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Mapping in the Context of Primary Social and Science Education: Children, Participation and Spatial Power Relations

Jana Pokraka & Inga Gryl***

Abstract

This paper focuses on how children perceive (public) space and the power dynamics within them. The concept of “Education for Spatial Citizenship” (Schulze et al., 2020) is used as a theoretical and methodological framework for promoting life-world-oriented and reflexive learning concerning children's participation and their roles in public space. The article proposes a mapping-based participatory learning environment, in which children's desires and visions intersect or conflict with their real-life spatial experiences. The empirical study presented in this article took place in Essen, Germany, and was conducted with a total of 40 primary school children, divided into seven groups. Although the study is rooted in geography education and primary social and science education, the findings of this research are also relevant for civic education and social science education. They offer a broader perspective on student-teacher relationships and interactions in educational settings.

Keywords

mapping, primary education, spatial citizenship, participation, participatory learning environments

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1 Introduction

The article focuses on the exclusion of children from formalised participation processes, even when adult stakeholders express support for involving children in planning processes. The emphasis is placed on the context of children's everyday spaces. Similarly, children are frequently prevented from recognising the value and potential of their own spaces for taking action (Barron, 2022; Ohl, 2009; Jans, 2004). Institutionalised spaces designated for children often restrict and formalise their opportunities for play and learning within these boundaries. For instance, traffic education may revolve around the hegemony of automobiles. However, these limitations arise not only from adult-centric perspectives and assumptions about children's (legal, biological) immaturity (Prout & Allison, 1990), but also from other intersecting categories of difference such as gender, ethnicity, and socioeconomic disadvantage (Winker & Degele, 2009).

The potential of critical spatial learning and Public Participatory GIS (PPGIS) (Elwood, 2009) in the realm of civic engagement has been explored through numerous case studies (Ramasubramanian, 2010; Travlou et al., 2008). Specifically, research that utilises maps to investigate young people's participation has proven valuable in overcoming adultist biases and gathering youth perspectives on various topics such as traffic or accessibility (Torres et al., 2020; Stephens et al., 2017; Maxey, 2004). PPGIS serves as a powerful tool to visually represent marginalised spatial perspectives, thereby challenging dominant spatial discourse. It has been successfully used in the realm of activist citizenship education with children and young people to support spatial appropriation (Bagheri & Zarghami, 2022; Egli et al., 2020; Elwood & Mitchell, 2013; Ramasubramanian, 2010). In the realm of volunteered geographic information (VGI) and public participation geographic information systems (PPGIS), education for Spatial Citizenship (Schulze et al., 2020; Gryl & Jekel, 2012) leverages digital geomedia tools like user-friendly mapping applications and geo-referenced social media posts with place-related hashtags. This approach aims to challenge and ultimately dismantle existing power hierarchies in everyday space utilisation and spatial planning.

According to Foucault (1984) and Butler (2014), power and power relations do not solely arise from the distribution of material wealth but are also shaped by discourse. Discourse serves as a means of societal normalisation, governing what is perceived as normal or abnormal. When seen as a performative act, discourse influences individuals' sphere of action, enabling them to reflect upon and challenge these norms through acts of centralisation and decentralisation (ibid.). By reconstructing and questioning what is considered "normal" and deviant from this normalcy, it becomes possible to challenge societal norms.

Geomedia-based *communication* competences fostered through Spatial Citizenship can challenge and disrupt normalised perceptions of space. This helps attach alternative meanings to space and thereby change spatial practices.

Hence, the objective of the research presented in this paper is to establish a theoretical foundation and methodological framework for analysing communication facilitated by geomedia regarding opportunities for spatial participation, particularly in collaboration with primary school children. The tools employed for this purpose included children's drawings, respective maps, and an intuitive web-mapping application. These tools served to stimulate conversations about the children's spatial desires, as represented by their utopian visions, and how these aspirations relate to the power dynamics they perceive in their real-life

experiences. Our analysis focuses on the map-based reasoning and communication as cognitive processes and the resulting consequences that were prompted by the geomedia that the children created. In doing so, we aim to address the following research questions¹:

A: What perspectives do the participants express regarding public and private space in relation to childhood?

B: Which power relations, manifested through categories of difference, dominate the participants' discussions?

After providing an overview of the theoretical foundation of Education for Spatial Citizenship, we then delve into its "margins," which encompass children's spatial practices in relation to participation conditions and (intersectional) power relations. Additionally, we briefly position our research within the context of primary social and science education. Subsequently, we outline our methodology, analysis, and findings based on the research conducted. Finally, we engage in a discussion that analyses our own research and data analysis methodology, as well as the implications for teaching and learning in general. We also highlight potential areas for future research.

