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BIO MAPPING FOR PURPOSES

OF CITY MANAGEMENT

– PRACTICAL REFLECTIONS

Introduction

Selecting a tool for creating urban projects belongs to challenging and above all responsible tasks because: (1) a defective tool poses the risk of making a wrong (misjudged) decision about development, (2) choosing an adequate, however, difficult to deploy and/or interpret tool poses the risk of making a wrong (misjudged) decision about development. Bio mapping has not only failed thus far to attract due credit among practitioners, but also seems to city managers an utterly inaccurate and unreliable tool for determining particular actions to undertake.

1. Research procedure

The procedure required to be followed in order to draw up an emotion map of the entire city (or its part) involves back-to-back stages. The first is to select volunteers and give them training. Then, before ultimately advancing to the last stage – deployment and completion of the project – the map needs to be drawn up and a pool of qualified, realistic and socially acceptable measures has to be selected from among the proposed ones. Detail procedure has been illustrated in Figure 1.

Roughly analysed procedure seems multi-stage and time-consuming. It would also call for many volunteers, who would kindly agree to explore an urban environment, register their emotions whilst there and subsequently – interpret them. That preliminary stage involving choosing an alternative of city development project to be deployed is seemingly the most laborious. Each time feasibility and the cost base need to be analysed, and in case of doubts – the procedure repeated. Hence, creating a complete emotion map is a challenging task, which involves gathering volunteers to conduct the primary research (field research) willing to devote their time to penetrate an area, describe their emotions and subjectively interpret them. It is recommended for those people to participate at later stages, namely validation of elements, creating action plans, acceptability assessment – especially at preliminary stages. The method presented is not only a tool to single out a development project for urban logistics, but also other development undertakings.
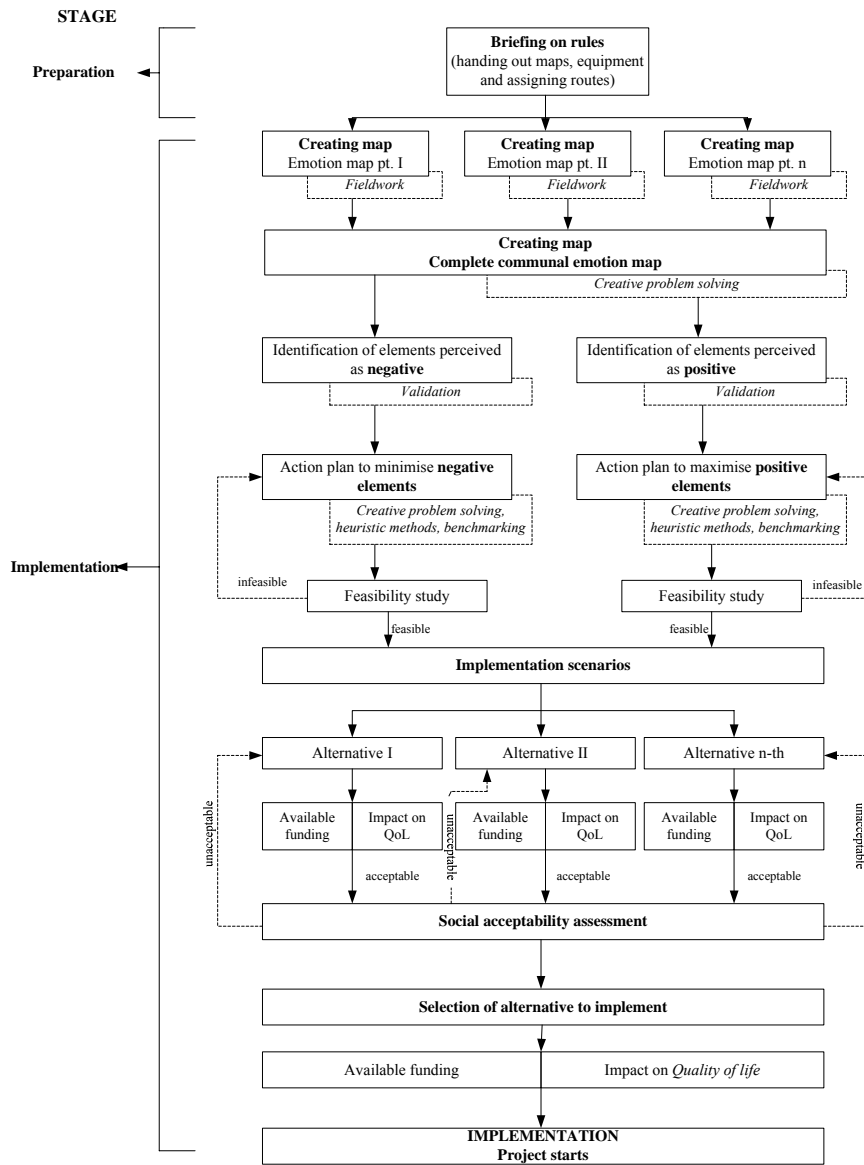
Figure 1. Procedure of creating and using an emotion map in city management

Source: Own development.

