OpenStreetMap: The Meaning of Being Involved in Mapping and Navigation

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Submitted to
Central European University
Department of Sociology and Social Anthropology

In partial fulfilment of the requirements for the degree of Master of Arts

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Budapest, Hungary
2010

Abstract

This paper discusses the collaborative production of ‘standard’ cartographic knowledge and the way it inflects functionality and perception of a traditional map. The ethnographical investigation of the “OpenStreetMap” wiki-style mapping project is in the core of the discussion. The analysis of motivations and mapping practices of the volunteers opens the possibility to see how the ‘standard’ cartographic form can be re-appropriated by investments of the ‘embodied’ and ‘local’ knowledge. At the same time the fact of the possibility to re-appropriate retrieves the abstract and objectifying form of the traditional cartography as it finds itself compatible with emotional and cognitive engagements.

Table of Contents

Introduction

Technological development has brought new tools to deal with space-related information, and has brought them to a large number of people. That has democratized cartography, and, at the same time, blurred the definition of what the map and mapping may be. The cover page for the writings on 'Emotional Cartography' (the Christian Nold's methodology for visualizing people's emotional reactions to the external spatial world) (Nold: no data) can be an illustration of this unspoken agreement on the multiple natures and possibilities of a map. It presents a map in the form of the Rorschach test: a map is what you personally project on its surface. Not taken philosophically, but as a manifestation of the tendency, it shows the move towards alternative forms of representations and expressions: farther from the normalizations, rationalizations and objectification of scientific-like maps.

Geographical knowledge tends to incorporate personalized information, narratives, reflections, markers. This not infrequently aims to exhibit the local knowledge. For instance, it happens when the initiative is to map (record in any form and localize on the map) the personal stories of residents of some neighbourhood. Along with such distinct projects there is a broader 'project' of applications that allow people to personalize and customize maps in their everyday lives. Due to the advances of Web 2.0 functionality, to create and to share the map, mashups[1] have become a trivially easy task. The Google My Map (2007) service, for instance, allows annotating a Google Map with locations, routes, areas that the user personally wants and needs.

The increasingly popular participatory use of mapping tools allows the pursuit of alternative knowledges. The immediate question to ask is what these 'alternative knowledges' are and if they are necessarily external to the layer of the 'standard' (aimed for the customary navigation) cartographical information. Significantly, today it *is* possible for common people to manufacture a basic map and to do it collaboratively.

[1] Mashup (map hacking) is the practice of exploiting mapping applications or combining one site's functionality with another's.

Such a possibility and the outcomes of its realization are capturing. The fact that 'rational' and 'normalized' cartographic knowledge is being collaborative produced makes a difference in two major aspects. First, this way of production inflects the status, functionality and perception of the standard geographical knowledge, – so that it can be seen as an 'alternative' without being 'personalized', 'subjectivized', and even seemingly 'local'. Second, it retrieves the standard cartographical knowledge in its intention to be objective and rational, pointing at the possibility that this form can be re-appropriated in the course of life practices.

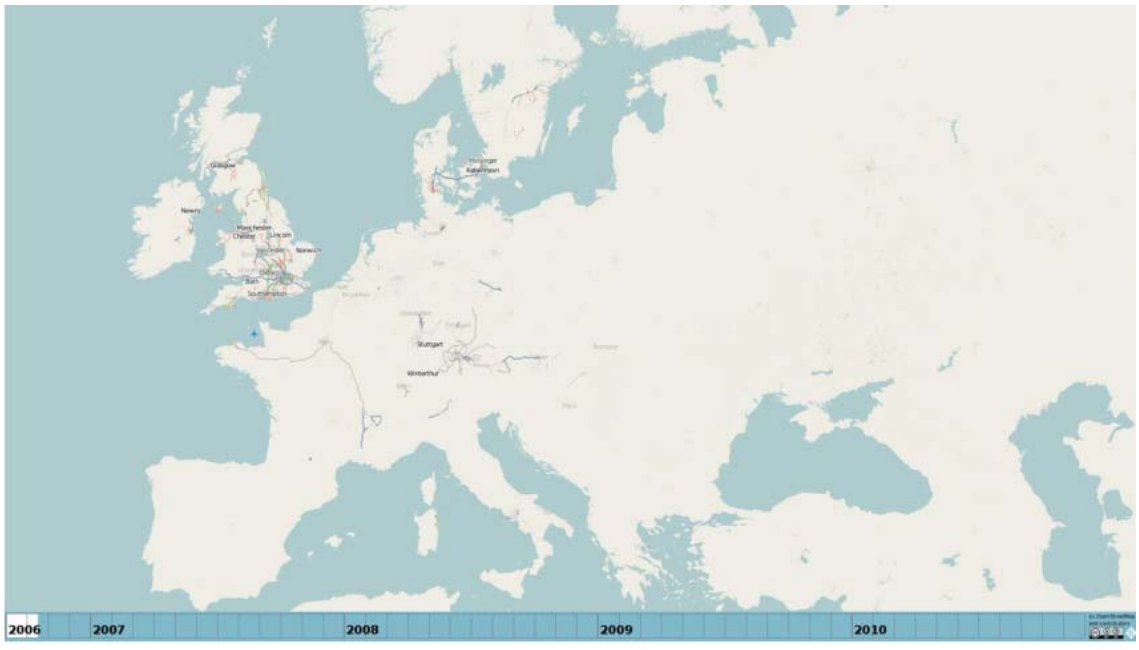
The consequent argument is that this re-appropriation of standard cartographic knowledge is possible only on condition that the form itself tolerates 'participation'. That means that to find a source of alienation of traditional cartography from everyday practices in its rationalizing, objectifying and abstracting form is somehow to miss the point. Theorization of the collaborative mapping helps to make such implications about the non-participatory cartography, while analysis of the 'critical' theories on the latter helps to highlight and re-think the points of difference in the newly emerged field of participatory mapping.

These points are those of 'local' knowledge and 'embodied' knowledge. In the context of the participatory production of a standard map they gain different directedness, not conflicting with what is assumed to be formally 'global' and 'abstract' knowledge. The attention is, thus, transferred from the *form* to the *action*. By using in the title 'being involved' I accentuate this state of action and engagement. That is an engagement in the mapping process itself, but also in maps as representations, and (as a reverse side of mapping) in navigation.

In collaborative mapping, projects mapping and navigation go together (write/read wiki principle), in OpenStreetMap they come together even closer as the mapping process frequently happens on-site and presupposes wayfinding. The major role of on-site mapping is among the specificities of the project that make it theoretically appealing in the stated context as far as it becomes explicitly visible how the abstract and objective knowledge appears from local urban exploration, movement through space and its embodied cognition.

So, the OpenStreetMap (OSM) project is a successful example of how the basic map can be created and maintained by volunteers. The simple description often given to the project is 'Wikipedia of mapping'. It is good for getting the primary idea of what the project is in terms of open-sourcing (copy-left, data available for any further usages) and crowdsourcing (control maintained by the community). Still, OSM deals with spatial data which make it different from Wikipedia on a number of counts. I am less interested in the ideas of open-source movement and the mechanisms of collaborative work, and more in the way OSM deals with space and its cartographical representation, but sometimes these aspects are hardly separable, so I am going to address them too.

The movement that outlined the OSM world-map project was initiated in 2004 in London by Steve Coast. "The project was started because most maps you think of as free actually have legal or technical restrictions on their use, holding back people from using them in creative, productive, or unexpected ways."[2] By now it has around 400,000 registered users with more then 5% of them active[3]. The time lapse video on the evolution of the European OpenStreetMap coverage from 2006 to 2010 (Stills – Fig.1) shows how the map was created gradually from the digital 'blank paper'.



[2] http://www.osmfoundation.org/wiki/License/We_Are_Changing_The_License
[3] Statistics on OSM: http://www.openstreetmap.org/stats/data_stats.html

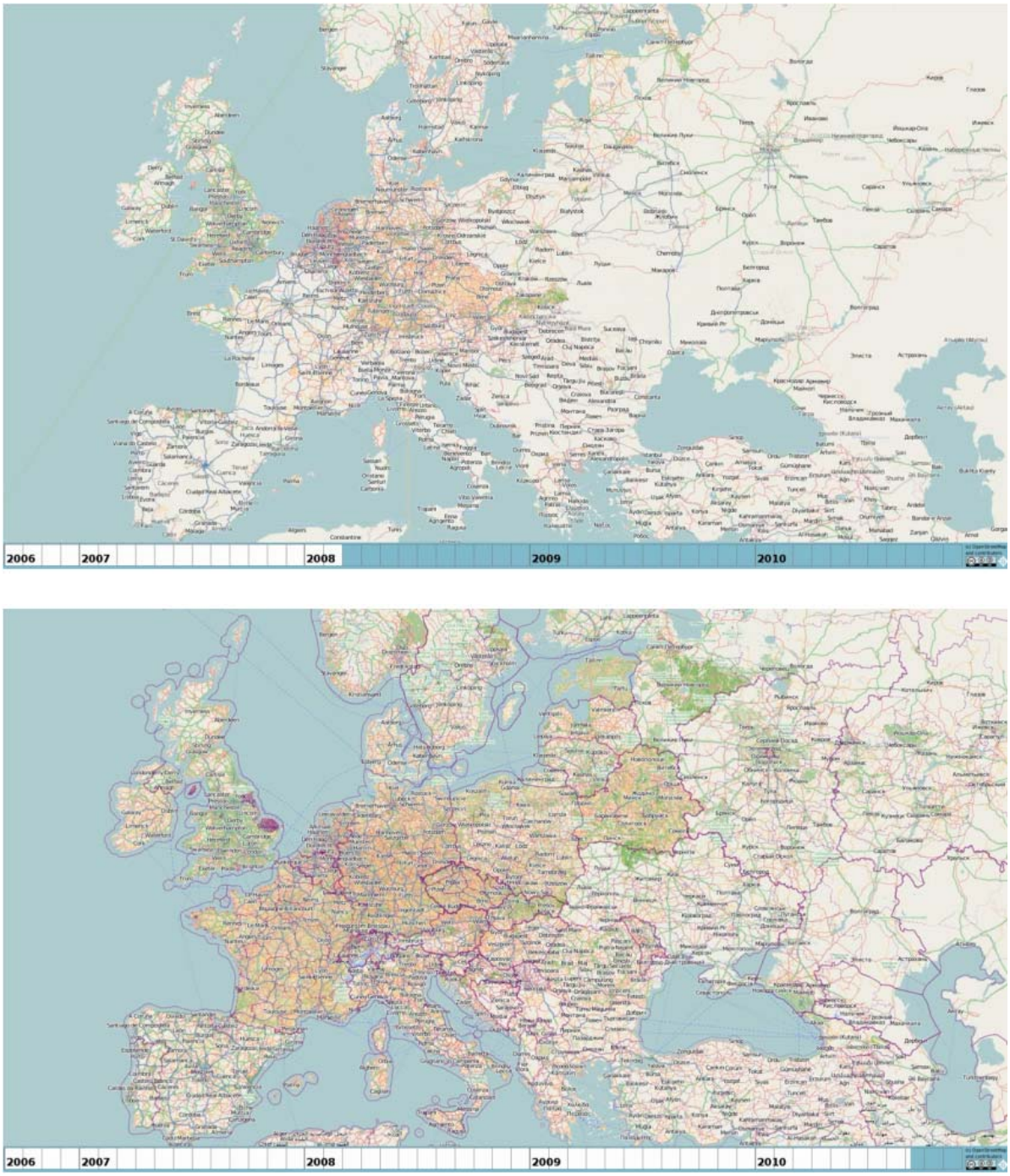


Fig.1 Evolution of European OpenStreetMap Coverage. (Video) http://vimeo.com/16146087

