggles – also the focus of my investigation – can only be heard on a wider scale with the usage of media as communication tool. Following this argument, transferring urban struggles and protests in critical media brings up a third cosmopolitan version, which Georgiou calls *liberatory cosmopolitanism:* This version "becomes possible at the meeting of media and the city, challenges neoliberalism precisely by translating the experiential reflexivity of vernacular cosmopolitanism into political action and sustained vision" (ibid., p. 146). Urban politics and struggles become much more visible and represented in and through media and thereby they become simultaneously lived-experience in-between media and the urban space and urban society. Mirroring Georgiou's concepts of vernacular and liberatory cosmopolitanism, social actors, groups and urban movements take advantage of the new possibilities created by the efforts of web 2.0. They produce a wide range of critical media content to distribute their own views and to provide alternative perspectives on the urban space.

In relation to *the power of maps*, it is important to add here, that "critical urban mappings focus on the fact that cities are contested places in which negotiations on the social balance of power are partly determined by the way cities are visually depicted and thus regarded and (re)produced" (Bittner & Michel, 2014, p. 64). Other observations broach the issue of public actors and politically active groups who share institutionalized knowledge in virtual volunteered geographical information systems and online map productions: "New spatial media (…) represent new opportunities for activist, civic, grassroots, indigenous and other groups to leverage web-based geographic information technologies in their efforts to effect social change" (Elwood & Leszczynski, 2013, p. 544).[19] Thus, there are generally low barriers to enter the Internet and the new technologies facilitate the access to knowledge and, in this particular case, to the rise of citizen participation through the production of maps — they are only one mouse click away, of which *www.leerstandsmelder.de* is a case in point. The so-called bottom-up practices of crowdsourcing

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[19] Cf. on grassroots mapping, volunteered geographic information or participatory GIS for example Leszczynski, 2012; Elwood, 2008a; 2008b; 2009; Hawthorne, Krygier and Kwan, 2008; Flanagin and Metzger, 2008.

and *neogeography*[20] allow to distribute knowledge among numerous individual users. Crampton (2009, 95) for example defines crowdsourcing as "a form of emergent collaboration in which multiple people work together on a common project (…) and through facilitated collaboration a common result emerges". He assures that the crowdsourcing approach "also has some interesting implications for mapping". Bittner, Glasze and Turk (2013, p. 935) point in the same direction: "With the geoweb comes a boom of new cartographic representations and practices which change the ways spaces are constituted, (re-)presented and appropriated. Commercial virtual globes like Google Earth, voluntary mapping projects like OpenStreetMaps (…) are examples of how the geoweb brings a swathe of new information, new representations and new actors onto the screens of our everyday lives". Beyond that, through such new user groups, the sovereignty of interpretation, what is to be addressed on maps and how it is to be depicted no longer solely rests with individual, centralized institutions or privileged experts. Through the collective production of knowledge as well as the production and visualization of geo-referenced information in web 2.0 the abovementioned power of maps is collectivized among a variety of *prosumers*[21]. Therefore, I emphasize that these described technologies of crowdsourcing in web 2.0 and geoweb will raise new possibilities and urban questions as they will reveal basic conflicting urban topics (cf. Streich, 2014, pp. 103-119).

In short, by compiling collective knowledge a variety of common data is created, undermining those power structures that are embedded in the shortening of content to 'one simple truth' or view. That is why yet others even celebrate a democratization of cartography (cf. Gartner, 2009, p. 74; Bittner & Michel, 2013, p. 111; Belina, 2013, p. 149), because "open-source tools can be used by the traditionally disempowered for counter-knowledge and counter-mapping" (Crampton, 2009, p. 96), which is accompanied by a new meaning and recapture of the map's power.[22] Maps can act as media to question hegemonic views on urban space and the balance of power and they can reveal social power structures as well as social and urban inequalities. Consequently, they can be used in progressive politics and urban movements to visualize phenomena seemingly invisible to the public by showing courses of action in terms of the

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[20] Turner (2006, 2) defines the term *neogeography* as follows: "Neogeography means 'new geography' and consists of a set of techniques and tools that fall outside the realm of traditional GIS, Geographic Information Systems. Where historically a professional cartographer might use ArcGIS (…), a neogeographer uses a mapping API [application programming interface] like Google Maps (…) and geotags his photos (…). Essentially, Neogeography is about people using and creating their own maps, on their own terms and by combining elements of an existing toolset. Neogeography is about sharing location information with friends and visitors, helping shape context, and conveying understanding through knowledge of place" (cf. Hudson-Smith, 2009).

[21] This term refers to the simultaneous act of producing and consuming an object. In our context, the boundaries between map production and map consumption dissolve. According to Glasze (2009, p. 188), the term *prosumer* is „a neologism, which is used to describe the merging of producers and consumers in web 2.0" (cf. Bittner, Glasze, Michel & Turk, 2011, p. 61).

[22] Concurrently, the mentioned fields of study not solely proclaim a democratization, but also discuss new forms of power which can be found in these new structures since "controversial and powerful negotiations, visualizations and obscurations, inclusions and exclusions, come with these new practices and processes" (Bittner & Michel, 2013, p. 111). Therefore, new questions about inclusion and exclusion structures as well as tendencies of digital gaps regarding the access to and the knowledge of soft- and hardware usage are raised. In the context of neogeography, Hakley (2013) even speaks of a "delusion of democratisation". For a further discussion on this topic cf. Bittner, Glasze & Turk, 2013 or Pickles, 2004).

utilization of and the intervention into urban spaces. Maps can serve as a tool to become involved in political practice and to change existing realities (cf. Morawski, 2014, p. 145). Following this line of argumentation, the question is how web 2.0 mapping projects are used strategically in everyday practices by urban movements and collectives and what political and spatial impact they have through their possibilities of interaction?