Hereunder, the authors refer to practicalities of creating an emotion map. They intentionally omit elements of the procedure with which city authorities are well acquainted (e.g. project feasibility study, implementation scenarios, alternative selection). This paper also does not discuss social acceptability assessment, despite it being a separate matter eligible for an in-depth analysis.

2. Coverage of practical implementations in literature

Bio Mapping has not earned itself yet much prominence across professional source literature. Christian Nold is the mastermind behind this concept. He approached bio mapping as a form of mediatisation of spatial practices remedying the modern cartographic discourse. Currently, this concept is underpinned by little research (Based on: Nacher, 2010). In 2004 for the first time action was taken as part of the project concurrently in i.a. London and thereabouts, San Francisco and Paris. In the process of creating the Greenwich Emotion Map (a project completed between November of 2005 and March of 2006 as a contribution to revival of that part of London) 80 individual records were combined. 98 strolls gave grounds for creating the map of the Mission district in San Francisco. It is quite evident that both the number of willing participants and subsequently created maps relies on informed choices. At the same time, each project has always been given a concrete time frame. In case of San Francisco, the project which took place in 2007 lasted 5 weeks, whereas in London half a year was needed. The issue of selecting an appropriate time frame comes into fore, when the emotions generated by a location depend on character of its function throughout the year. It might vary for different seasons or weather conditions, which affect the way outdoor is used. In terms of initiators and participants, this matter remains open as well. Most probably, the organisers arranging for emotion maps to be created are circles which aspire to exert great control over development processes of entire cities of their parts. For instance the Mission project was commissioned by the Southern Exposure art gallery run by artists and located in the infamous Mission district. It is notorious for local artists and Bohemians as well as all kinds of minority groups (the renowned Castro district is nearby), homeless camping out in the streets, drag dealers and prostitutes, whose traditional "turf" is the Valencia Street. In case of visualisation of the Mission emotion map, points of particular arousal are marked by colour dots ranging from black to bright red (the brightest shade is attributed to strongest emotions). The map also demonstrates that emotions "accumulate" around characteristic structures: parks or places festooned with graffiti – they often bring back memories. The Stockport project was approached rather differently. In 2007, 200 people took part in what was a two-month project which involved an action entitled Drawing Provocations. How Stockport residents perceive the city and what burning issues they see was the main interest. Similarly, the project co-implemented in 2008 by Daniela Boraschi, whose outcomes were intentionally presented as partial and incoherent due to complex and contradictory – and certainly ambiguous – local social body.

Hence, the projects masterminded by Christian Nold collectively referred to as *Bio Mapping* differ from each other in details. There are, however, some common denominators. One of them is the issue of mobility extensively addressed by reference books by J. Szołtysek.

3. Thoughts on the preparation stage

The preparation stage involves selecting participants (volunteers) and making the decision about creating an emotion map: individual for the entire route (particular neighbourhood, district), several (over a dozen, tens etc.) individual and creating a combined community map and several individual maps for designated area along the route (so called partial map). In the authors' opinion a much better solution would be to create several individual maps, as such approach would give broader perspective. At that stage, the Participant is also: trained (what to do, how to behave, which symbols to use), advised to note down everything evoking emotions and equipped with the following:
– map for a walking journey within designated area,
– markers, ball pens,
and more technologically advanced devices:
– Galvanic Skin Response (GSR) – a purpose-built device with built-in biometric sensors, recording in real-time user's emotions by analysing the skin-galvanic reactions at finger tips via the finger cuff sensor. The skin-galvanic reaction measures changing electrical resistance of the skin – according to project assumption, those changes were viewed as experiencing emotions. Operating principle of GSR is fundamentally similar to a lie detector. It detects changes in body temperature and sweat breaking on the user's palms. Galvanic Skin Response (GSR) sensor is based on the lie detector. The device records the changing levels of sweat on the skin as a measure of the user's physiological arousal. The lie detector is perhaps the most familiar example of these biometric tools. The technology it uses is so simple and available that it exists as a tool for law enforcement as well as entertainment on daytime chat shows. The lie detector requires a human operator who asks a mix of real and control questions, while monitoring the subject's breathing, blood pressure and skin sweat level in order to associate particular heightened states of arousal with a lie (Nold, 2012). The device registers only the intensity of emotions, not their kind. Hence the need for annotations to be made during the stroll. Users are also instructed to do so.
– Global Positioning System (GPS) locates the wearer's position when the GSR device detects relevant changes (emotions, feelings).