At a very beginning the only way for the participants to get basic spatial data was through the GPS tracks of their walks and rides. Many contributions are still the result of a physical local survey by users with GPS units walking/cycling around and taking notes. The part of the cartographic information though is now produced by drawing over the aerial images donated to

OSM. There are also the bulk imports of official cartographic data.[4] These imports can be noticed on the above mentioned video in the better coverage for the number of countries.

Multi-sourcing is logical for such a large-scale project. This circumstance is theoretically appealing as it gives the possibility to see how the processing of this multi-layered data is being negotiated and what the dynamic inter-relations between the official and un-official, pre-given and newly produced knowledge are. That also differentiates OSM from other projects open to contributing the basic spatial knowledge like Wikimapia (2006) or Google Map Maker (2008). They are not oriented on processing GPS tracks and the issues related to getting the 'big data' are not managed there by the community. The fact of dealing with such issues, along with the fact of contrasting OSM to the mapping resources with license limitations, have an impact on the OSM community and contributors, making their positions and practices more explicit and researchable.

Concerning the theoretical writings on the project, we can say that there are no systematic investigations. The project is, though, not so infrequently mentioned in literature that theorizes the modern state of cartography. However, usually, just one aspect is depicted to exemplify the issue (crowdsourcing, open-sourcing, etc). For instance, in the context of broad discussions about the potential of 2.0 Web (Gartner 2009) OSM is equated to Google "mashups", despite the difference in license issues and in practices. No line between OSM and Google, these "current trend towards mapping the world at all scales", might be drawn also from the perspective of professional cartography with regard to their "unpredictability" (Witschaz 2010: 171).

Despite only a few superefficient mentions of OSM in the articles in *Rethinking Maps. New frontiers in cartographic theory* (Dodge, Perkins and Kitchin 2009), the book is important for getting the general theoretical direction. "A manifesto for map studies" in the very end of it outlines the directions that , according to editors' vision, are currently worth studying. The relevant work for me is a 'track' of studying the *change in authorship of maps* (2009: 226). Open-source mapping alternatives make us think of mapmaking as social activity and of maps as practices, not end-

[4] OSM data sources: wiki.openstreetmap.org/wiki/Potential_Datasources

products (a map tells of its own manufacturing). The related significant 'track' is of the *memories of the moments mapping*. It is even illustrated by OpenStreetMap as 'made of' the individual mapping stories (2009: 237). One more suggestion on OSM is *ethnography* – "studying key activists thought participant observation of mapmaking work" (2009: 231). My ethnography of OSM combines these suggestions.

It is important that Dodge, M., Kitchin, R., Perkins summarize the tendencies and articulate the need of examining how maps *become* (in practices) instead of seeking to understand how maps *are* (by nature) – a principle originated in 'non-representational' theory (see also Del Casino and Hanna 2006). From the 80s there is a tendency to treat maps not as unified representations but as constellations of ongoing processes, produced and used through multiple sets of practices. It presupposes the map reader to be as important as mapmaker (he not just decodes encoded information, but employs/invests meanings), and both to be situated within particular contexts where knowledge is operationalized.

To acknowledge active participation on the side of the user and the possibility to contextualize representation are the two interrelated ways to overcome the critique of maps as statically attached to authority and detached from everyday practices. Still, attention to the activeness of 'consumer' does not guarantee this. For instance, in Certeau's (1984) discourse that highlights users' active role in dealing with products of culture a cartographical product is still as alienated as abstract representation can be. Similarly, Ingold (2010), whose general emphasis is on embodied 'practicing' of the tools, does not see such a possibility in relation to standard maps. Contextualization might also be insufficient. Even seen as necessarily by critical theory (Harley 2001, Wood and Fels 1992), it is not performed by the user self-conscious of his position, but rather by the researcher.

The possibility to gain less detachment (more participation and self-consciousness) is seen frequently in applying the methods of alternative, remarkably qualitative and qualitative-participatory mappings (Cramton 2010). This tendency is, for instance, explicit for feminist GIS (Kwan 2002) where such alternative ways of looking are associated with subversion of the

objectifying male gaze. Not necessarily ‘attributed’ to male, these alternative knowledges as a receipt might be of simply a local and geonarrative nature (think of Certeau or Ingold). People’s experiences, their movements and actions are returned to the maps only when its form is subverted.

Re-production of standard (formally un-subverted) knowledge might be seen as not radical in this sense. But if we re-think critical cartographic discourse and the ways in which mapping is related to geographic imaginations and bodily processes through space (as Dodge, M., Kitchin, R., Perkins suggest), then it is possible to see that ‘subversion’ of objectified representation happen through the practices of participating in it.

I take the notion of ‘participation’ as a broad one, equating it to ‘involvement’. It presupposes both the emotional/cognitive involvement and the actual involvement in some sort of activity (in our case mapping and navigation). It also states that they are inseparable (similar to Ingold’s ‘skilled practice’). The structure of my work is subordinated to these ideas. The two chapters titled ‘Motivations’ and ‘Practices’ are called to highlight two sides of ‘being involved’. The first is more about the possibilities for the cartographic representation to become a site for active participation and the preconditions necessary for it. I show how in the case of OSM this possibility becomes more explicit because of positioning oneself among spirits, tasks and principles of collaborative mapping. The second chapter is more about the patterns of the realization of such possibility that brings embodiment and abstracting together, not letting the practice of mapping as well as its outcome be detached from everyday practices and experiences. The chapters follow one another much because of the nature of the subject. They both start the discussion from broader theoretical issues to establish a framework for addressing the results of ethnography.

Methodology and Sources

The research focused on OpenStreetMap can be based on Internet data. It is logical that OSM is largely represented online: where the map is edited. I started my research by checking the information on the wiki page of the project[5] read the main OSM forum[6], browsed relevant blogs and got familiar with the mailing lists where many of the discussions take place.[7] After the registration on the main site of the project[8], I also got access to the users' diaries and the history of mapping edits. That all became the important source of information for my research. Nevertheless, that was not enough – or rather was *too much* in a certain sense, because in this mixed and multi-layered environment I could not define the personal trajectories of the users.

The diary section gave me some preliminary insights. I often came across there with a certain sort of personal-related content. Users (especially the newcomers) were writing about their expectations, plans, and the work done. It was interesting to read about their experiences of GPS-tracking in the city: some comments were rich with emotionally-marked details and related to adventures and personal discoveries. I realized, though, that the number of users keeping diaries is not proportional to the general amount (later, I found out that none of my interviewers keep an OSM diary). Nonetheless, it sounded promising to me that it is possible to relate production of GPS-tracks to the production of narratives and put it in-between personal travel stories and the need to apply and generate systematic knowledge. I was putting hopes upon the intensive personal observation and walking interviews with the informants.

I still believe in the theoretical potential of this angle, but my fieldwork gave me little material to work with in this direction. First, there was no opportunity to make a participant observation of the mapping on-site (none of my interviewees planned to do it at that time). Second, the mapping experiences of my interviewers and topics they were eager to talk on were diverse.

[5] http://wiki.openstreetmap.org/wiki/Main_Page
[6] http://forum.openstreetmap.org/
[7] http://lists.openstreetmap.org/listinfo
[8] http://www.openstreetmap.org/

Under these circumstances I decided to conduct a series of semi-structured and unstructured interviews – still staying within the borders of the topic, but letting my interlocutors discuss different aspects. That gave me, I think, a rather deep feeling of the field, despite fewness of the contacts.

So, in the framework of my empirical research I met the OSM contributors personally. That happened in Utrecht and in Kyiv (the beginning and the end of April 2011 respectively). My choice of Utrecht was due to the fact that in the Netherlands there is one of the most active OSM communities on the West-side of Europe, where majority knows English well. My choice of Kyiv can be explained by the fact that I know my hometown well, and the rather optimistic Western case needs to be presented with a sort of a shade balance.

My method of choosing people to talk to and of getting their contacts was explicable and easy. I mailed to the users that created their profiles on the wiki national sub-pages of OSM (not all of contributors do it). Three persons from ten in Utrecht agreed to meet me. One more significant personality was introduced to me by one of my informants, and one more was reached through personal contacts. Finally, I conducted five interviews (in Utrecht and in Amersfoort). One of them was accompanied by participant observation of the editing work in the Potlatch 2 map editor. One more ended with the walk interview in the center of Utrecht where the Mapping Party[9] in 2010 took place. In Kyiv the reply rate was higher, but I had a chance to meet with only one of the informants, with four others I had written and Skype interviews.

The age of my informants in both countries ranges between 25 and 50. Contingently, it might be said that they belong to the middle class and are educated (IT or cartographical schools). All of them are male, as well as the overwhelming majority of contributors are. There is no statistics on participants in the project, but my informants on the basis of their personal experience confirmed my observations about the dominant social pattern within the movement. I find this fact important

[9] During Mapping Party a group of people (usually 10-15 that make sub-groups of 2-3) comes together to map some territory. As a rule it involves going out to collect data and adding it to the database afterwards. Mapping Parties are often organized by experienced mappers to help novices to get to know the process of mapping and/or to simply map a region that is yet uncompleted. It's a very social event where people can meet up and talk in between mapping sessions. For more information see http://wiki.openstreetmap.org/wiki/Mapping_Weekend_Howto

in discussion on engagement in maps and mappings, but it deserves more focused analysis than I can suggest here. Just to note, the issue is partly related to the unequal access to technology and knowledge how to use it – phenomena of so-called 'digital divide' (see Crampton 2010). But the fact that one is handy with computer does not implicate that one finds it interesting to participate in the collaborative mapping project of an OSM kind. And you do not necessary need to have access to navigation/computer technologies to contribute[10]. So, to focus on gender and class issues are among the tasks for the further investigations.