2 Background

2.1 Approaching an Education for Spatial Citizenship

Education for Spatial Citizenship (Schulze et al., 2020) aims to cultivate competences for mature participation in spatial and societal decision-making and negotiation processes through the use of (digital) geomedia. The term geomedium encompasses various types and formats of geo-referenced information, extending beyond traditional maps to include geo-referenced or geo-hashtagged images found on social media. Geomedia serve as tools for everyday activities, providing orientation for navigation or facilitating communication through social media. Moreover, they play a role in negotiation processes and political and societal decision-making, including both formal and informal citizen participation processes (ibid., Leszczynski & Elwood, 2015).

Spatial Citizenship occupies a unique position at the intersection of two distinct domains: the spatial realm, concerned with relational social geography (Lefebvre, 1991; Löw, 2001), and the concept of citizenship education, which acknowledges the growing informality of young people's participation (Bennett et al., 2009).

In his work "The Production of Space," Lefebvre presents a perspective on urban space that emphasises power dynamics. He argues that urban space is constructed based on individual and institutional interests, imbued with meaning, and becomes a manifestation of power and control over those interests across three levels. Meaning is associated with space, and this meaning becomes evident in everyday spatial practices and communication, particularly through the utilisation of digital geomedia. Löw (2001) defines space as a result of human action rather than its cause. Consequently, the (re)construction of space is viewed as a social practice, intrinsically intertwined with power relations and the distribution of resources. These

¹ The research presented is partly included in a dissertation project (Pokraka 2021).

(re)constructions are shared through pervasive geomedia, particularly through the social web, and acquire meaning through the reproduction of geo-localised information (Fischer, 2014).

Within the context of citizenship education, Spatial Citizenship recognises the increasing significance of informal participation practices, which have been amplified by the emergence of social media and Web 2.0 since the early 2000s. Hyslop-Margison and Thayer (2009) highlight the decline of formal participation and argue for the shifting of citizenship education beyond traditional notions of "fraternal bonds and relationships that exist within the 'public' domain". They emphasise the importance of considering citizenship in a broader sense, especially because a narrow and formal understanding of citizenship (education) can perpetuate exclusionary and even exploitative dynamics (Wood, 2015).

Bennett et al. (2009) examine the shift of participation from formal to web-based forms of global, active citizenship. This form of citizenship is characterised by activist engagement in global social media networks and spheres of action, as exemplified by movements like #metoo. However, these global phenomena often have roots in material and specific local contexts, as seen in movements like Fridays for Future or #Blacklivesmatter. Spatial Citizenship focuses on the spatial implications of citizenship education, and on their potential for emphasising local practices. It aims to create alternative frameworks that challenge global hegemonies (Apple, 2003).

Drawing upon the spatial and citizenship domains, Education for Spatial Citizenship encompasses three interconnected areas of competence that appear crucial for mature participation in both spatial and societal matters (Schulze et al., 2020). These areas are as follows: a) reflexive competencies pertaining to the power dynamics inherent in geomedia, as well as self-reflexion regarding one's own consumption and production of geomedia; b) communicative competencies; and c) participation competencies. In our analysis, we primarily focus on the first and second areas of competence, specifically examining how students communicate alternative spatial visions through the use of geomedia, their ability to present arguments and engage in reflection. Consequently, this study focuses on a distinct aspect of citizenship education, namely that which addresses informal and socio-spatial participation.

Education in the domains of space and citizenship necessitates a thoughtful examination of power dynamics that are intertwined with their respective practices. The production of space, as well as formal and informal civic engagement and participation associated with concepts like nation-states, require critical contemplation within educational settings, particularly at the primary school level. It is important to acknowledge that primary schools themselves can be sites of power, evident in the dynamics between students and teachers. Furthermore, students occupy positions within networks of power relations as they fulfill societal roles. According to Foucault (1984), individuals and institutions are mutually linked in reciprocal power relations. Actions have the potential to generate power, while power can also spur concrete actions. This fluid and ambivalent understanding of relational power presents opportunities for resistance and nonconformity (ibid).