The two data sources are logged simultaneously and can later be uploaded into a custom built mapping software.

Hence, modern and advanced technology is not required to create emotion maps. Instead, the participants have to be equipped with maps, notepads, something to write with, possibly cameras (e.g. camera phones – very common these days, able to take pictures and record video).

Figure 2. The preparation stage. Creating the map using GSR and GPS tools
Source: (Nold, 2012).

118

4. Thoughts on the implementation stage

The implementation stage starts with creating an emotion map. Regardless of how emotions are being recorded – the creators/observers have to be emotionally engaged. Thus, it is paramount to take note of what and how is marked on the map – the more feelings and emotions represented by drawings, symbols and words, the better. The annotations pinned down to certain places on the map need to be understandable for the creator, but also should induce thinking and at the same time be the key for correct interpretation. The message conveyed might be ambiguous and prompt either more or less unambiguous interpretation. Notes made on the map are often – according to the authors' observations – expressed by metaphors. The metaphor is an intrinsic communication medium to all art, whilst the symbol a specific form of metaphor. The symbol expresses succinctly an idea. Explaining and decoding a symbol, in turn, often requires other pictures, often also metaphorical, which are capable of guiding our perception down the right track. Against the backdrop of these deliberations is is worth pointing out, that signs and symbols play an important role in creating environment congenial to the recipient. It can be congenial, provided we are familiar with it and understand it. Then, subconsciously, we find it safe and harmonised with our experiences. We start to perceive the environment observed as complete, integral and referring to a culture well-known to us. That phenomenon becomes much closer to our heart while being outside our comfort zones beyond familiar places, where messages communicated by alien spaces and architecture are all but clear, as we lack the symbolical, historical and sociological context. Hence, in such environment we feel uneasy. That is – probably – why towards the evening of our lives we want to return to our homeland, to approach our final days in the place (space), which speaks our language. Emerging from among all this is the issue of interpreting what has been perceived and what has been articulated.

Upon commencing the construction stage individual maps are created in accordance with predetermined guidelines. Those can be particular – imposed prisms (filters) to perceive the space through. In our opinion, this division – although methodologically justified (and facilitating forecasting) – is not a good solution. Thus, dictating concrete tasks is not advised. Instead, annotating all feelings and emotions should be allowed. It would be best, if people taking place in the experiment had various experience, but local to given places e.g. users inhabiting a city or its part. Having concluded preliminary research – lasting up to several days – a collection of maps is obtained (Figure 3).
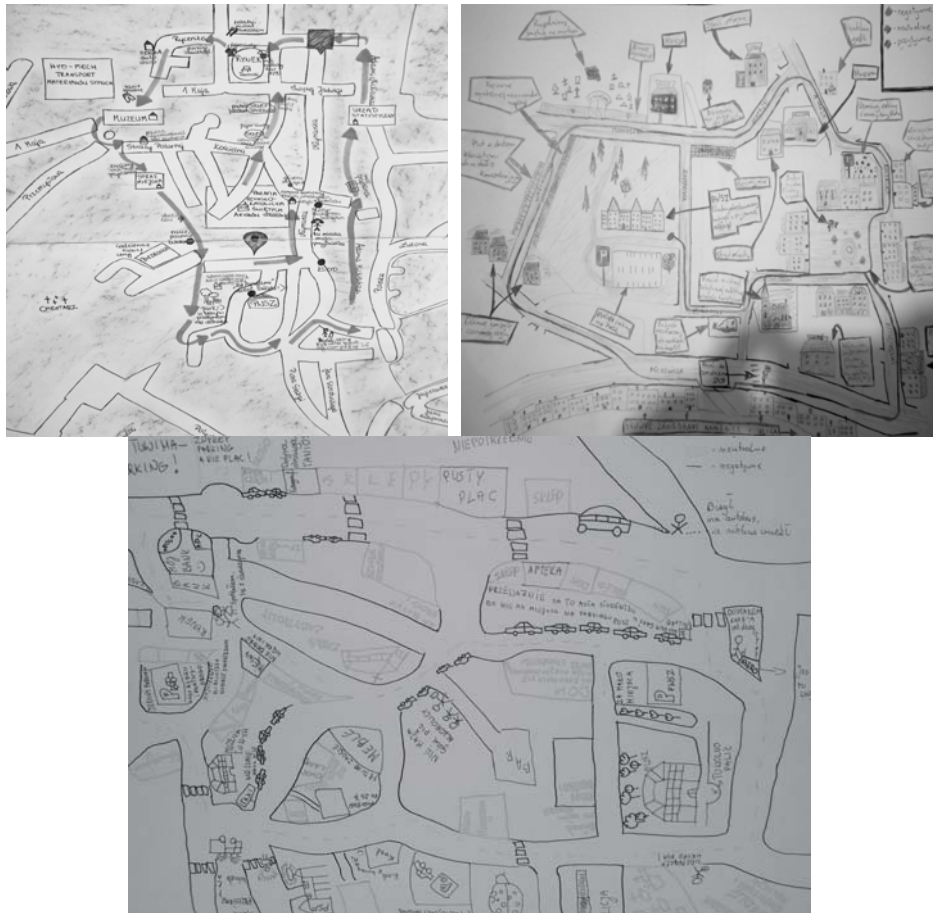
Figure 3. Example emotion maps created by individual participators