German-wide significance of the online crowdsourcing platform *Leerstandsmelder.de*

This section contextualizes the German-wide success story of *Leerstandmelder*.[23] In 2009, as part of the occupation of Hamburg's *Gängeviertel*, which was an unused area with 12 vacant buildings, protests took place against the sale of these houses to a foreign investor and generally against the entrepreneurial city of Hamburg and its neoliberal city development.[24] One year later, in the course of the occupation and out of Hamburg's *Right to the City* network the idea developed to create an instrument of collective critical mapping, a crowdsourcing platform for online visualization of vacancies: "Activists from the Gängeviertel started the Internet platform *Leerstandsmelder.de* to draw the public attention to the waste of resources, i.e. the current vacancies, and to support people in Hamburg willing to use these vacancies" (Ziehl, 2013, p. 63). The self-description on the homepage states that the intention is to "promote the discussion on a sustainable use of vacancies and ideas for a reuse of the objects". By means of crowdsourcing, "a collective and freely accessible pool of data and spaces is created by and by, independent of official urban information channels" (www.leerstandsmelder.de). This approach allows it to undermine institutionalized channels of knowledge and information or, as Ziehl (2013, p. 64; own emphasis) puts it: "In practice, *Leerstandsmelder.de* acts as a corrective. The platform supports the equality of information and is an important foundation in the struggle for the utilization of vacancies in the city". Koch (2011, p. 110) explains the claim of *Leerstandsmelder* to be politically and institutionally independent and at the same time to allow for equality of information and participation in urban development processes, as follows: "It is all about transparency and participation independent of official urban sources of information".

For a long time, the possibility to visualize vacancies and make them accessible to everyone online, only existed for the city of Hamburg. Today, the mapping tool is available for 28, mostly German-speaking cities (figure 1) and it is supported and maintained by local initiatives on-the-spot.

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[23] The technical realization was done by *ubilabs* and is based on Ruby on Rails, JavaScript, and a Google Maps API web application (cf. http://www.ubilabs.net/projekt/leerstandsmelder). In addition, the developers are currently working on an app including new features and a faster entry of vacancies (cf. https://www.startnext.com/leerstandsmelder).

[24] For details cf. Derwanz & Vollmer 2015; Fraeser, 2015; Füllner, 2014, p. 89; Füllner & Templin, 2011, p. 80; Twickel & Hackbusch, 2010; Höpner, 2010, p. 45; Koch, 2011, p. 103; Novy & Colomb, 2013; Vrenegor, 2012; 2014, p. 106; Vrenegor & Haarmann, 2012, p. 11; Ziehl, 2012, pp. 382-385; 2013, p. 61; 2014, p. 68.

Figure 1. 28 cities covered by the online mapping project *Leerstandsmelder.de* .

Source: www.leerstandsmelder.de (January 11, 2015).

The Internet platform is unique and of great importance in terms of visualizing vacancies and unused spaces, and urban brownfields. After registering and providing an online identity and an e-mail address, everyone can not only mark vacancies on an interactive map by entering information, such as location of the object, duration of the vacancy, type of usage, as well as photo documentation and comments, and thus contribute to the collective knowledge and to the constructive handling of vacancies but also gain access to this knowledge. At the time of writing this, a total of 5358 entries were mapped by an unknown mass of prosumers. To correct false entries, users can send remarks, which are received by the respective local administrator or initiative with editing rights (figure 2). In addition, every registered vacancy gets an information window and a detailed page on which the edited information is displayed (figure 3).

Leerstandsmelder can be considered the most active and vital network with regard to the subject of vacancies in Germany. Furthermore, it is not only an online network, but also a network of urban actors and politically involved groups. They exchange information and future developments on several occasions, such as various meetings and the yearly activists' gathering *LEERgang – der Kongress von Leerstandsmelder.de*.

Figure 2. Elements, functions, and simplified technical realization of the collaborative crowd sourcing online mapping project *Leerstandmelder.de.*
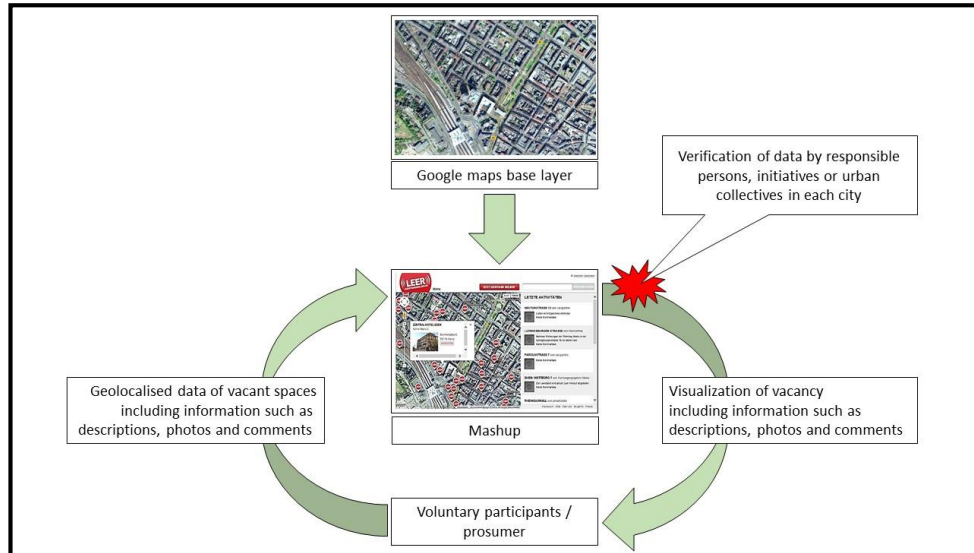
Source: Gregor Arnold, 2015.