2.2 *The margins of Spatial Citizenship: Children's spatial practices, participation and (intersectional) power relations*

De Certeau (1988) posits that everyday practices of consumption generate new forms of knowledge and spatiality. This means that the ways in which people utilise objects in space can fundamentally transform their assigned meaning. He distinguishes between strategies and tactics, whereby strategies involve asserting one's interests and power in dominant spaces (e.g. a teacher's authoritative role in the classroom), while tactics refer to actions in spaces of resistance, whereby individuals must navigate rules imposed upon them by external powers (de Certeau, 1988). However, Gallagher (2011) suggests that a more nuanced understanding of strategies and tactics is necessary when examining power dynamics in the classroom. Viewing power as a flexible and fluid form of agency, it becomes apparent that children, through their spatial practices, can establish their own spheres of dominance within externally controlled spaces. Therefore, an emancipatory approach to participation requires recognising children's capability to autonomously appropriate spaces and employ modes of resistance and influence to challenge external claims to power (Jeffrey, 2012; Gallagher, 2011).

Nevertheless, generational power dynamics between children and adults, along with their spatial manifestations, become apparent through the spatial exclusion of children, particularly in public space, especially when it comes to participatory processes (Thomson & Philo, 2004). Often, children's involvement in these processes is merely tokenistic, serving decorative purposes only (Hart, 1992). The 2003 State of the World's Children Report describes children and youth as democratic citizens in the *process of development* (UNICEF, 2003 in Skelton, 2009), which contradicts young people's own understanding of themselves as active citizens who have an impact on their own life-worlds, i.e. an understanding of *childhood as social construct* (Skelton 2009). In fact, children and young people are already engaged in informal processes of political participation and the formation of opinions, both in online and offline communities (Bennett et al., 2009), despite their legal status of being considered immature.

The social construction of childhood, which emphasises perceived immaturity and the need for protection, has had an impact on children's ability to navigate and engage with the urban environment. Tonucci and Rissotto (2001) examined the increasing institutionalisation of children's socialisation into urban spaces, resulting in a lack of autonomy and the exclusion from public space that are deemed inappropriate and unsafe for children. What was once a "playground city" has transformed into a controlled and predictable "sandbox city"², where play is limited and tightly regulated (Tonucci & Rissotto, 2001, p. 410). This trend aligns with the architectural neutralisation of urban spaces in (post-)modern urban planning (Sennett, 2009) and is reinforced by paternalistic generational relationships (Pokraka & Gryl, 2018) within education generally, and within the context of Spatial Citizenship specifically³.

² The development from playground to sandbox city hints at the decline in both available space for play/exploration and the increasing lack of variety of play.

³ Simultaneously, this approach of paternalistic protectionism often results in public space being primarily designed to meet the needs of adults, disregarding the requirements of children. As a consequence, the physical design of public space can pose a threat to children, particularly when considering the overwhelming presence of motorised private transport.

When formulating normative educational goals, such as the mature appropriation of space in Spatial Citizenship, it is crucial to critically examine the implications. Does the call for mature and autonomous engagement with space contradict institutional and educational authority? While it is impossible to entirely avoid paternalism in the realm of Spatial Citizenship education or any educational approach for children or adults, we can define the relationship between maturity and paternalism using Adorno's concept of authority (1971). Authority is not an entity that exists independently, but rather adapts and limits itself as individuals mature. This necessitates ongoing self-reflection and transparency in relation to authority and its inherent paternalistic structures. Authority is always in a dialectical relationship with maturity, providing support while also actively recognising the spaces of resistance where individuals challenge or question established authority.

In contrast to the paternalistic relationships observed within educational contexts, den Besten (2011) highlights the increasingly democratic and reflexive nature of children's participation within private spaces structured by family dynamics, which contrasts with institutional heteronomy. Communication between children and their parents is characterised by negotiation processes conducted on equal terms. Gallagher's (2011) research on children's participation in primary schools also reveals the presence of multiple and fluid power dynamics among children, as well as between children and teachers and researchers. In these settings, exclusionary processes can arise based on different age groups and gendered relations. Therefore, it is promising to consider the interplay between individual and structural processes of exclusion and marginalisation (Verloo, 2006), incorporating an intersectional perspective (Crenshaw, 1989; Winker and Degele, 2009).