The discussion yields better results when preliminary emotion analysis is carried out by the map's creator. Consequently the map might be modified to resemble the one in Figure 4. Why such preparation is that important? The point is to manage over the course of the discussion – in principle whilst creating the complete map – to on one hand present all feelings (emotions) and on the other hand not to be influenced by other orators at preliminary stages. Participants of discussion should be presented with an opportunity to present their draft maps and ideas sheets whilst creating complete maps. The room used, should have a whiteboard or a flip chart, paper and other useful tools e.g. computers, video projectors and other. A discussion should be recorded. The session(s) should be held instantly once individual maps are finished. There should be no time limit. The session should be moderated by project manager(s).

Pozytywne

1. Mała i cicha ulica, na której obecnie mieszkam.
2. Dom kultury, jak byłem mały uczyłem się tu grać na gitarze.
3a/3b. Moja dawna szkoła podstawowa, ciekłe wspomnień z dzieciństwa.
4. Osiedle robotnicze, miejsce w którym się wychowałem
5. Sklep nocny, często ratuje życie i zawsze można spotkać kogoś znajomego

Neutralne

1. Stary młyn, całkiem ładnie wygląda.
2. Dom pomocy społecznej.
3. Posterunek policji.
4. Supermarket, jest blisko mnie.
5. Stara muszla koncertowa, biedyś były tam fajne imprezy.
6. Rampa przeładunkowa zawsze stoi tam mnóstwo ciężarówek.
7. Odnowione boisko.