Figure 3. Detailed page of the vacancy *Zwerchallee 8* in Mainz.
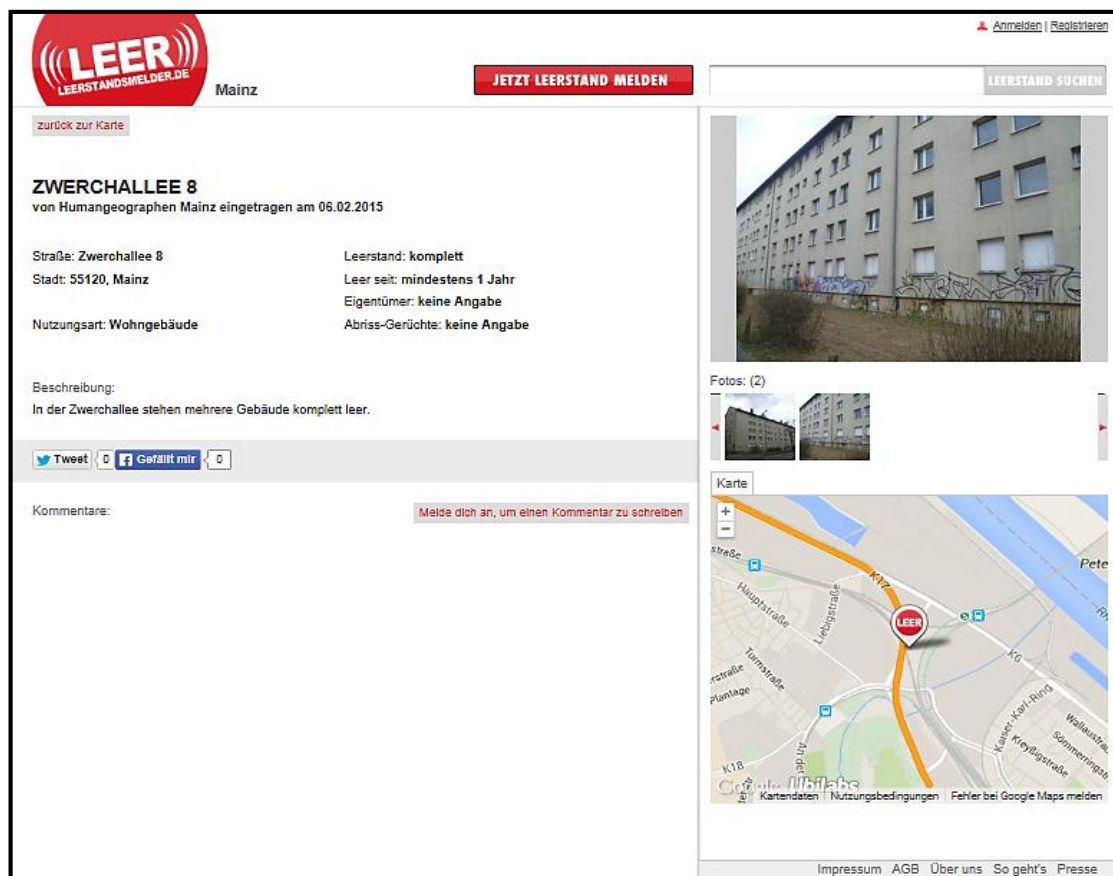
Source: www.leerstandsmelder.de/mainz (July 5, 2015).