The major part of the information that I got from the interviews might be, if strongly desired, found on the web, but in a too fragmented form to become a part of the coherent 'embodied' mental map. Together with knowledge that I gained from other sources, my interviews provided me with consistent base for the research in a chosen direction. Among the other (blogs, diaries and forums) sources that I use are the visual materials that represent the project and one of the self-representative books *OpenStreetMap: Using and Enhancing the Free Map of the World* (Ramm F., Topf J., Chilton S. 2010), which is a guide to OSM and technical manual for actual and prospective contributors.

[10] You can, for instance, print a walking paper (map for mapping), draw/write on it and then scan it back to OSM. http://walking-papers.org/

Chapter 1: Motivations

Is there is life on Earth? (compatibility of embodied knowledge and global perspective)

If we take the notion of 'involvement' broadly, it would be imperfect to start thinking of people's involvement in the collaborative mapping project right from their actual participation. Before that we need to think of how cartography, as a project of the modern age, can be a site for participation. In other words – to check the potency of cartographical representation to become the source of engagement, in spite of (or thanks to?) its totalizing and globalizing character.

The dialogue with the critique of cartography is presented in Amy D. Propen's article (2009) in which the author states that cartographic representation *can* produce embodied knowledge. She examines the potential of GIS in this respect, but it also has relations with traditional cartography. The theoretical reception of GIS laden with criticism is in a large measure sourced by long-lasting accusing spatial sciences of producing the subjects of 'totalizing' vision. With the advent of GIS this critique was just given a new turn, because newly produced images tend to 'appropriate' reality itself. They are the "high-tech global images that construct the world-as-exhibition" as Derek Gregory (1994: 65) puts it. Or, as Donna Haraway states, the practices of contemporary visualization objectify the way of knowing and offer the transcendent, mobile vision – "the godtrick of seeing everything from nowhere" (Haraway 1992: 189). Obviously, the representations are produced from 'somewhere', but the producers are accused of hiding the developmental platform.

We can understand the problem of the hidden conditions of production as following: out of the possibility to define (and identify with) the 'human' viewpoint of the image, there is no possibility to take up the live attitude toward the reality represented. The lack of the engagement is, thus, the result of misrecognition of the direct ties between the image, the reality it represents and the reality of the viewer. By assuming that a particular type of representation produces the knowledge disembodied by default, we risk to divorce the spectator mechanism and the mechanism

of participation. That is what Tim Ingold (2000) does in his discussion of modern cartographic representations. He states that the world scientifically represented from the above turns for the viewer into a spectacle – a disembodied space which humans themselves are never conceived to be a part of. (2000: 209-217). Ingold does not discuss GIS. Still, the logic of accusation is similar: the 'local' and the 'global' perspectives are being confronted. 'Global' for Ingold is about seeing from a no-where platform 'above' the world, 'local' is about living and acting 'within' the world – these perspectives are mutually exclusive.

The geographical image of 'planet Earth' is a significant example for Ingold. He says that lacking the agency of the observer it is about to bring cognitive recognition, but not sensory attunement. Being the inscription "upon the outer surface of the world by the mind of the perceiver" it does not possess "the relational context of the perceiver's involvement in the world" (2000: 213). Maintaining this line of argumentation Ingold describes even an exceptional case when the astronauts perceived the planet Earth from space: "The astronaut's relation to the real globe seen through the window of the spacecraft mirrors the schoolchild's relation to the model globe in the classroom: in both cases the world appears as an object of contemplation, detached from the domain of lived experience." (2000: 210).

Interestingly, Propen also addresses the image of Earth in her text, but her inferences are dramatically different. Propen uses the well-known NASA photograph 22727 of the Earth (1972) – a product of spatial science technologies and an object of cartographic practice – to argue that even the image that literally depicts a view from above may invoke "a view from the body" and become a stimulus to cognitive and emotional engagements. The trick of switching to such a regime of seeing it is in 'recalling' the mechanism of knowledge production. Literally, there were few humans on board that witnessed the globe and who produced photo 22727. For Ingold this 'exceptional case' was not exceptional and, obviously, did not possess a potential to lead toward "a very specific sort of local, embodied knowledge." (Propen 2009: 124).

To theorize the case and complicate the idea of 'totalizing vision' Propen uses Haraway's idea of the partial perspective. Haraway admits that the technological mediation and embodiment

can work together when the practices of production are unveiled and the representation, even a global-like one, is taken as partial. The partial perspective in this case is more than the manifestation of relativist position. It makes the viewers more fully accountable/responsible/critical of what they see and, thus, promises objectivity (Haraway 1992: 190). The aim to be 'correct' in the cartographical representation of the physical world, as Propen significantly concludes, is not necessarily to be understood as part of the positivist project – it might be seen as objective (in a Haraway's sense) as soon as taken from a partial perspective.

Propen's examination of the potential of GIS to convey partial perspectives and to engage the viewers is not related to the viewer's engagement in the physical production of the image. Still, if the partial perspective can be achieved through drawing out the 'developmental platform', it is interesting to see how this mechanism works when the 'developmental platform' is itself the subject of representation in GIS.

The animation "OSM 2008: A Year of Edits" (stills – Fig.2) shows the edits and uploads made by some 20,000 individuals in 2008. It is organized in a similar 'universal' way, seemingly employing 'nobody's perspective'. The viewer moves from the black surface covered with the network of lightened lines (pathways and roadways) to the model of the globe which is also irregularly dappled by them: the globe is rotating and the new lines and surfaces systematically flash up every here or there.

Fig.2 OSM 2008: A Year of Edits http://vimeo.com/2598878

There could be no real perspective of the producer (opposite to the NASA photo) because the image is modeled. But the viewer's 'partial perspective' might appear as a result of considering the context.

To know that the flash-ups are the result of the activity of thousands of the participants is not enough, though. To be embodied for the localized viewer this visualized data of editing activity should demonstrate a certain measure of localization, relation to the real space. In the clip the data is presented over the modeled spatial layers and stays in relation to the product of the activity which

is a map. If we were not familiar with the idea of the project, it would be impossible for us to say whether the real geography of the users is related to the 'locations' of their on-line editings. By using the satellite images and editor programs it is not difficult to add data to the map of the place you have never been to. There could be a group of people sitting in the office in London for some reason mapping Australia, so that the flashes of activity in Australia are not related to the original place. The edits in OSM can also be made remotely by using aerial imagery or out-of-copyright maps, but that is the issue of gradations: OSMers prefer not to map foreign regions. First, because they are much more interested in their own regions and would preferably deal with the spatial information familiar and necessary for them. Second, because in mapping of what you know you can be more precise and objective'. Evidently, there is an actual connection between representation and locality in OSM: when seeing the animated line lightened in Australia we can be quite sure that the modification is done by the user from the local chapter.

The territories of data imports are also noticeable in the animation. For the viewer they might seem to appear from 'nowhere', but these lightened areas are also subject-related, as soon as all the imports are processed by the community and edits are made over the provided data.
The fact that GPS tracking is usually the part of the on-site mapping "grounds" the animation even more: many of the flashing lines in it are the GPS trajectories of the real ways that were undertaken.

As mentioned already, mapping in OSM can be done over the layers of aerial images (donated by Bing and Yahoo and available not for all territories). It is interesting how these aerial representations (these 'appropriated' by GIS physical environments) still stay in connection with the body. Indeed, all the edits made on the basis of personal spatial knowledge can be seen as connected to the bodily spatial experience, but the connection user-territory-visualization is presented in a more spectacular way when the GPS track is put over the image. The animations of GPS traces made during a mapping party in Leeds (stills – Fig. 3) may serve as an example. There the trajectories of the participants (colored differently) are displayed over the aerial image of the city. The time line is taken into consideration, so the tracks are progressing in the way the participants walked/cycled in the real environment.

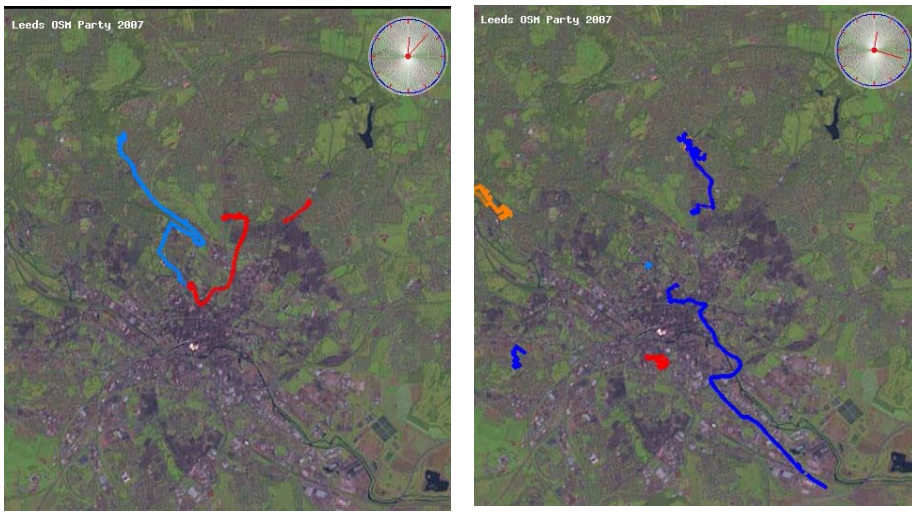
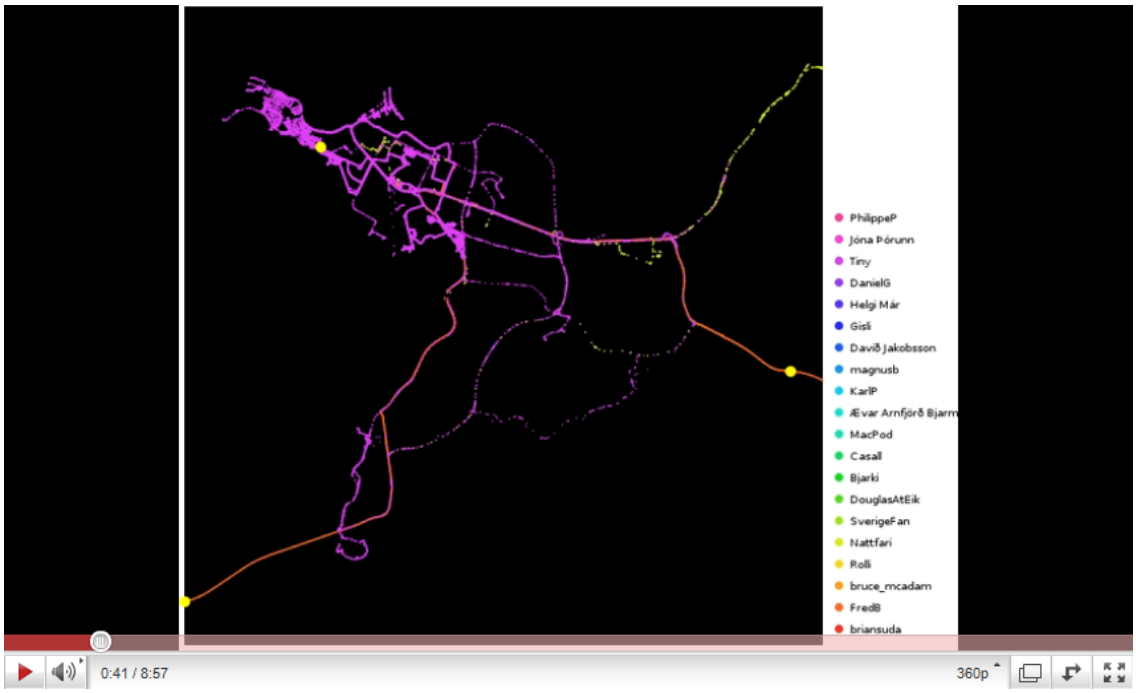