In addition to age-based variations in children's spatial experiences, categories such as ethnicity, class, and gender also influence their participation and use of space within the research context (Ramasubramanian 2010; Garske 2013). Ethnicization, or racialization, continues to contribute to prejudice and narratives that depict certain communities as having 'dysfunctional life worlds' (Ramasubramanian 2010). These narratives, propagated through various media platforms, contribute to a widening gap between the perceived mainstream society and those affected by these attributions. The portrayal of areas like Duisburg-Marxloh in Germany as 'deprived areas' in media discourse contradicts the nuanced and varied self-perceptions of the people who live there (Cöster, 2009). Research on identity and discrimination is frequently criticised for exclusively focusing on identity politics without recognising the embeddedness of class-based discrimination and exclusion within the economic system (Garske, 2013). However, social theory approaches (Soiland, 2008; Verloo, 2006) have emerged more than a decade ago to bridge the gap between research on macro-structural power relations and the exploration of identity politics and individual experiences of discrimination. The intersection of gender and age also plays a role in shaping spatial narratives communicated through (digital) geomedial. According to Leszczynski and Elwood (2015), there is a noticeable overrepresentation of adult, well-educated males on the VGI platform OpenStreetMap. This skewed demographic leads to a limited range of perspectives in the platform's content and subsequently affects the way virtual and physical spaces are constructed and represented (Haklay & Budhathoki, 2010).

These categories, such as age, ethnicity, class, and gender, are just a few examples that can be expanded upon to explore various research interests. The objective of acknowledging different intersecting forms of inequality and exclusion, and understanding how they manifest spatially, is to increase awareness and propose strategies for both individual and collective

resistance. For instance, it encourages students to question and challenge spatial inequalities and provides opportunities for them to create alternative maps or counter-narratives that defy dominant geomedial interpretations (Ramasubramanian, 2010).

2.3 Participation in Space, Space Construction, and Mapping in Primary Social and Science Education

Geomedia are invaluable tools for teaching and learning about space, particularly in the context of Primary Social and Science Education. They play a vital role in developing foundational geographical literacy skills (Schmeinck, 2013). In a study by Bach and Peschel (2019), primary school children's mapping abilities were assessed using a mapping application within the Kidipedia platform. The research revealed that digital maps had a more significant positive impact on the development of media and geography-related skills compared to analog maps. The German Primary Social and Science Education curriculum (GDSU, 2013) incorporates five subject-specific perspectives, including geography, history, natural sciences, social sciences, and technical instruction.

Additionally, the curriculum includes five multi-perspective topics, one of which is 'media'. Media education within the curriculum aims to integrate traditional and digital media into classroom practice, emphasising learning with and about media as important competencies for exploring the world (Gervé & Peschel, 2013). Within the curriculum's geographic perspective, geomedia-based learning aims to enhance students' spatial orientation skills through the use of maps (GDSU, 2013). When combined with the social sciences-related participation competencies within the curriculum, which encourage students to actively engage in democratic life, recognise and reflect on social tasks and problems, and contribute to their solutions (GDSU, 2013), it becomes evident that geomedia-based learning processes have a place in primary education and in those subjects that revolve around questions of politics and ethics. Given the significance of methodological, content-related, and reflective competencies associated with digital geomedia in secondary geography curricula (DGfG, 2020), fostering geomedia and participation-based learning is essential.

3. Methodology

3.1 Research design

The workshops took place in the afternoon day-care programme of three primary schools in Essen, Germany. The main objective was to provide a platform for participants to reflect on and discuss their perspectives on their own neighbourhoods and power dynamics within their lived experiences. This was accomplished by comparing their perceptions with their own drawings of their ideal public space, represented as utopian cities. To achieve this, the workshops employed two different methods derived from neocartography and Public Participation Geographic Information Systems (PPGIS).

The first method used was subjective mapping (Daum, 2011), which allowed participants to visually represent their own spatial constructions or perceptions. Unlike traditional cartographic conventions, subjective mapping provides a blank canvas for individuals to create cognitive representations of their personal understanding of space and place. In this case, the focus was on depicting the children's *imagined* spaces rather than their *actual* cognitive representations of reality. The second method involved conducting a mapping excursion

(Pettig, 2016), using a user-friendly web-based mapping tool. This digital mapping tool was utilised to enhance the participants' ability to communicate their spatial observations effectively. The data analysis focused on map-based argumentation and communication, considering these processes and their cognitive consequences resulting from the applied mapping techniques.

The initial phase of the workshop involved a group discussion centred around the question, 'What would a perfect city for children look like to you?' This discussion aimed to stimulate research ideas for subsequent excursions, where participants would compare utopian concepts with real-life urban design. Following the discussion, the children created subjective maps depicting their vision of the ideal city for children. They then presented their maps to the group, highlighting prominent features. These features were collectively discussed and recorded on index cards by the participants, which would be used for reflective purposes in the final phase of the workshop.