Vacancy and urban collectives in Mainz

In many German cities, in which *Leerstandmelder* is active, urban collectives, initiatives and associations are often either part of a bigger urban movement (such as the mentioned *Right to the City* networks or other alliances) or sympathizing with their demands. These urban collectives accompany and support the data entry and the maintenance of the *Leerstandmelder* for 'their' city. To name a few vacancy intermediaries and urban actors across Germany, the collective *PL_EN_TY_EMP_TY* (http://www.plentyempty.de/) operates in Stuttgart and the *ZZZ – ZwischenZeitZentrale* in Bremen (engl.: Interim Office; http://www.zzz-bremen.de/blog/). The Berlin *Leerstandsmelder* is operated by *openBerlin e.V.* (http://www.openberlin.org/), an association for participative urban development and the strengthening of community-building resources and potentials. In Bonn, *bonnbunt – Initiative für Freiraum* (engl.: Bonn Colorful – Initiative for Open Space; http://bonnbunt.de/) fights, among other issues, against vacancies and for more cultural and non-commercial open spaces. In Kaiserslautern the *Raumpiraten* fight to conquer the empty spaces in their city for open uses (engl.: Space Pirates; http://raumpiraten.org/) and in Frankfurt am Main, the *Netzwerk Frankfurt für gemeinschaftliches Wohnen e.V.* (engl.: Network for Community Living; http://www.gemeinschaftliches-wohnen.de/) is responsible for the local *Leerstandsmelder*. *R A D A R – Kreativräume für Frankfurt* (engl.: Radar – Creative Open Spaces for Frankfurt; http://radar-frankfurt.de/) acts as an agent for fallow estates and uses the *Leerstandsmelder* as an information platform and also *Freiraum Frankfurt e.V. Leer.Stand.Kultur* (engl.: Open Space Frankfurt, Vacancy and Culture; http://freiraum-ffm.de/) describe themselves as a collective, striving to "transform the immense vacancy in the city of Frankfurt into creative rooms of possibilities". In Wiesbaden, the *Runde Tisch für Wohninitiativen Wiesbaden* (engl.: Housing Initiative Wiesbaden; http://www.wohnprojekte-wiesbaden.de/) grouped together with other initiatives to visualize vacancies and to provide a thought-provoking impulse. They recently started the *Leerstandsmelder* in Wiesbaden and on January 16, 2015, they called for a symbolic squatting under the motto *We blow a whistle against vacancy* (cf. Emnet, 2015). The mentioned Mainz collective *Schnittstelle5 // Raum für Stadtentwicklung und urbane Projekte e.V.* (www.schnittstelle5.de) also takes its place in this chain of examples that deal with the phenomenon of vacancies and pledge for their opening and utilization. Ziehl (2013, p. 64) correctly states all these local initiatives have different intentions: "Some of them intent to generally destabilize neoliberal urban development policies, others search space for their own projects. And then there are those initiatives trying to find vacancies for third parties and act as agents between owners and users". In addition, the respective initiatives are confronted with different initial situations in general and in particular with partly contrary vacancy quota in terms of demography, housing market policies or economy. In the following sections, I will therefore sketch first the population development as well as the dimensions of vacancies in Mainz. Second, I will further expand on the motives, strategies, and the way the urban collective *Schnittstelle5* handles vacancies and how they use the Internet platform *Leerstandmelder*. Interview quotes will be used to outline their practices.

Population increase, urban development and vacancy in Mainz

Germany faces a negative population development of -0.6 per cent and the state of Rhineland-Palatinate is marked by a population decrease of -1.3 per cent (cf. Ministerium für Wirtschaft, Klimaschutz, Energie und Landesplanung, 2014, p. 30): "Since 2004 the population [in Rhineland-Palatinate] has decreased by more than 57 000 [and] (…) this trend will continue in future decades" (ibid., p. 28; cf. also Statistisches Landesamt RLP, 2012, p. 13). Contrary to these processes of population decrease in Rhineland-Palatinate, the state capital Mainz and its surroundings have experienced "a (nearly) continuous absolute and relative population growth between 1992 and today" (Amt für Stadtentwicklung, Statistik und Wahlen, 2011, 4). Some years ago, in the course of the state and federal population decrease trend a stagnation was predicted for the city of Mainz, too, but what we have seen in recent years is a rapid increase. Between 1992 and 2009 the city of Mainz has grown by 13,132 inhabitants, which is a plus of 7.1 per cent (cf. ibid., 4f), and even more rapidly in the last years: "Mainz belongs to the growing cities in Germany. The population has increased by some 10,000 inhabitants over the past five years alone (Landeshauptstadt Mainz, 2015a). Consequently, the attractiveness and the popularity of the state capital in terms of real estate markets rises: "The real estate market in Rhineland-Palatinate is characterized by rising rents and purchasing prices for the third consecutive year. High increases are particularly noticeable in the urban centers" (Immobilienverband Deutschland, 2015a) or as announced by the Immobilienverband Deutschland (2015b): "Living in the city remains a trend and a significant factor for the development of the real estate market in the greater Mainz area". Furthermore, the state capital is integrated within the prosperous metropolitan economic area Rhine-Main, which is another reason why it enjoys a privileged position. The university town and media city of Mainz is not only attractive for people commuting between Mainz, Frankfurt, Wiesbaden, or Darmstadt for work, but also for students. Currently 210,000 people live in Mainz (cf. Weygold, 2015; Landeshauptstadt Mainz, 2015a), of which more than 40 000 are enrolled as university students (cf. Landeshauptstadt Mainz, 2015b). The influx of older generations who want to spend the last phase of their lives in the cities must be mentioned as well, and thus Mainz enjoys an image attractive for all population groups.

The spatial pressure and the problem of high rents can be regarded as a result of the developments I have briefly sketched here: Mainz is booming due to inwards migration. Nevertheless, several long-term vacancies and neglected properties can be found in the inner-city of Mainz. Accordingly, the issue in Mainz is that spatial and rental pressure increases while 2.3 per cent of all flats in Mainz are empty (figure 4; Dannenberg-Mletzko, 2014, p. 1; also Knapp, 2012; Erfurth, 2013; Nellessen, 2014). But this still does not clarify, how many other spaces in Mainz are empty and how many unused resources and fallow potential can be found in the urban area of Mainz. In this context, reference should be made to the retail trade monitoring of Mainz (cf. Amt für Wirtschaft und Liegenschaften, 2014). In the course of this mapping activity, 30 commercial vacancies were recorded (cf. ibid., 4). As usual in the case of a retail trade monitoring, the central inner-city areas and shopping centers are charted. However, for a detailed registration and revision of the complete vacancy situation, the circle drawn is too narrow, since adjacent streets are not taken into consideration and the whole new town as well as other city areas remain unnoticed. In addition, due to the focus of the monitoring on retail trade, logically, residential, office and service vacancies as well as industrial blights are not listed at all, which means that a broad survey and

freely accessible information on vacancies and their cartographic representation is missing. For a sustainable record of vacancies and a comprehensive vacancy management, the mapping activity should be thematically and spatially expanded and conducted at regular intervals. Only by this approach, I contend, fallow potentials can be made available for public or cultural use in a quicker way.