Fig 3. Animation of GPS traces during the Leeds mapping party (2007)

http://old.opengeodata.org/2007/10/02/animations-from-leeds/index.html

In this animation tracks do not join into a coherent network, they just appear, last and vanish – mirroring the real movement and fact that nothing really changed on site. The mapping party in Reykjavík and suburbs (also 2007) is presented differently (stills – Fig.4). It is a collection of GPS tracks also colored accordingly to the users and also appearing chronologically, but they do not vanish. They last and together make up a network of the routes.



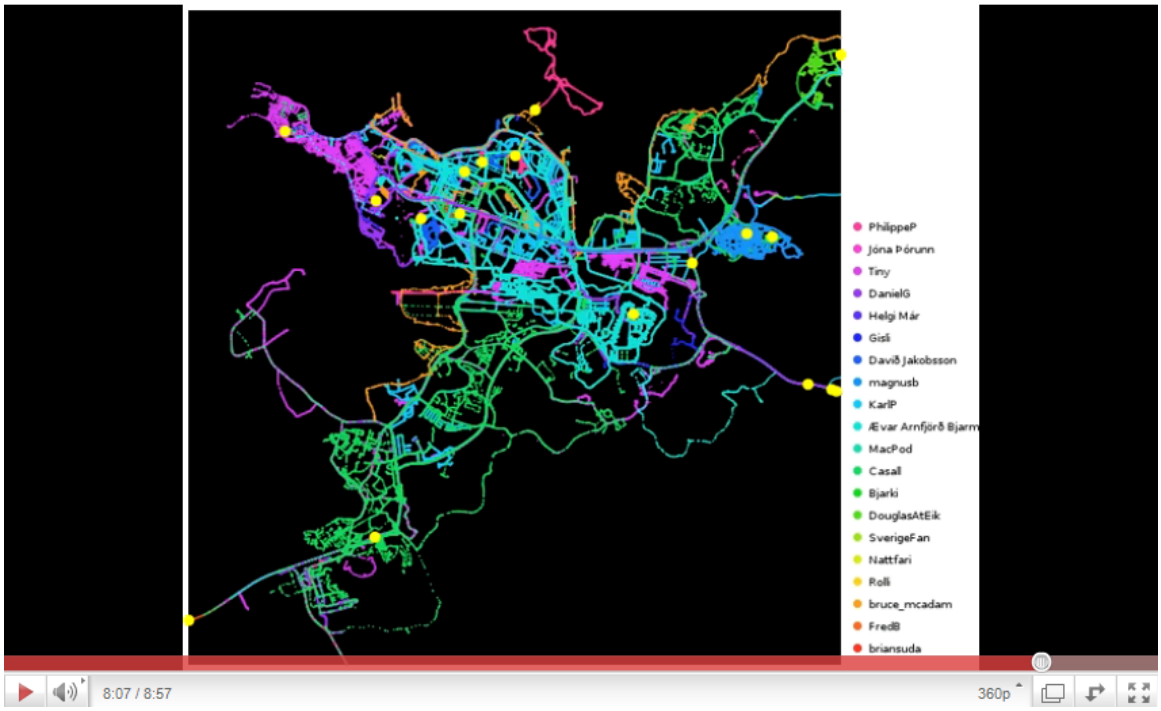


Fig.4 A collection of GPS tracks from Mapping Party in Reykjavík (2007)

http://www.youtube.com/watch?v=xS7sF0o9j7w

Tracking and visualizing technologies make it possible now to see how the ways undertaken by a number of people display the spatial structure. The fascination with this type of images is grounded in the fact of collective action – in this respect I share the general impression with one of my interviewers. Edward shared with me his memories about the installation in Amsterdam[11]. The idea was to equip people visiting the museum with GPS unit for a day. They were asked to take it with them for their journeys. Then the data was projected at the exhibition. Edward: "For me the most memorable impression was how these traces together became the map of Amsterdam. I thought "wow", this is the way to create maps! That was before OSM."

Despite the fact that the everyday movements have multiple states and are only partially entailed by space configuration, the tracks when put together make up the spatial network, a kind of a partial map. It does not register street numbers, building blocks or any other attributes of the place like the traditional map does, but it depicts the spatial configurations. The OSM is somewhere in-

[11] Amsterdam RealTime, a *diary in traces:* a GPS installation at the exhibition 'Maps of Amsterdam 1866-2000' in the Municipal Archive of Amsterdam. http://www.waag.org/project/realtime

between of the traditional and such automatic live mapping. It is intentional (trying to be full-coverage and precise) as the traditional, but multi-sourced and, on the level of each several contributor, not so much systematic and story-like as a ‘live mapping’.

The map, the outcome of spatial practices in OSM smoothes the individual layers and brings them all together in a coherent way. We might never have the opportunity to distinguish the segments of editing and uploads made by different users. When working in the editor we can click on the terrain or the sign to find out its editing history. We can also go to the concrete user’s page and check the list of his edits and track uploads, but the map, in accordance with its main task, is presented as a depersonalized and integral artifact. Nevertheless, it can not be seen in a ‘totalizing’ way as soon as multiple perspectives that uncover the sources of production are built in. For the viewer and user familiar with the idea of the project they are there by default – in the fact that areas are mostly done by the locals and the information is being invested/processed personally. The ‘mirror’ for this partial perspective for the viewer is the consideration of the possibility to be the agent to change the map representation himself.

‘To put yourself on a map’ (sensing affectivity, solidarity, usefulness and adventure)

Propen’s example, the photo 22727, is related to the broad positioning of oneself in the world, not to routine orientation in space and its cognition (finding your way on the map or checking the Street View, etc.). Still, it is possible to say that the mechanism of engagement is similar – though ‘grounding’ of the totalizing image, contextualizing it in the personal experience. The partial perspective appears ‘automatically’ when the user establishes his connection with a territory and a map. The self-navigation, thus, logically, produces an embodied knowledge. The embodied knowledge might also be a result of perceiving the representation of the already familiar environment. One might check the digital map, or, let’s say, aerial image for the place/district/city

he lives in. The cartographical representation in this case is not a source for the totalized vision, but an artifact that can be related to the environment, appreciated or challenged.

The user may find out that his building is not represented there, or any other error. Curiously, the Google Maps, checking them in contexts, are perceived as having a fuller coverage and being more precise than they in fact are. The perception changes when people go deeper into the subject and relate the map to their embodied experiences of space. We can find a number of such comments on the OSM forum:

> Before I personally started mapping, I thought that information in google-maps is a sample. Now I see that it is a horror! It seems that they give the task to school children that have never been in the city and draw streets from the satellite images. Central streets are not so bad, but the farther – the more they invest fantasy. The streets after the factual end continue and even channel off. The numbers of buildings are put at random. (Poltava, Ukraine, April 25, 2011, user Lindroid).

The mapping practice in this sense leads to application of the partial perspective to the maps that already exist. It is not the professional's point of view who definitely knows the problems in (digital) cartography; rather it is an amateur's position that expands his knowledge about digital representation by relating it to his personal experience.

This happens when the territory is familiar or in the process of cognition, but is it possible to get 'intimate' understanding of the unfamiliar places through the cartographic representation? That is the question Propen tries to answer in her essay. She discusses the potential of the digitally represented space to become a 'point of entry' to such an embodied vision. Her expectations are high: it should provoke the feeling of responsibility toward the represented subject. Her suggestion for the environmental groups (or the affirmation of the efficiency of their practice) is to appropriate the digital mapping tools and application like Google Earth in their visual rhetoric – to employ the affective component that the viewer experiences. Significantly, Propen changes the preference for the explanatory mechanism of the embodied vision – from the 'partial perspective' to the 'affect'.

This accentuation of 'affectiveness' resembles the one presented in the essay "The emotional life of maps and other visual geographies" by Jim Craine and Stuart C. Aitken (2009).

According to the observations of the authors, the affectivity is evoked both by traditional maps and new technological representations as soon as the viewer imagines and experiences the places represented. The authors describe the possible interaction with the map as following: "We are lost to the task of imagining what it would be like to be in this place for the first time. We imagine tramping over the hills or along the streets depicted in the map" (2009: 154). The possibility to see the map or 'fly' through the landscape (Google Earth application gives such illusion) gives the affective perception and knowledge about the place that engages our mind and body. The image becomes actual, while our body – virtual.[12]

The problem with this rightful observation starts when we try to combine it with Propen's idea of gaining the feeling of responsibility. It is not obvious that the affectively perceived image finds the way to the real spaces and real practices. The viewer might not be a "voyeur", he might be a "voyager", but there it is unclear whether his affective voyage will reach the 'destination'. The destination presupposed in Propen's essay is, generally speaking, activism and volunteering. Still, it is no wonder that she finds it effective to use digital representation to provoke emotional response in the frame of environmental campaigns – no wonder, because the provoked emotion is in this case streamed by this environmentalist framework. That is why the idea of getting the partial perspective which Propen leaves to the end of the article, is important. The pure affect without a contextual 'point de capiton' is at the risk of staying at the virtual level, without perceiving problems and 'perceiving them as more concrete'.