Negatywne

1. Fabryka waty szklanej, jej bliskie położenie bywa uciążliwe.
2. Stary dworzec PKP, nie ma tam nawet kasy biletowej.
3. Światła, na których są duże korki.
4. Stara dzielnica, slumsy, bardzo niebezpieczne miejsce.
5. Przystanek autobusowy, na którym śmiertelnie pobito mojego kolegę.
6. Ruiny po dawnym kinie, wygląda strasznie.
7. Ruiny po hucie szkła, również nieciekawe miejsce krajobrazu.
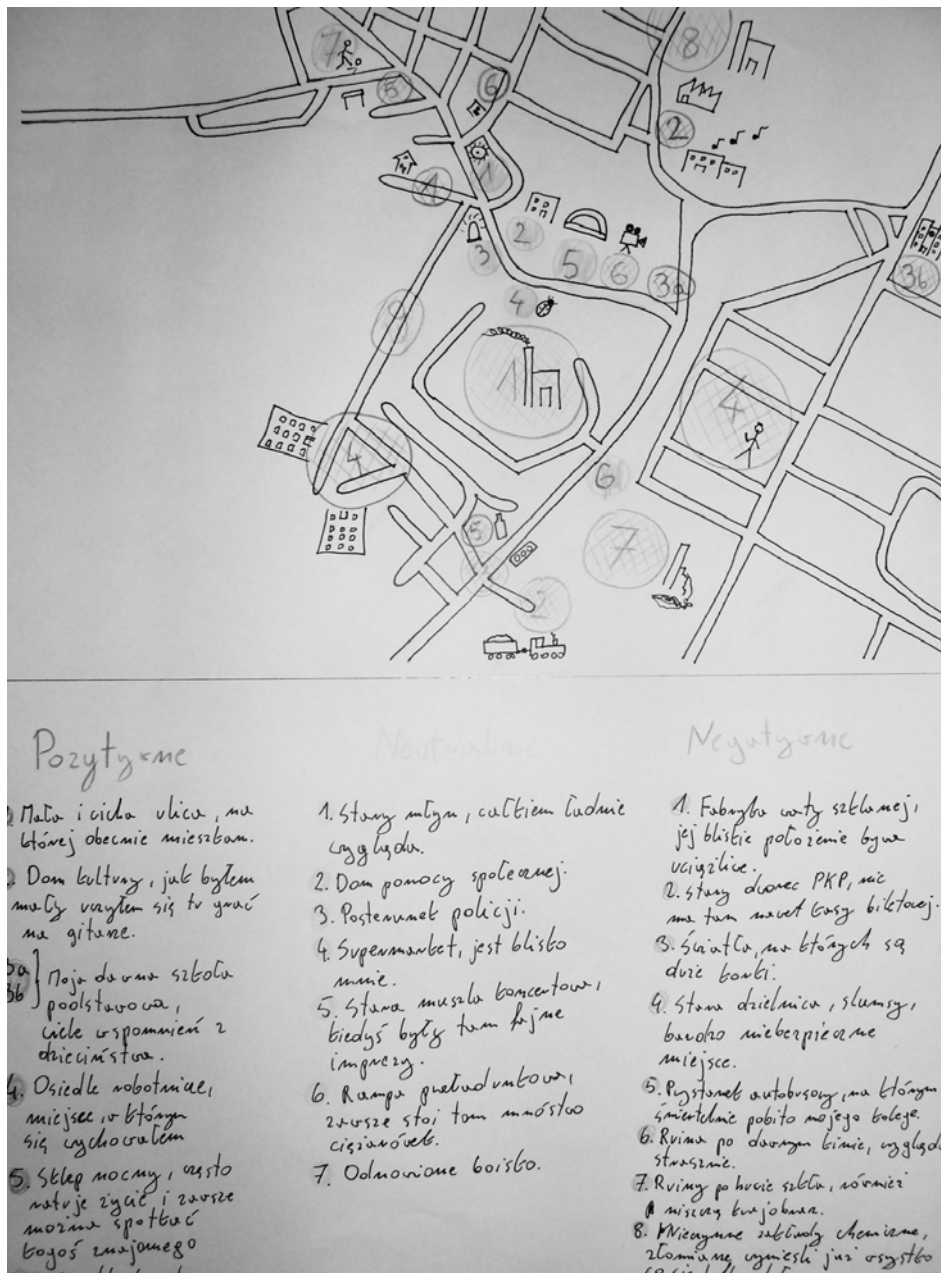8. Nieczynne zakłady chemiczne, złomiarze wynieśli już wszystko co się dało (...)

Figure 4. Map modifications prior to discussion on urban spaces.

The created complete emotion map (Figure 5) gives grounds to draw up – based on negative and positive feelings – draft actions – outlined prospective projects. Considered are both the feasible and unrealistic projects. Each and every one should be discussed.

121

Figure 5. Complete emotion map

The procedure features another stage particularly difficult in terms of implementation – verification of projects' social acceptability. That action poses also a significant challenge, thus is rarely seen through. Although it goes beyond the scope of this paper, it is the subject matter of research conducted by the authors under the research project *Unconventional applications of logistics. The integrative role of logistics in unconventional applications,* implemented as part of statutory activity concerning research potential of Katowice University of Economics in 2010-2013.

Conclusions

Personal experiences of authors of this paper and literature review of still very scarce source literature on the subject matter show that the most negatively perceived places are related to congestion and accidents. Those are zebra crossings, crowded pavements, notorious areas and generally car-related areas, etc. The number of negative emotions hot spots related to urban logisticians' work is truly astounding. Hence, in authors' opinion an emotion map or in other words bio mapping is a great tool to diagnose and determine urban spaces which should be subject to repair work related to urban logistics.

References

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Nold Ch. (2012): *Emotional Cartography. Technologies of the Self*. Ed. Ch. Nold. Creative Commons, http://emotionalcartography.net.