Based on screen shots by the *Leerstandmelder* of Mainz, vacant potentials and the initial situations of the urban collective *Schnittstelle5* are conclusively visualized in figure 5. According to the online mapping platform, at the time the screen shot was taken, 140 vacancies were displayed for Mainz.[25] This is almost five times as high as the amount mentioned above in the survey undertaken by the retail trade monitoring of the city of Mainz. This discrepancy demonstrates not only the effectiveness of such crowdsourcing platforms but at the same time the need of a comprehensive vacancy management.

Figure 4. Long-term vacancies in Mainz and the demand for open space.

Source: Gregor Arnold, 2014.

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[25] It should be noticed at this point again, that active users in the framework of crowdsourcing principles entered these vacancies. Thus, the interactive vacancy maps do not provide a statistically precise data basis, but they are currently the only tool to extensively observe the subject of vacancy.

Figure 5. Vacancy entries of *Leerstandsmelder*, Mainz (140).
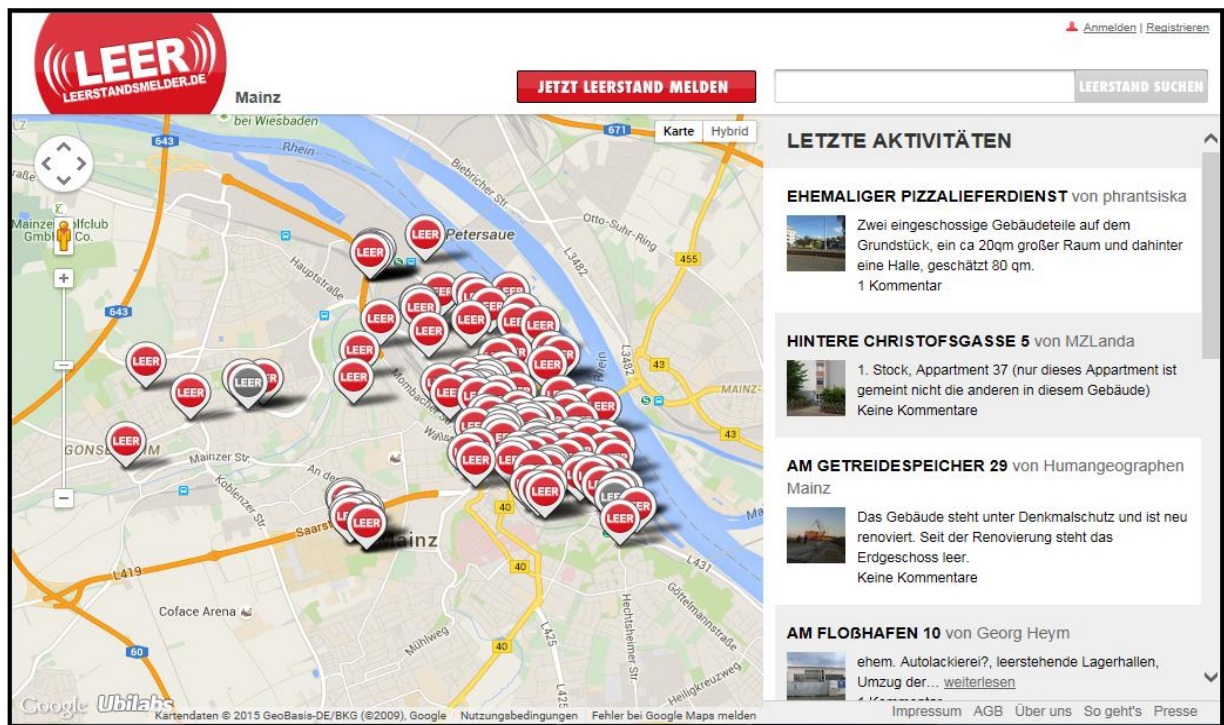
Source: www.leerstandsmelder.de/mainz (July 1, 2015).

Schnittstelle5 as an urban collective and their online-offline strategies against vacancies

The above-depicted vacancy situation is reflected in the founding principles of the urban collective *Schnittstelle5*. Below, based on interviews with its members, the motives and objectives of the collective are described. In the following, I observe their strategies in the usage of vacancies and of the Internet platform *Leerstandsmelder*.

As the members of *Schnittstelle5* describe, they had the following idea to interfere in the urban space:

> The idea came one evening without a real and concrete plan what to do, how to do it, and where to do it. We all felt like doing something with all these unused spaces and then we saw what great things were done by others [in different cities] and the topic was born.

Or, as another member supports this argument:

> We realized in our everyday lives that spaces in the city are empty and that, at the same time, a large variety of initiatives, associations and loose groups out of the culture scene or social fields are looking for rooms. This is also known from other cities and we want to counter this undesirable development and make sure that on one hand no more empty and yawning surfaces gape in the city and, on the other hand, that the residents of the city find space to realize their ideas and projects. So we brought together those looking for spaces and the vacancies.