Propen examines the way the emotional engagement in spatial representation might be a source for the engagement in some sympathetic activities. She does not reflect, though, on the activities of creating/modifying the spatial representation itself. On the general level the mechanism

[12] *Compare to Ingold's 'imagination' of what is 'behind' the map:* "Were one magically transported into the looking-glass world behind the map, one would indeed feel lost and disoriented, as in a fog. But the fogginess is a function not of the amount or density of detail but of the arrestation of movement." (Ingold 2000: 242)

And note that his general account on imagination is different: "The reality is more complex, since both the image of the projected form and the material artefact in which it subsequently comes to be embodied are independently generated and 'caught' within their respective intentional movements, of imagination and practice." (Ingold 2000: 418)

of involvement might be addressed in the same terms and with the same corrections as it was done in relation to Propen's article. Involvement in the collaborative mapping has an undeniable affective component, which 'works' only when put together with partial perspective generated on the basis of personal experience and the partial perspective of collectively generated framework of stated goals, needs and possibilities.

Some of my informants showed their affective attachment to maps and the practice of walking. Peter said that his love of maps (not historical, but modern ones) and his enthusiasm about walking and discovering new places really motivate him. He told me about the 'rational poetry' of topography and maps and his (as a technical minded person) satisfaction with a process of map drawing: "I like all this lines, polygons, and how to combine them…"

The walk and the map have already appeared in his life together before his engagement in OSM. He always liked to plan his walks using the map and afterwards he used to draw his travel route over it. After his involvement in the project he started seeing mapping and walking in a combination where pleasure and usefulness reinforce each other. Peter explained that he likes to go out with GPS and to map the place because that is the way he feels more motivated to walk – the product of his walk is valuable. This external motivation of contributing to the collective product makes him practice more walks and more work with the map. For Vincent the affective component related to maps (and to cycling, if add from the context) is reinforced by the open-source usefulness: "I, probably, love maps. That goes in combination with that I am able in this way to create something open." Commonly, the usefulness appears as a nice supplement: "It does not really trigger me that it is useful, but for me it is to have a little bit better feeling. I'm doing something fun, I see new stuff… and, oh, by the way, it is useful. (Henk)

Peter's story might be seen as an especially interesting one because he does not find the community important for him. Then, what is important? "Not a community itself, but being of one mind with each other". Such 'solidarity' does not mean that Peter is involved in the discussions on the issues important for the project and finds himself on the same side with the majority of other people. Basically, he is not only disinterested in the community, but also, as I find out, is not aware

of its problems, perspectives and patterns of organization. Still, he agrees with the unseen colleagues (he met other contributors only once during the single Mapping Party he attended) on that a map should be good, open for contributions and freely available.

There is a gradation in feeling toward the community – from 'indifference' illustrated above to performing the organizational activity itself. The majority of my informants have shown awareness of how the project functions, how it should be popularized, etc. Bas himself undertakes some managerial efforts for OSM and open-source movement. Henk (once a member of a city council) is one deeply into the community issues, "spreading the word" and trying to find opportunities for organizations to use OSM data. As a rule, those who are more into organizational issues (or into related business and art projects) map rather occasionally, while the participants more interested in the mapping process itself, might have less interaction with the community (they do not want/have time to follow the discussions and news about the project, checking only what is important personally for them).

Vincent: It is fascinating how all those people with different motivations can work together.

Me: Do they work *together*?

Vincent: Well, no.

We discussed it further and Vincent resolved this discrepancy by saying that OSM "provides space to what you want to write down – be it open data, description of the environment, cycle routes…" If we ask whether mapping itself is a collective or individual activity, the answer will again be ambivalent. The collective sense of contributing to OSM is high. That is a feeling that people work 'together' to open up the data, to get cartographic information free for everyone. Still, the mapping process itself very often is not very social thing to do: "You go somewhere, you figure out what the streets are, you figure out everything that interests you. Go home, enter it. You do not see anybody." (Vincent) The Mapping Party is an important occasion to meet, to communicate and to work together, but they are not, as it is understandable from the name, the mapping routine.

So, the users create a database and there are no prescriptions of how to use it. It is an interesting idea – of a 'pre-map', a blank paper on which you can inscribe what you want to see

there. The database can exist not being actualized in the form of a map, but still there is a map in the representative core of the project. It is there to 'show' users their contributions. The participants want to see a map and, also essentially, want to see 'themselves' on a map. Peter formulated it in the following way: "I want to be on the map, be easily found there" and "I want to have good maps for myself". Bas stated widely: "Mapping is a way of putting me on the map.", which includes both of the mentioned statements – to put me on the map with my needs and interests.

As a rule, users start mapping with their neighborhood and the locations that are familiar/important for them. Andrij told me that one of the reasons for him to start contributing was that his neighborhood was not mapped, so he wanted to map it and map it well. This priority for the beginners is explainable: it is easier, it is related to your interest, and it is of better quality because you are familiar with the place. It should be said that experienced mappers also may prefer to map only familiar places (not looking for some new). Anatolij: "I map places where I was or where I am. Known from childhood, or where I have trips."

The map appears to be self-centered, but it is only a part of description. The feeling of 'belonging' and personal interest in territory might be broad. The user from the city of Primorsk (Ukraine) writes about his engagement in OSM: "I heard about OSM on television and decided to participate. To my amazement I found out that my lovely town Primorsk is not on the map (it was there, but there were no streets). So one weekend I mapped almost all the streets, administrative buildings, hospitals, […]" (April 25, 2011, Ar-man). This mapping is related to the possibility to be responsible for and be the representative for the whole town. Vincent formulated this idea nicely: "OSM is even more extreme than localizing yourself, it is defining the localization and localizing others – because you create the map which other use to find their locations."

The 'map' of Primorsk was empty, with only one point of reference – a dot called to signify the town. An empty map is definitely the site for 'imagination', but, probably, of another kind than Craine and Aitken (2009) mean. The experience of looking at the empty 'representation' and not finding there the cartographic outline of the familiar places is just opposite to looking on the completed one and 'travelling' over unknown places. Imagination is directed not from the map to

the place, but the other way round. Being familiar with the place, you tend to imagine what its map and the process of its creation can be. For the user this potential map is a kind of a digital *terra incognita* to be explored through the real places.

Me: Did you experience mapping as an adventure?

Vincent: Once, that was a newly built quarter, ten streets. It was not mapped at all. And I went there… It was, if you want, discovering some new territory.

The link between mapping and adventure might be, definitely, more explicit. Henk started answering a similar question by describing of how he mapped Alaska (which made a great impression on him as a 'raw' place with a 'real life'): "When I talk about adventure I show the picture of the At Your Own Risk Road. You do not know where it is going. If you do not see a street on the map, you do not know what is behind. It is a way of exploring the world…". Then he continued with what is very similar to Vincent's 'discovering some new territory': "… the world but also your neighborhood. When I was mapping my town I went also to a place where I'd never been before. Interesting experience. You look on the map and say 'nobody has been there'. If the street is not on a map you have the feeling of a person who is the first to go there. It does not make any sense, but it really gives you the feeling of excitement."

The enthusiasm about mapping is interestingly related to this absence/presence of the data on the map. As we can see, for some of the informants the idea of an empty map is very attractive. Andrij: "The most interesting is when you have an empty map. Then you take a GPS receiver and start wandering, looking for interesting places. When you have a web of roads, buildings – it is not so interesting." At the same time some information already presented on the map may provoke a want to map. In his story Andrij connected the fact that he made the basic mapping for one of the districts in Kiev and the fact that in two months the whole district was mapped. In his opinion, he provoked the interest, gave a frame of reference for other users. It is quite possible that the mapping by Ar-man also attracted new people to map the region. By all accounts, mapping from scratch is usually done with the expectation that it will encourage further contributions to a place; while this

further mapping is done with the feeling of the importance of previous contribution. Such interaction is what the mechanism of collaborative mapping presupposes.

'Map as a process' is a source of enthusiasm. In respect to this it is worth seeing how the large data set import to OSM from commercial providers in the Netherlands in 2007 negatively affected the enthusiasm of the community. According to the stories of some of my Utrecht informants the fewer possibilities for mapping was the reason. Still, it is not an exhaustive explanation. The actual amount of mappings left to be done was still big: "Imports in the Netherlands give you more to do. Especially AND imports, but also imports of 3D shapes, types of ground, all the houses. Imports give you more references, framework for stuff to fill in. When the map is empty you can not do much." (Vincent). Still, when the map is empty you see a clear advantage of your input. And also you have a possibility to build a map collaboratively and gradually. Vincent's next comment is important as it mirrors the rational disillusionment that appears when the major work is done automatically: "This feeling of collective effort that is not for nothing – it is quite a romantic view. The real data comes from the imports. You can fix stuff which is wrong but can't create a big database. It is a huge amount of work. You need to be a professional mapper to get all the data. Imports provide the big data and volunteers spend time fixing and adding little things."

'Map as a process' means much to forming a community ("community as a process"): the possibility to build a map let the community define itself and its 'common ground'. Henk commented: "In England and Germany they have very strong communities, because they built maps by themselves. We had half a year for getting together. There were all kinds of discussions, we were trying to set the priorities, to build something, and then – AND donation. It's done, it's okey."

The enthusiasm about mapping is also related to this absence/presence of the data on other digital maps. The feeling of the importance for the territory to be mapped might be reinforced by the fact that it is not mapped, for instance, by Google. To participate in OSM in this sense means to map what will not be mapped because for the big companies it is difficult to extract profit when investing in mapping of small cities and villages. At the same time, the presence and good quality

of map coverage by other providers may not discourage the participants at all. One of the important reasons is the license politics of data providers. The idea of open-source data stands almost in the core of forming the defensibility of OSM. The programic 'common ground' for the project is that the map should be the property of the community. Contrasting the OSM data to the data of the commercial provider gives significant motivation for people to contribute. Still, the participants demonstrate gradations in recognizing this motivation. The question whether one would contribute to Google Map Maker if it was open for the Netherlands/Ukraine might be a 'test-question':

- "No. And I'd just burn on the stakes everyone who participates.
- "I might, but I would not spend a lot of effort on it. Why work for a big company?"
- "Yes. Why not? I love Google."

The answer that represents the real sympathy toward the product of Google (Peter) is exceptional for my fieldwork. The most balanced answer is more common. Vincent drew the line of how far his contributions can go: 'To fix a few things that annoy me – as soon as it helps me, but I won't go out for the day." The same with Henk: "I am not sure, but definitely I won't be so enthusiastic to work for free. With Map Maker there is a feeling of being an employee of Google. With OSM I feel as a co-owner."