The second step involved a mapping excursion, whereby each participant was provided with a tablet for using the mapping tool Survey123 by ESRI ArcGIS. The excursion commenced at the school grounds, aiming to explore the surrounding areas and identify places and objects that the students considered relevant for children. They were encouraged to assess the positive or negative connotations of these locations and items, considering their previously expressed wishes. The mapping tool used during the excursion included three key features. First, there was a geo-location feature that allowed participants to pinpoint the exact location of the place or object they wanted to document. Second, they were given the option to capture or upload pictures of the geo-located place or object. Thirdly, there was a text box provided for students to enter a description of the respective place or object. The data collected by each student using the Survey123 tool was then integrated into a single collective map. This map contained all the data points contributed by the participants, effectively combining their individual findings into one comprehensive dataset.

Thirdly, the workshop concluded with a summarising group discussion that aimed to connect the findings from the first and second phases. The children reviewed their notes and the collective maps created during the mapping excursion. Based on their reflections and desires for their areas, they created posters focusing on the research area. These posters were exhibited within the schools at the end of the workshops.

The group discussions (phase 1 and 2) were audio-recorded and transcribed. and a student assistant accompanied all of the workshops as a participant observant.

3.2 Study Participants and study area

The study involved a total of 40 participants, divided into seven groups, with ages ranging from 6 to 10 years old. The participants were sourced from three different primary schools located in Essen. The groups consisted of both boys and girls, with only one group being single-gendered. The participants were from mixed-age groups, except for one group.

The workshops took place in two different neighbourhoods of Essen: Altenessen (groups 1 to 4) and Rüttenscheid (groups 5 to 7). Essen is a city in Western Germany, historically known for its coal-mining industry but has recently undergone significant structural transformations. The city is economically and socially divided into two parts, separated by a major motorway. The southern area, Rüttenscheid, is generally more affluent and considered middle-class, whereas

the northern area, Altenessen, is more socio-economically disadvantaged. According to data published by the City Administration (2011), there are notable disparities between these two neighbourhoods. For example, in Rüttenscheid, approximately half of the students transition from primary school to an academic high school or grammar school. In contrast, only one quarter of students from Altenessen move on to this type of school. Additionally, 11% of students in Altenessen transition to lower secondary education, while the average in Rüttenscheid is 2.1%.

The selection of the different school locations was not intended to reinforce stereotypes. Instead, it was chosen to avoid research bias and provide an opportunity to challenge any negative assumptions or ascriptions associated with these neighbourhoods.

3.3 Data Analysis

The transcripts of the discussions were analysed using the documentary method of qualitative analysis, as outlined by Bohnsack et al. (2013). This method is particularly suitable for extracting shared beliefs and attitudes that emerge during group discussions. The analysis incorporated the written transcripts of the discussions, along with the contextualisation provided by the participant observation notes.

The documentary method focuses on exploring individuals' everyday knowledge and the social conditions that shape their practices. It seeks to understand how individuals perceive and construct their social realities. Unlike traditional qualitative analysis methods that emphasise individual argumentation, the documentary method looks for common ground, dominant discourses, and attitudes within a group. It aims to highlight the negotiation processes and the co-construction of particular topics, making it well-suited for analysing the social construction of the learning and exploration process described in this study. However, we acknowledge and will critically reflect upon the limitations that arise from the focus on group-level perspectives.

The analysis was conducted progressively and systematically for each of the seven groups involved in the study. Firstly, the students' implicit knowledge was reconstructed. Contrasts and abstract categories were established to compare and relate different cases and recognize patterns, seeking points of comparison ("tertium comparationis"). In this stage, we carved out the children's horizons and counter-horizons to establish our category system. The final step involved creating an empirical typology based on specific topics or orientations that represented the variety of reconstructed perspectives across the different cases. To ensure inter-coder reliability, different parts of the data analysis were compared and discussed among three groups of researchers at various stages of the analysis process⁴.

3.4 Ethics and consent

All the participants in the workshops joined voluntarily, and the study was conducted with the consent of the heads of schools and day-care facilities. Prior to the workshops, participants were provided with information about the research project's aim, including the recording of discussions and the analysis of their written/drawn results after anonymisation. It was made

⁴ A more in-depth illustration of the research methodology is provided at Pokraka (2021).

clear to participants that their participation and sharing of insights were completely voluntary and they had the right to withdraw their consent at any time.

As the participants were minors, their legal guardians were also provided with detailed information about the research, including the background, scope of data collection, and analysis procedures. Written consent was obtained from the legal guardians, affirming their understanding and agreement with the study.