From these passages it becomes clear, that the intervention into urban space and the demand to collectively participate in future urban development is one big issue in the founding principles of the collective. But, to come to the point, the temporary use of vacancy as a potential for urban cultural diversity and for the residents' activities was the motivation of the *Schnittstelle5*. The collective seeks to support artists looking for space to realize their music projects, art performances or classical art exhibitions. They give space to third-party actors from cultural, social or political fields who are engaged for example in questions of refugee shelters or who discuss the procedure for granting the right of asylum and refugee deportation in a more critical way. In short, *Schnittstelle5* supports forms of participation and co-determination of urban affairs as well as political motivations. For them it is important that citizens receive space for their own and, in particular, for non-commercial projects:

> We want a vivid city, which can be shaped by its residents rather than an urban development dominated by equity markets and real estate speculators. We wanted to do more than just complain, we wanted to become active and that's what we did. We wrote a concept for the temporary use of vacancies and submitted it to the city, because we wanted to get actively involved in the city development with our ideas. Vacancies are a great possibility to provide initiatives and groups with affordable rooms, so they can get opportunities for their development. We founded the 'Schnittstelle5' to address owners and companies and to make their vacancies available to people in search of spaces for a small flat-rate user fee [covering e.g. electricity and heating].

Another member of the *Schnittstelle5* addresses the subject of rising rents as well as spatial pressure and pressure of usage mentioned above, which make it difficult for economically weak groups, social initiatives or individuals to participate in their cities' affairs.

> Rents are high due to spatial pressure and therefore the idea to open affordable room to the citizens in order to give them the possibility to realize their ideas is reasonable. Not everyone can afford the rents in Mainz but through the temporary use of vacancies, at least some projects can be realized. By this means, the citizens can shape their city, they can participate and feel a closer connection to their city.

According to its statements, the fundamental conviction of the *Schnittstelle5* is that reasonably priced spaces should be made available also in expensive cities and that vacancies can take up this function. Whenever social problems and inequalities increase and urban development only follows the direction of capital many people in the city experience problems. That is why vacancy plays an important tool for those getting involved in urban development and community building processes. The ambitions of *Schnittstelle5* can be attributed to a general claim of non-exclusion from urban resources, which reflects also the central argument of the *Right to the City* alliances. The tension created by the fact that inexpensive rooms are missing and rents are rising in spite of vacancies also serves as an indicator for the mapping of vacancies:

On my daily way to work I pass two residential houses that have been vacant for years[26] and right next to them, revaluation and gentrification at its best is taking place and I find it important to visualize exactly this process because hardly any one deals with these kinds of problems. In principle it is a scandal when people have to move out of a house because it has become too expensive and there is this kind of spatial pressure, and right next to this house, other houses are empty. This is crazy. It is therefore also a matter of drawing the public attention to these processes. By this means, we also wanted to get an overview, since there's no one who feels responsible for this topic and it is problematic if no one else, not even the city, really knows where vacancies are located and more importantly, how many of them there really are.

In the course of the interviews and discussions with the *Schnittstelle5,* it becomes clear that the reasons for supporting the *Leerstandmelder* in Mainz reach beyond a mere visualization and location of vacancies. Since a comprehensive mapping of inner-city vacancies has not been conducted by the municipal administrations until the present day[27], the critical mapping tool must be generally regarded as a collective knowledge platform in the niche between market and government. In addition, public relations and raising awareness of the subject of vacancy in spite of increasing spatial pressure are essential motives. With the possibility to collectively collect data and knowledge of the urban space and to publish and share this common data to anyone online, the *Schnittstelle5* not only wants to make vacancy visible or to start a discussion on these spaces, but they want to get involved in decisions on the future of their city. As discussed in the conceptual section above, maps are deeply involved in political processes as they can reveal social power structures as well as social and urban inequalities. This also holds for *Leerstandmelder:*

The 'Leerstandmelder' serves as an important component in public relations, in times of increased urban spatial pressure, the vacancy problem needs a greater attention. Not only local residents will become more aware of the existence of vacancy, but the topic can generally be carried into the urban or political discourse. Additionally, the owners will also be reminded of their responsibilities, since according to the 'Grundgesetz' [German constitution] property entails responsibility.

In later discussions the objectives of the collective became clear. Through its surveys, *Leerstandmelder* has become an essential tool of argumentation, it firstly provides figures and visualizes vacancy:

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[26] Cf. figure 4.

[27] The absence of standardized instruments to obtain differentiated knowledge of the total amount of urban vacancies is a problem already mentioned above. The scarcity of data is a great disadvantage in planning urban development. Cities generally do not adopt mapping efforts or vacancy registers, they neither register which spaces are empty and in principal available for use. Although according to Höffken, Memmel, Vollmer and Noll (2015, p. 30) "web-based technologies offer completely new possibilities for the extension of 'classic' methods. The platform 'Leerstandsmelder' enables the collaborative detection of vacancies through crowdsourcing. It furthermore offers the opportunity to complement municipal data". The incorporation of this collaboration of online mapping into urban planning processes could lead to a fruitful and future-oriented management of vacancies for meaningful use.

Basically, the 'Leerstandsmelder' is a mapping tool but also a vehicle to provide arguments. Just think about on which basis decisions are taken, mostly on figures, data, and facts and those are collected by the crowd of the 'Leerstandmelder' and then presented to the city officials.