The most radical 'stakes' position was presented by Anatolij: "For me as a programmer the most unpleasant occurrence is when you come to the person, ask for data and he refuses. Google takes your data, expropriate them, and sell. […] People like to draw polygons, lines, dots. As a rule, they do not read the license agreements." Bas, as an active participant of open-software movement, holds the same position: "For everyday people, Google "feels free". Only technical and business people do not feel it free. Nobody reads the license." For people that are more in programming or using OSM as the source of data for their own cartographic service projects (Taras, Anatolij) the primary interest is in total openness. Peter, on the contrary, represents 'everyday people' as soon as Google potentially fulfils his need for openness of data.

Chapter 2: Practices

Lonely cartography and the "dark sea" of the lived space

In the beginning of the 1980s Michel de Certeau famously emphasized the legitimacy of everyday practices. His aim was to fix the theoretical incline when people are seen as passive consumers (meaning 'non-producers') and subjects to receiving culture (not modifying it). In Certeau's text the concept of 'consumer' is transformed to 'user', and the notion of 'consumption' – to 'tactics of consumption'. To *use* things is to re-appropriate things: from utilitarian objects to laws and languages. The Everyday life is a site where the rationalized institutional norms and schemas, imposed upon people, are tactically subverted in the microbe-like acts without any fixed result. For Certeau modern cartographical knowledge meets everyday practices only in such gestures of subversion. People might use maps in accordance with their needs, adopt them to their interests, they might *bricole*, but the abstract and technological rationality of maps is strange to them. Certeau mythologizes and poetizes the "dark sea" (1984: 41) of the lived space. Within the same effort he allocates the cartographic knowledge ascetically. In the "Walking in the City" chapter Certeau opposes cartographic knowledge to everyday practices: the city taken from the imagined altitudes ("flattered in a plane projection") to the lived city. The fist is related to the disembodied practice of *reading* the urban 'text', the second – to the embodied (and 'blind') practice of its *writing*. To look at the map (as an urban planner or a cartographer does) is to feel power over the city – this abstracting and totalizing experience is only possible as a result of forgetting or misinterpreting the everyday practices of the walkers.

So, according to Certeau, there are regimes of cognition that can not work simultaneously: either we are non-reflective to the general picture, or alienated from the lived flow of particularities. We have already come across a similar tendency in Tim Ingold's (2000) distinction between global and local perspectives, which he associates with the dramatically different types of cognition. Ingold's understanding of the nature of modern cartographical representation also resembles

Certeau's one. What in Certeau's terms is the distinction between *reading* and *writing* of urban 'text', for Ingold appears as the distinction between *map-making/map-usage* on the one hand – and *mapping/wayfinding* on the other. The cartographic representation for him can be neither the source for, nor the result of the embodied (mapping and wayfinding) practices. The local embodied knowledge does not give rise to maps, but rather to the designs like 'sketch maps' that are not so much representations of space as condensed histories (Ingold 2000: 220). The map is also not used by the locals to orient – they find their ways in the narrative tracks of the before-comers.

It is appropriate to ask whether the 'link' between everyday and cartographic practices was ever possible, or, in other words, what are the conditions for it to exist. Certeau admits (Ingold quotes him) that such a link was maintained so long as travelers, not institutions, were agents to gather the geographical information. Medieval maps served as memoranda of itineraries, providing directions and advice to travelers. In the course of scientification, the map disengaged itself from itineraries – from stories and practices that were the conditions of its possibility. For instance, illustrations were subsequently dismissed from the map (Certeau 1984: 120–1).

The cartographer should travel – but the modern cartographer does not even need to. He can just assemble information provided to him off-site, turning it into a comprehensive spatial representation. The map should be a by-product of story-telling – but the modern map is called to be a pure spatial representation. "In effect, mapmaking suppresses, or 'brackets out' both the movements of people as they come and go between places (wayfinding) and the re-enactment of those movements in inscriptive gesture (mapping). It thereby creates the appearance that the structure of the map springs directly from the structure of the world, as though the mapmaker served merely to mediate a transcription from one to the other. I call this the cartographic illusion." (Ingold 2000: 234). Consequently, it seems that the only possibility for the map to avoid the 'cartographical illusion' is to exhibit stories: to incorporate narrative elements in itself and change the form accordingly. The objectified form of the modern cartographic representation is, by default,

a losing strategy. It is aimed to give 'quantifiable data', leaving aside 'quality of a space' (the viewer's sense of it).

The idea to re-associate the cartography with the narratives is obviously appealing. Today we can get even closer to its realization with the help of new technologies that allow the map take a form of a *tour*, so that the stories unfold before the user in time and space while he is moving around. The 'first-hand' stories are combined with the movement – it is an even more 'efficient' opportunity to get to the local knowledge than the users of the medieval maps ever had. Edward described a similar tour he co-created in 2004. The site was the residential neighbourhood in the Netherlands where four years before the fireworks factory had exploded. In an anthropological manner the team collected the stories from locals. The resulting GPS-tour gave an opportunity to users to walk around the neighborhood and get the information tightly connected to the place. Such mapping, obviously, extends the possibilities to represent the place. Edward: "The story-telling projects let me provide different mental maps of the same place. […] As a cartographer you follow the one way."

The reason to mention the GPS-tour was not only to exemplify the importance of narrations being incorporated in maps, as well as not only to show that some OSM contributors in parallel are engaged in the art-related spatial projects. Before we think of this 'one-wayness' of the cartographical practice (in OSM) and highlight the fact that it is still productively linked to/emerges from everyday practices, it would be not meaningless to reflect on Ingold's theorization of technologies in general and GPS technology in particular. They are, basically, two theorizations that conflict with each other, mirroring the general tension within the field.

The GPS technology is only one of the new navigation and mapping technologies that Ingold (2000) mentions in his book. He does it once, in a footnote. Talking on the divorce of map-making from experience of bodily movement in the world (2000: 234) he notes that with the development of GPS device this divorce "has been taken one step further". Saying so, he refers to Thomas Widlok's article (1997) on testing GPS against Bush people's orientation skills. Evidently,

for Ingold this opposition is between very formal, de-personalized and disembodied navigation using the GPS technology (which fix your location “according to a universal set of coordinates”) and the very embodied, skill/practice of wayfinding. It is provoking to check this opposition in the context of Ingold’s apologetic vision of technologies.

The concept of “skilled practice” is indeed very important for Ingold. With the help of it he aims to bring together technology and art in a life aggregate similar to what Ancient Greeks called *tekhne*. Tool-use in this sense is a skilled practice that presupposes a kind of synergy between the tool and the body, as well as the deep embeddedness in the particularities of experience. It is obvious that GPS navigation for Ingold does not presuppose human involvement and investment of human’s skills, so it is definitely out of the art-technology re-unifying schema. GPS navigation is rather the application of objective knowledge in the form of an ‘expert system’ – the same as in relation to the institualized map, but worse. Widlok in the article mentioned explains what this ‘worse’ is, by pointing at the fact that the user never more need to match the derived information with sights or landmarks visible to him. That “eliminates the indexical element still involved when using a map”. “Indexical” in this sense is “what is actually perceived” and non-indexical as “what to expect according to a map.” (1997: 326) Widlok admits that in the map use there is the user’s necessity of minimal interaction with the environment.

Ingold goes further, finding *no* indexical element in the map, because he understands indexing as pointing on the form of life and does not count the navigation process as its minimal manifestation. In a word, Indold systematically radicalizes the detachment of the ready-made map and navigation technologies from the lived experience. What he progressively finds possible in relation to usage of other tools (and what is very much, as we will see, applicable for mapping practices OSM) he does not look at in relation to modern cartography and navigation, as if objectified knowledge by default resists any embodiment. Still, possible disembodiment is evidently not only the problem of the subjects. Even accepting a liberal share of the map critique it is worth

acknowledging that the map mediation might work on embodied knowledge. The map can be 'practiced' and made through lived practice.

Navigation and mapping stories: to find your way, to make a map

Sure, GPS navigating may 'detach' one from the environment. That is, for instance, how Vincent described his experience of using the GPS device to guide him in cycling: "When I make the bike trip and follow GPS way-points not to make a wrong turn, the only thing I do is look on my GPS. And when I arrive I have no clue where I have been. I haven't looked around, I haven't experienced the environment. Now I do not use GPS, because it is not nice." He also similarly to Widlock pointed out the difference between using GPS and a paper map: "When I was looking at what route I should take on the paper map, I tried to memorize the map and check with the place". A paper map in this sense leaves more space for interaction with the environment than automatic GPS navigation. Still, that is not necessarily true for other 'operational modes' of GPS. For instance, being used for the OSM mapping, this locative technology operates with different outcomes.

The difference is caused not only by the specificity of the final goal. This reversing of the navigation goal (not to define your location to move, but to move to define the location) is important, but mapping presupposes also a 'pure' navigation when you do not know the place you are going to map. "From the very beginning I defined wrongly where the Priazovskij Tupik Street begins. My mapping started from the opposite end than I planned" (7.12.10, Berdiansk, Ukraine). The navigation tools during the mapping process might be different: the paper map, the Walking Paper or OSM application on a Smartphone – in any case the attention of the mapper to the territory will stay equally strong. The attention that aims to explore the territory does not stay in the negative relation with the tools that help in orientation. The navigator in this 'operational mode' is what assists, not what directs or limits. 'Effectiveness' of the navigator then is not in the measure of its

automatism, but in the measure of the user's ability to relate the representation to the lived environment and to make a decision.

Ingold notices that "when we move about, we do not normally think of ourselves as piloting our bodies across the surface of the earth […]" (2000: 237). If so, why should we not think of this abnormality as about a skill? For the mapper this trivial skill is complemented by some more sophisticated ones. If he wants to map the street names, amenities, sidepasses or other features, he needs to record this information during his walk – on the (digital/paper) map, or using the dictaphone/photo camera. The task is not just to relate spatial information and cartographical information, but to synchronize and locate spatial information on the map. Still, the simplest condition is the same – to be able to relate oneself to the environment through its representation, and vice versa.