4 Findings

For each research question, a typology of different sub-categories was developed, based on the data collected, and the discussion groups were assigned to these categories. The types that emerged reflect the dominant discourses and shared orientations observed within each group (each group representing one case). However, individual narratives that did not align with the dominant discourse were not included in the analysis.

As the group discussions were based on the children's drawings of their utopias and the specific excursions they took, not all discussions focused on the same issues. Consequently, not all groups are represented in each of the different sub-categories.

To provide an illustration, a typical example was included for each main category (A and B). These examples help to demonstrate the characteristics and dynamics within each category.

4.1 Perspectives on Private and Public Space

When discussing the children's perspectives on urban space (Research Question A), participants made a clear distinction between private and public space. These two spheres are easily distinguishable from each other due to their distinct functions (refer to fig. 1).

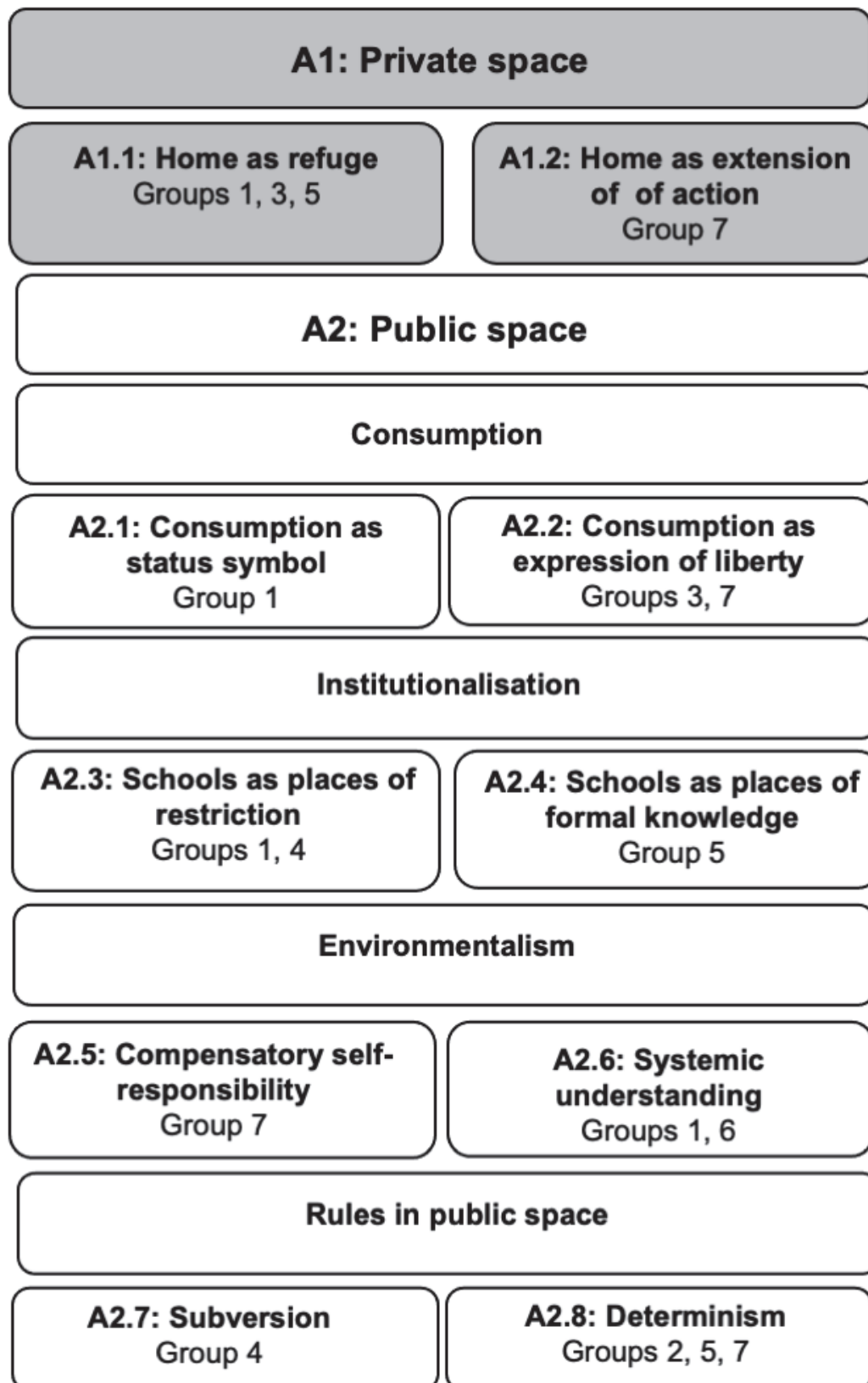


Fig. 1: Typology for perspectives on urban space (authors' own work).]