Secondly, they also introduced the *Leerstandmelder* in Mainz to invite other urban initiatives to take up the subject of vacancy and to build political pressure. The collective knowledge of the bottom-up cartographic practice of *Leerstandsmelder* stands in conflict to the aforementioned institutionalized top-down mapping of the retail monitoring of Mainz. Through the integration of knowledge of any participant of the mapping process *Leerstandsmelder* creates a critical counter-position against the assertion that in Mainz there are hardly any vacancies and opens thereby, as I will show below, a starting point for political discussions at everyday street level.

Everybody, who wants to make a difference, can join and can do something to create pressure and start a political discussion. The problem is that there are many people working in 'Right to the City' initiatives and they are well-informed but at some time we all work fragmented and everyone treasures his own style and does his own thing. Now, with this platform we can work together, we can expand the community to collect more vacancies in Mainz, but mapping vacancies by all means isn't the goal, either. It's about using the 'Leerstandsmelder' politically, because if the city council or the local authority real estate office says: 'Vacancy is a problem we don't have' but at the same time, red dots pop up on a map, this makes a difference and as a consequence, all groups can claim open spaces, affordable rooms and new ideas of usage.

Relating to this topic, another *Schnittstelle5* member describes a similar point of view because the *Leerstandsmelder* as a map alone cannot make much of a difference. While the way it is used depends on people's different situations and locations, but it can definitely make a difference when used appropriately:

In a booming town like Mainz, which has had thousands of people moving in over the last years, where housing is scarce, rents are rising and people are driven out, the 'Leerstandsmelder' becomes an important political tool.

The impact of such maps on the local government can be seen after *Schnittstelle5* made a complete overview of vacancies in Mainz. After their mapping and charting of all 130 vacancies at *Leerstandsmelder*, a press release[28] was published to reinforce and strengthen the political pressure on the local government. Two weeks after the press release, a newspaper article[29] discussed the map. The mapping initiative became a huge topic of conversation in Mainz. The local government answered immediately.[30] They promised to take up dialogues and discussions with the urban collective to find solutions for vacancies, to discuss what options are available to convert vacant spaces into cultural or other purposes. Crucially, the

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[28]http://schnittstelle-mainz.de/pressemeldung-schnittstelle5-kartiert-alt-und-neustadt-rund-130-leerstande-erfasst/

[29]http://www.allgemeine-zeitung.de/lokales/mainz/nachrichten-mainz/130-leerstaende-mitten-in-der-stadt-verein-schnittstelle-5-hat-die-unbenutzten-flaechen-in-der-mainzer-alt-und-neustadt-erfasst_15504019.htm

[30]http://www.allgemeine-zeitung.de/lokales/mainz/nachrichten-mainz/lob-fuer-schnittstelle-5_15556455.htm

power of the map did not reside in the map itself but in the ways maps were used and positioned by the crowd. Crowdsourcing and online maps in connection with the use of other media as communication tools have the potential to not only position one's own argument but as well to interfere into urban processes and to bring to a round table the owners of vacancy, political decision makers and local governments, the local residents and the urban collectives.

As a preliminary conclusion, it can be noted that urban collectives establish models and tools, such as temporary use and online mapping platforms to discuss the topic of vacancies on a political level. As illustrated, they do not only map the empty spots, moreover they use this knowledge of facts and figures to create pressure on urban policies and administrations to finally introduce desired measures to open vacancies and to make them available for an affordable, socially sustainable and cultural use.

Conclusions: Urban movements, collective critical online mapping and the city

This article has discussed strategies of urban collectives against vacancy and observed in which way the new services of web 2.0 and geoweb are interconnected with the city. Thereby, I raised the following questions: In which way urban collectives against vacancy participate in urban development and which influence do they have through their demands and strategies? I further asked which possibilities and potentials urban collectives see in vacancy?

As shown, collectives of social urban movements in growing cities or metropolitan areas criticize real estate vacancies and raise questions about their potential and possible uses. The use of vacancies serves to relieve spatial-economic pressure, they function as inexpensive spaces of possibilities. For activist groups in Germany and elsewhere, vacancies and unused spaces besides rising rents are specific urban problems and important urban spatial aspects. These conditions must be understood as mobilization trigger factors. Vacancies are used as a means and starting point for the enhancement and revival of urban life and to intensify social and cultural activities. Accordingly, such urban collectives specifically aim to influence social and cultural life, urban regeneration and urban policies, and, as I could demonstrate, political pressure and interventions in the urban space depend on their motives and strategies and of the respective local dynamics of high rents besides vacancies.

In addition, as Georgiou (2013, p. 142) writes, that for those urban struggles "the visibility offered by the physical space of the city is no longer enough". This article placed a particular focus on critical collective online mapping of vacancies and on the new possibilities in web 2.0, too. In this context, I investigated which effects the critical online mapping of vacancies can have and for what reasons urban collectives use the crowdsourcing platform *Leerstandsmelder?* How can web 2.0 and geoweb change the appropriation of urban space by means of voluntary collective critical online mapping?