It can be said that this ability not only makes space more topographical for the user, but also makes the topography more like a lived space. For Ingold, though, this can hardly be a true statement, because 'a lived space', he says, is inaccessible for those who navigate with the help of a map. They are strangers disconnected from local narratives (an endless cycle: they have nothing to invest into the map and the map can give them nothing). Ingold leaves open the possibility to be engaged in the environment, as we remember, only for the locals in their wayfinding performances. Apparently, Ingold, underestimates the potential of the narrative building for one with a map. When *moving* all around – does a user of a map not write a story on the place? And when being located within the geographical coordinates – is he not able to invest a map with this on-site experience? By admitting these possibilities we then can go further, to where the story-like on-site experience may become constructive for the map.

The spatial 'stories' behind the personal contributions to OSM are not necessarily the specific stories of intentionally and carefully planned mapping activity. That can be independent daily-life trips for which the GPS-tracks are just by-products. That can be a track of a far-away journey as well as of a routine way from office to home. The common practice is also to go out on

an ‘independent’ walk/ride, but dedicate some time to taking notes. Andrij: “I can go for a walk to the botanical garden with the GPS. During the walk I will take notes. If I have time I will process the data, if not – just download it. I may find out that the data I get it is already on the map. But the more tracks, the more precise the map is”. The different practice is one of intentional mappings. It is usually performed with respect to already existing contributions. It does not necessarily mean to cover the area systematically, but a walk is anyway substituted for the mapping goal. It can become a very particular type of walking/cycling: going street by street by street, writing down a large number of attributes. In a single mapping it is usually difficult to pass accurately from one street to the next, so the pass through the area might be repeated later. As we see, the resulting tracks are of different ‘origins’. Some are the records of the trajectories that would be there anyway – fixed or unfixed – as a part of the everyday practices. Some are only possible because mapping is the goal of the trip.

The two types are different, but both constitute spatial stories. We talked about the difference between spatial stories of the ‘hiking’ type and spatial stories of intentional mapping with Vincent. He nicely described the difference: “If you make a hike, you visit the points and they are ordered. If it were a story – it would be a kind of descriptive story: this is here, that is there, and these things are connected. In mapping story there is not much sense of time as in a normal journey. If you have two mapping stories in nearby reasons – you may connect them. There is no more linearity.” Interestingly though, the ‘stories’ of the hiking-type might be incorporated in the map and co-placed supertemporaly with other ‘stories’ as well. At the same time ‘mapping-type’ stories might be traced to the reverse point where they are still practiced and are still point-by-point movements through space.

As well as a phrase, the mapping practice unveils in time and space. It produces memories about space and is related to its exploration. It is common to hear from the contributors that mapping gives the possibility to discover more about the places: “You think that you know the place, but then you map – and it turns out that you do not know it at all” (Vincent). Discoveries

might happen with simply turning round the corner, reading the sign. I think, Ingold also overestimates the potential of locals to get the comprehensive experience of the space. Everyday 'writings' of locals might be automatic – not in a surrealist way, but as repeatable and incurious practices. In mapping practices, in contrast, a kind of de-automation happens, because mapping is an application of certain 'algorithms' for moving through space. As Bas noticed, "it might be difficult to decide where to go when you just walk for the sake of walking, and mapping gives you a goal". So, you move through space specifically, and the 'discovering' of the yet unmapped might come together with discovery of the not yet cognized and perceived.

Vincent took me to the site of his mappings in the old city center of Utrecht during last year's Mapping Party[13] and showed me his 'findings'. As most highways were already complete, the task was to map footpaths, amenities (pubs, shops…), landmarks and house numbers. Surprisingly for Vincent the city center was not done well. Within his two blocks he found a big but unmapped street – "the real discovery". He also observed the streets that he himself had never noticed before, and the hidden courtyard that he never knew was there. There were also some curiosities: the house numbers on Domstraat that jump from 8 directly to 50 and the shortest street with a name but of no more than 4-5 meters in length.

The current map of the area which Vincent mapped is in Fig.5 compared to that from Google.

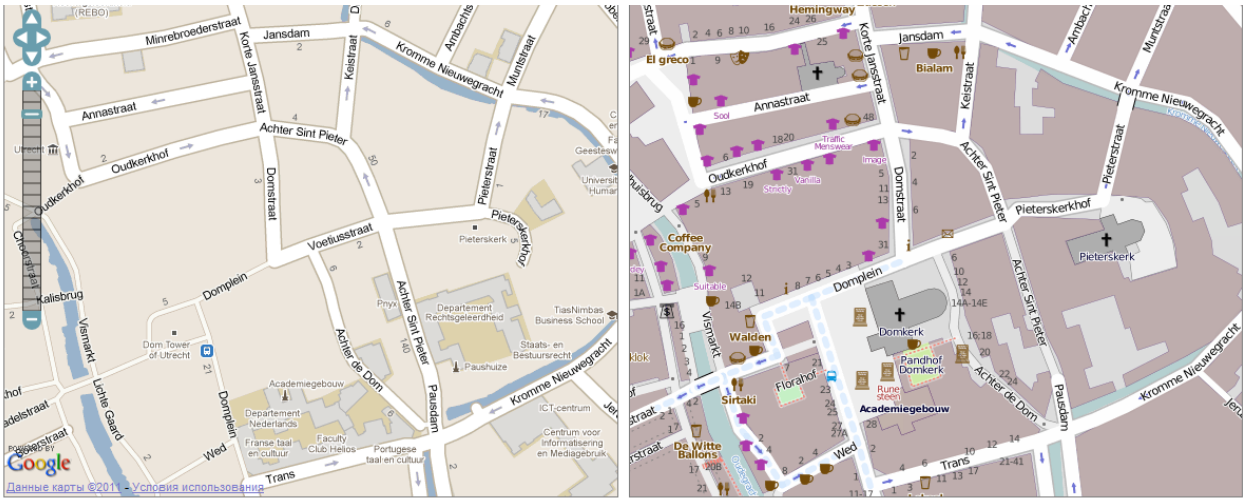


Fig.5 Map comparison (Utrecht) via http://tools.geofabrik.de/mc/. Google Maps on the left, OSM on the right.

[13] http://wiki.openstreetmap.org/wiki/Utrecht/Mapping_party_2010

It is illustrative that Google's fragment has detailed information on the campus of the Utrecht University, apparently gained from the institutionalized source, and no detalization for the rest of territory. While in OSM the mapping effort is evidently realized where there is an access for outdoor exploration. This brings on-site mappings closer to the reality of the city dwellers, in this case pedestrians. In other cases the 'directly experienced' need of cyclists gives rise to a cycle-map.

The common practice is to map pathways. They are usually too informal elements to be mapped on a 'standard' map. They may be seen as evidence of everyday 'tactical' movements that diverge from the official routes. It is interesting to think about what happens when they are fixed on the map. The extent to which such informal elements might be normalized shows the "Pathways of desire" Mapping Party in London (Fig.6). The participants mapped the ways that link two stations with eco-village BedZED. "The cycle and footpaths will allow staff and residents at BedZED, and of course, other people living and working in this area, to get around by bike and on foot without having to use the very busy and slightly dangerous London/Carshalton Road. […] Hopefully the data from the mapping expedition will be a good starting point for pressing the decision makers in Sutton and Merton Borough Councils."

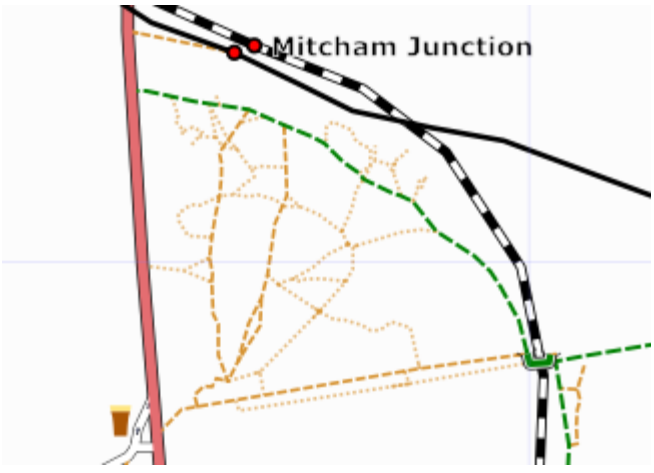


Fig.6 'Pathways of desire' (fragment):

- green dashed - well surfaced pathways (effectively cycleways)

- brown dashed - proper-looking pathways (effectively footpaths)

- light brown dotted - accessible pathways of desire http://wiki.openstreetmap.org/wiki/Pathways_of_desire_party

The gesture is interesting because it not just fixes the ways on the map so that people (more new-comers than locals) can feel more comfortable, but presuppose that 'justification' of practices will happen on the level of urban planning, so that the official route will be made. This is an organized action, an exceptional meta-effort to bring mappers closer to the position of the urban planner – the one who can 'read' the territory as a construction that can be improved.

More commonly, mapping does not call into being 'such global thoughts' (Anatolij). 'The portions we do are small. When you work later with a material, the generalized vision is possible. But the aim is to put on the map – to help in orientation, not to ask why it is there. It is usually there… just historically." Procedures of abstraction do not put the mapper in a position 'above' the city as soon as this position is grounded in personal experience. For instance, when I asked Taras if the work in OSM changed his perception of the city, his answer was: "Well, I have realized how much Kiev is irregularly built-up – in a sense that there is a huge amount of roads with turns, blocks of irregular form, millions of pathways that give you a possibility to short cut and so on." Certeau's look from the above does not give the chance to see the pathways, let alone to cutoff.

*To 'index' locations and what **is** there*

Ceteau writes about the insufficiency of drawing the journey trajectories over a map: the marking of the movement on the map does not grasp what happened in reality. Reality is for the 'footsteps', configurations of movements that interconnect points and give space its story-like flash, the map is for the abstract and reversible line. Following the same logic, Ingold defines a map as non-indexical. To be indexical it should index a form of life, it should be bounded to the place and appear from it, not filtered through the concepts, categories and schemata. (Ingold 2000: 225). In this discussion I find it possible to return to the notion of index in Peirce's semiotic (1960). According to Peirce, a map is indexical in pointing to the locations, iconic in representation of the directional relations and distances and symbolic in using conventional signs. Piece's index sign (putting it very crudely) is an imprint, a trace; it signifies its object by virtue of being materially

affected by the object. To my mind, in OSM this element is intensified as far as both aerial imagery (index + icon) and GPS traces (index) are present in practices of its constituting. It might be that even in this case a map does not point to a 'form of life' (in Ingold's understanding), but it points to the fact that something 'is/was there'. Moreover, this 'is/was there' is both of topography/signs and human activity to put them on a map ('transfer' does not happen automatically).