In general, private space is seen very positively in relation to the family home. There are three cases (A1.1) where the home acts as a refuge from potential threats in public space. In one case, the home is equipped with smart infrastructure. These threats are connected to the idea of home as an extension of an individual's personal sphere of activity (A1.2). The private garden, for example, is viewed as a protected playground where children can play freely in a safe environment.

In contrast, the consideration of public space primarily revolves around its specific functions, as perceived by children. These functions encompass areas of consumption and institutions, accompanied by the associated rules and environmental concerns. Regarding consumption, material possessions are regarded as status symbols, and places of consumption are viewed as mere displays of wealth. For instance, participants in the workshop consistently expressed a strong desire for luxury fashion brand stores throughout the duration of the session (A2.1).

Consumption is also appreciated as a form of freedom. This is evident in the children's desire for opportunities to consume without adult supervision. This desire reflects the findings regarding generational relations in the results section. When it comes to institutions, participants' attitudes towards the exertion of institutional power, particularly through schools, are made clear. School, mentioned prominently in all discussions, is seen as a place of restriction. Participants express dissatisfaction with the school's framework, especially the surveillance by teachers and staff. Some students even feel that they can only escape this surveillance by using the school's bathrooms. At the same time, school is seen as a powerful entity in terms of knowledge transfer. Type A 2.4 reflects the understanding that school is the institution that imparts the only form of appropriate and correct knowledge.

Regarding environmental concerns, which emerged as a category through empirical analysis, climate change occupies a dominant position in the children's perspectives. What sets their attitudes apart, however, is not so much the assessment of its importance, but rather their approaches to tackling climate change. One type (A2.5), represented by a single case, strongly subscribes to the notion of compensatory self-responsibility, attributing the responsibility for addressing climate change solely to the individual. Conversely, two other cases demonstrate a systemic understanding of the issue (A2.6), recognising the intricate interplay between different levels of impact and acknowledging the interconnection of individual actions with political dynamics. They critically question the effectiveness of relying solely on individual efforts and reflect on the implications of electricity generation within the context of electric mobility.

When it comes to dealing with dominant rules in public space and the potential negotiation of these rules, there are two distinct approaches: subversion and determinism. Both approaches acknowledge that rules are established and enforced by external institutions of power, which were evident during the map-enhanced field trip, such as through signs in public space. However, the "subversion" type (A2.7) believes that these rules can be broken based on an individual's judgment of their appropriateness. For example, feeding ducks in the case of group 4 (authors' translation).

Researcher: [Can you think of] Something you are allowed or not allowed to do that you find odd? #01:07:10-0#

Participant40: #1 No. #01:07:09-3#

Participant38: Yes. #01:07:09-5#

Researcher: Can you give me an example? #01:07:11-0#

Participant38: For example, when you are not allowed to feed ducks. #01:07:13-7#

Researcher: Ok. #01:07:14-1#

Participant38: Then I will always go there and feed them. #01:07:16-9#

Researcher: Mhm. #01:07:17-6#

Participant38: Because it is a little sad. They are living beings, too. They need food, too. #01:07:24-1#

Researcher: Ok. #01:07:24-4#

Participant38: Because they are not simply for play. You need to give them food. #01:07:32-0#

Participant39: And look, I want to feed them and then there it says, this thing says you are not allowed to feed them. And I tell her 'Huh? Why? Are you stupid?' And then you are not allowed to feed them bread. #01:07:48-0#

In this scenario, participants provide a normative justification for their subversive action based on empathy. They feel that the rule against feeding ducks lacks a compelling reason, despite its legitimacy in terms of concerns like animal poisoning, overpopulation, or water eutrophication. The cases falling under the category of 'determinism' (A2.8) also consider moral or normative factors when it comes to existing rules. However, these groups primarily emphasise the importance of adhering to the established rules and exhibiting obedience towards them. They prioritise the importance of following established rules over personal judgment or empathy-based justifications.

4.2 Power Relations and Categories of Difference

The main categories that emerged during the participants' discussion (Research Question B) were socio-economic status, gender, and generational differences. The category of gender intersects partially with generational differences. (see fig. 2).