I have demonstrated that the collectives use the potential of crowdsourcing and voluntary online mapping platforms to achieve their broader goals. In the case of Mainz, the visualization of vacancies illustrates the demands of the mapping crowd and *Schnittstelle5*. Together they call for new political action measures against vacancies. In contrast to the mentioned top-down assertions that in Mainz are hardly any vacancies and that anything cannot be done to support and to give space to social, cultural or non-economic activities, the collective web 2.0 maps visualize the opposite: There is plenty of vacant space for meaningful use. *Leerstandsmelder* serves as a component of classical mapping, public relations and

information efforts and as a tool to encourage an urban policy discourse about inner-city resources and open spaces. Thus, social urban movements are sustained through Internet communities, too, by carrying their content-related issues into the digital networked space. The web presence provides essential functions in the struggle for inner-city spaces and vacancies, the crowdsourcing platform plays an important role in the visibility of vacancy and in the appropriation of urban space. As Georgiou (2013, p. 142) puts it: "The urban street is revived and extended to the global mediated street. It is in the continuity of the physical and mediated urban street that presence, as a strategy, as a tactic and as the inevitable politics of the *other* in the city, makes sense. The politics of presence depends on the merging of the grounded physicality of protests and conflict as much as on the sustainability of protest through its mediated representations".

Those entanglements of vernacular bottom-up online mappings of the city have to be included or incorporated into the discussions and findings of the interrelation of media and the city. As mentioned, Georgiou (2013, p. 146) proposes three versions of cosmopolitanism of which two are of particular interest for my considerations. She understands *vernacular cosmopolitanism* as "the response to neoliberal cosmopolitanism at street level" and furthermore, she defines *liberatory cosmopolitanism* as a shift in "the balance from being primarily about experience to being about vision. Liberatory cosmopolitanism represents a progressive cosmopolitan politics which starts from urban encounters, but which raises questions about the significance of difference in advancing equality, recognition and redistribution". Although this version of cosmopolitanism "is rarely seen in practice" (ibid.), she concludes that "liberatory cosmopolitanism (…) becomes possible at the meeting of media and the city" (ibid.). In that sense, it would be fruitful to study similar critical crowdsourcing platforms and geoweb pages[31] on a wider geographical scale and academic context to figure out more about the connections, interdependencies and complexities of collective online maps and the city. The results of studies such as this article give us a feedback about spatial experiences on a street-level, daily lived inequalities and power relations of contemporary urban space.

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[31] As a way to emphasize the broader applicability of my analysis, I will provide a brief excursion through other critical online mapping projects throughout the world. On the topic of squats there can be mentioned *Berlin Besetzt* (engl.: Occupied Berlin; http://berlin-besetzt.de/) or the *London Squats Archive* (http://londonsquatsarchive.org/). Both are interactive, illustrated maps and crowdsourcing platforms that include detailed information like newspaper articles, photos and texts about the histories of single squats. Here, with the help of interactive maps and digital archives collective and self-managed spaces get more visible in the city. Another 'movement' on the Internet can be found in relation to *Airbnb.* These pages are mostly independent, non-commercial and open source critical mapping projects, like *Airbnb City Maps* (http://tomslee.net/airbnb-data) or *Inside Airbnb* (http://insideairbnb.com/). Available for different cities they raise the questions of how *Airbnb* is being used in and affecting the neighborhoods of cities. How many apartments are rented out for tourists and not for local residents and how much money the hosts make more by renting to tourists in comparison to long-term rentals? With these maps actors question to whom the city belongs and if we want to live in cities for people or for profit (cf. Brenner, Marcuse & Mayer, 2012)? On this topic, the *Anti-Eviction Mapping Project* shows multiple maps and layers on collective resistance and movement building processes in the city of San Francisco (http://www.antievictionmap.squarespace.com/). There, the contrasts between the proliferations of vacation rentals through *Airbnb* and homeless people is scrutinized next to many other urban topics and dynamics like gentrification, displacement, eviction and the public space.

As also demonstrated in this article, contemporary crowdsourcing and mapping technologies can get deeply involved in the dynamic production of urban space. To refer back to my theoretical considerations, I state that bottom-up cartographic practices of crowdsourcing and online mapping platforms are acts of appropriation and retention of power. By web 2.0 mapping practices of urban circumstances and phenomena, the mapping crowd is able to take possession of the external and internal power of maps. Those maps are the result of strategic considerations to influence, act against or prevent certain social urban developments or economic and political inequalities. Thus, they provide and push forward alternative perspectives on urban space and they have the ability to undermine power structures of urban policy and administration to shape and to achieve social urban change. Accordingly by producing, articulating and deploying the perspective of web 2.0 maps, urban actors bring up critical contents or 'realities' in order to confront political leaders with their view on urban space.

To conclude, online platforms and web 2.0 mapping technologies should not be considered as 'simple' devices for visualizing maps and topics on urban space, they have something to say. They can be one (critical) tool serving as an instrument for collectives and movements to strategically make their issues and demands a subject of discussion. To link back to the German-wide phenomenon of the triangular relationship between vacancies, urban collectives and the online crowdsourcing platform *Leerstandsmelder*, I could show that urban collectives pursue a dual strategy by adopting bottom-up tactics that have a significant influence on urban space both in terms of the physical material urban space and the mediated urban space in the field of web 2.0. Additionally, offline strategies are pursued by using online maps. By this means, urban collectives approach the topic of real estate vacancy from two sides. I have referred to this as online-offline strategies of urban movements against vacancy. The appropriation and usage of georeferenced online services has far-reaching consequences for the appropriation and usage of urban space. Promisingly, web 2.0 crowdsourcing maps have the potential to give power to the people. Urban collectives and online actors are powerful, they have to be regarded as political entities as they create new urban realities and also designate specific geographies.

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