The non-automatism of the indexation makes the process selective. The question whether the sign/object should be mapped or not is often a question of its usefulness, the question of the real (dis)functionality of the site. "I see no sense in mapping of the non-functional elements of the infrastructure. Who is interested in the grocery kiosk that is always closed? Or a pump-room that can be used only by the dwellers of the nearby buildings who own a key." (Poltava region, Ukraine, user Lindroid, 11.04.2011). The comment of another user corrects the straightforward understanding of functionality: "You are probably right about the kiosk, but it is better to map the pump-room – it can help somebody in orientation."

One of the ruling ideas in the project is 'truth-on-the ground'. As we see, it may be tricky regarding the disfunctionalities (to map or not), but in a broader sense it is about *how* to describe everything mapped (tagging procedures). To be objective in attributing, the user should directly address reality that is being mapped. The first-hand knowledge is privileged as soon as it can give more precise functional characteristics to the place. The mapper, thus, may challenge other representations: "If government bureaucrats decide that this road is important, but the road is two meters wide and hardly anybody uses it, it is not going to be mapped as an important road, it is going to be mapped as a small road." (Vincent) "If you think that the village main road is a "primary" road, then that's what it is." (Ramm, et. 2010: 65).

Tagging is about flowing of the direct knowledge through the system of signs. In OSM there are general classes of geographical features like "ways" which then are tagged more specifically. Tags consist of a key and a value. A road for example might be tagged or classed as a "motorway," "toll road," and "susceptible to traffic jams" (road=motorway). It is possible to define objects as

many times as you like. The list of tags[14] is open and formed in the discussions. “OSM does not have an exhaustive list of “allowed” tags; you may use whatever keys and values you like. That sounds potentially chaotic, but it is an important feature of the OSM’s success.” (Ramm, et. 2010: 61). The authors continue by saying that it makes a lot of sense for mappers to agree on a common tagging scheme.

Those are two sides of the process that are appreciated within the project: the freedom to suggest your variant or to question another’s, but also a strong tendency within the community toward the normalization, optimization and rationalization of the attributive field. Anatolij: “That is both good – to have instructions and a flexible program. I try to do what is approved. Without instructions there will be a mess and confusion which are bad.” No matter how much ‘agreed’ the descriptive apparatus is, for the user it is always a dynamic process to describe objects in a certain way – to apply suggested classifications or to generate new one. The newcomers may consult on how it is better to tag this or that geographical feature. For instance, the user demonstrates a picture of a earth-surfaced road he took during mapping (Fig. 7) and ask if the surface can be attributed as ‘mug’ (surface=mug). In comments it is suggested (referring to what was agreed) to use ‘dirt”.

[14] Selection of some of the most commonly mapped features and the way to describe them: http://wiki.openstreetmap.org/wiki/Map_Features

Fig.7 The user's photograph of the road to be mapped and tagged. 'Surface=dirt'

The suggestion concerns unification and optimization of tagging procedures, it makes little change to what was experienced – it just guides how to be more definite in the expression. Nevertheless, the functionality of the surface was experienced by the user personally and on-site. The photo can be, but is not the one to exemplify the type of the surface – it is one, particular, to be described by it.

Note on the indirectness

"The direct knowledge goes first. There is always a possibility to use other sources of information. But they are less reliable. Without doubt, direct knowledge goes first." (Vincent). The direct experience is appreciable in the project as soon as it guarantees much more accuracy than it is possible to achieve by drawing over aerial images or other (possibly out of date) maps. It is always preferable to go and see what changed, to specify addressing, types of the buildings, types of zones. Or, you might know the area and already have a mental picture, and in this case tracing from aerial imagery is easier and more precise. In general, "It is important to be at location, to imagine the objects and their relations to each other. […] I do not want to contribute wrong information. Less is more." (Anatolij). Despite such a priority there are users who draw over the maps and imagery (and even developmental plans) without knowing the place. They may say "If there is somebody from locals – check the correctness." I came across such entries in Ukrainian and Russian language diaries (according to some of my informants, in Ukraine people more often draw over the images than go on-site). In comments the other users emphasize that it is "bad" practice.

As soon as directness is associated with correctness, the 'right' priorities are evident. The situation is complicated though by the fact that indirectness does not necessary cause serious errors. For instance, the house number schemas that are being applied to make the mapping process less labour-intensive: taking into consideration that in urban development the schemas are also used (or even over-used – Fig.8) this strategy may give the correct results. Or, drawing that is made not out

of direct knowledge, but of habitual knowledge and ability to recognize spatial patterns – the results might also be good. This is not a problem for the project as soon as the result is correct.

This correctness though has another ‘ontological status’ than the one achieved through direct observations and spatial practices. It is more like correctness of the cartographers and urban planners that are able to recognize and order objects without contacting them.

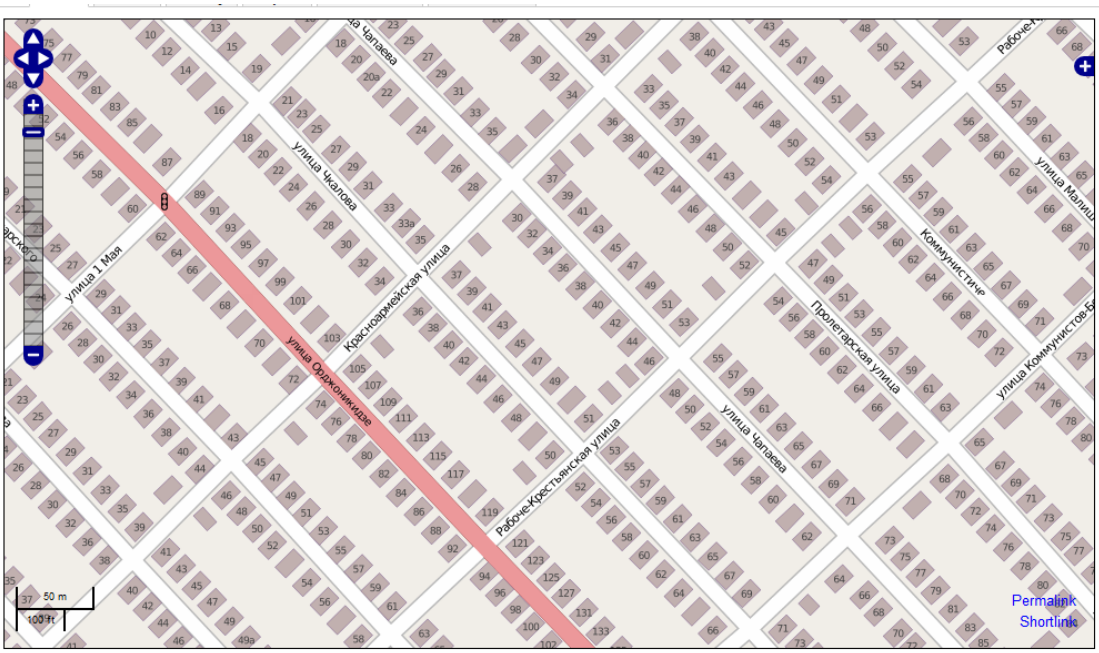


Fig.8 Mapped suburbs of Orsk city (Russia)

Conclusion

Cartographic representation is not necessarily contradictory to lived experience. Moreover, it can be a source and an outcome of it. A way to such a 'discovery' is the clearest when it goes through the mapping practices of OSM contributors. These practices produce 'standard' cartographical knowledge, while being local and bodily localized. Local here does not stay in opposition to global-like and rationalized knowledge, while localization does not suffer from the fact that it happens within the precise geographical coordinates.

The practices when shaped by the mapping task are more or less exceptional to common everyday practices. Still, they are similarly sourced in experiencing environment and moving through space. They make up the spatial narratives, the traces of which are smoothed on the map, but can be deduced from it in the contextualizing effort, when the mechanism of production is being unveiled. A map, thus, stays dependent on the patterns of participation. In OSM the participatory mechanism is experienced explicitly, but this is only possible because the participation is what is tolerated by the abstracted map form. The case of collaborative mapping in OSM gives more recognition of the performative aspect of maps and mapping as animated, and gives it (in a form of potential) to what is considered to be a 'standard' map.

OSM exemplifies literary and broadly what is 'map as a process'. It is not only about active perception of representation, but also about constant reflective manufacturing of the map, which resonates with 'community as a process'. Involvement happens on all these scales: from personal sensing of the map and the environment, though sensing of the collaborative mapping effort, to recognizing general stated principles and sensing usefulness and solidarity. The participation pattern is, thus, a constellation of personal and collective, in which one can be reinforced by another. Personalization works in OSM in a different regime than it can work in other projects. The mapper is doing what is personally interesting and important for him, his contributions are personal, but this has its limits in recognizing the necessity to normalize and

optimize knowledge, so that it can practically assist in orientation for other people. The aim is to abstract things with a view to making them more usable and useful for people; the same with being precise and rational.

The pathos of being precise is related within the project to 'staying in touch' with the environment, going to the real place and manually grasping certain characteristics of it. Being local and being on-site enables gathering the most precise information. That changes the meaning of systematic preciseness and objectivity, the claims of traditional cartography. When understanding what is correct and objective is deduced from the local observation then it can hardly be seen as detached from reality.

When objective (true) and formally 'objective' happen to be not dissociated, it questions Ingold's "paradox at the heart of modern cartography": "The more it aims to furnish a precise and comprehensive representation of reality, the less true to life this representation appears." (2000: 242) While being precise the OSM representation stays 'true', because it is related to experiencing 'true' space with it functionalities. In this sense mapping can even be seen as indexing a form of life, as soon as mapping is practiced, lived and is related to lives of others. A drift away from the true forms of life in traditional cartography should not be seen, thus, as caused by its intentions to be precise and objective – it should be seen as related to how these intentions are practiced and can be consequently contextualized.

Not only does navigation give an answer to the question "Where am I?", but also mapping does. For OSM contributors these tasks of self-orientation are very much related. But, do they locate themselves in "space, determined by the intersection of an independent set of coordinates"? Or do they position themselves within "narratives of past movement"? (Ingold 2010: 235). (Do they navigate/map-make or do they perform wayfinding/mapping?). The answer should be of a reconciling type, as what they invest into a map bears upon their past experiences and movements. The mapper allocates a map in relation to him as already positioned. That is a self-conscious positioning of the one who possesses a partial perspective and can invest it into the cartographic

representation. In this case a map, still preserving its ‘standard’ form, will reflect the needs formulated in result of such positioning. I experience a need to have a cycle map – I contribute cycle routes. “T*he map, as a result, is going to focus on what people want to see on it.”(Vincent)* That is the other way to see map as a Rorschach test, or if you want, a blank page where you can inscribe your (collaboratively validated) meanings.

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