The category of socio-economic status is further explored through the types of materialism and professionalism. Materialism (B1.1) plays a significant role in relation to the category of consumption in the context of public space (A1). Possessions and wealth are fundamental categories for satisfying needs. The possession of material goods, such as Pokémon trading

cards, serves as an expression of one's socio-economic status and independence from parental supervision and authority. On the other hand, the case characterised by professionalisation (B1.2) holds the belief that a certain level of professionalisation is necessary for attaining an acceptable socio-economic status. This approach is more process-oriented.

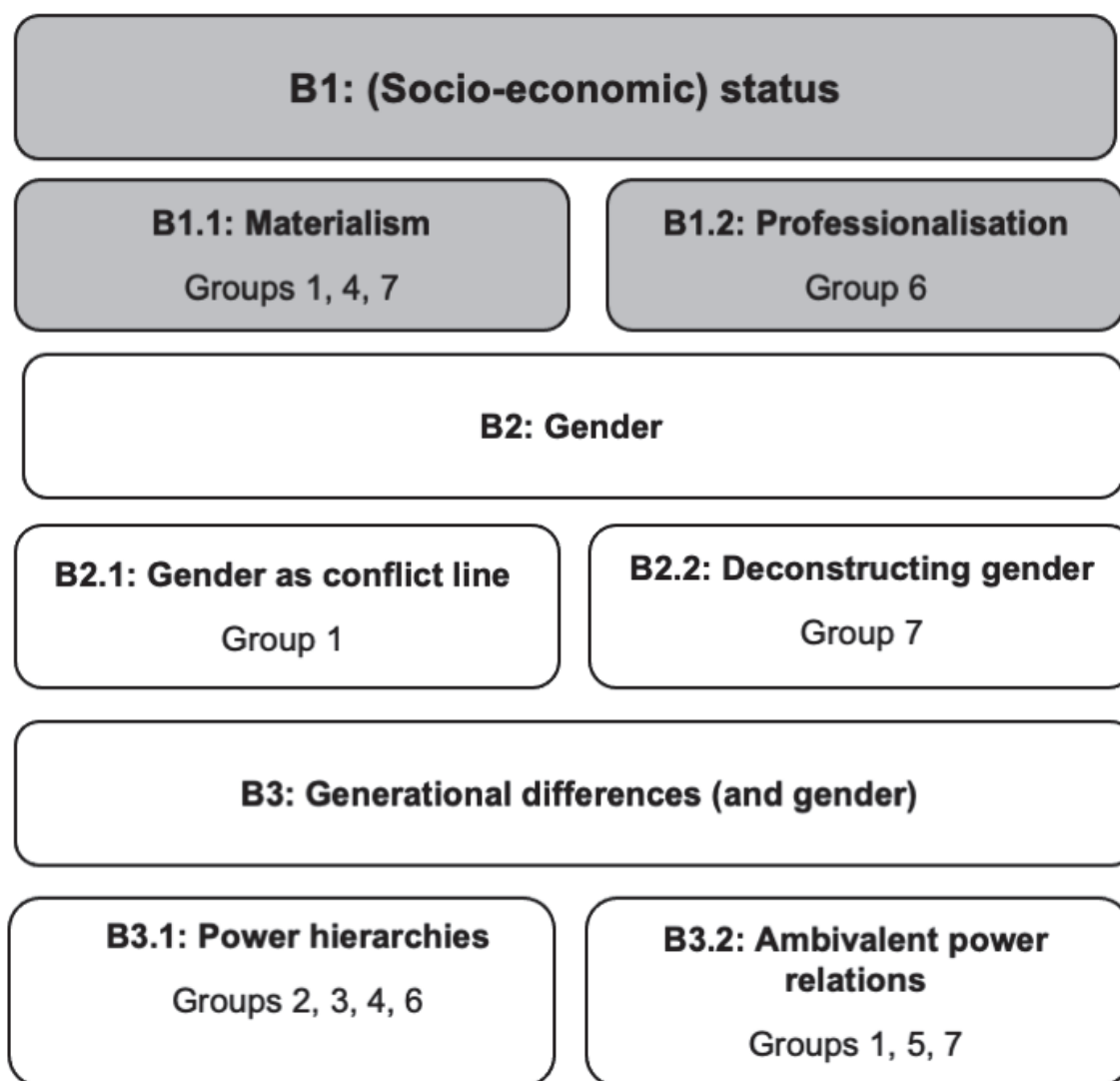


Fig. 2: Typology for the (re-) production of categories of difference (authors' own work).]

In relation to gender, it was observed that only two cases specifically engaged in negotiations around this category of power. In one case (B2.1), gender emerged subconsciously, leading to a heated debate regarding articulated gender-related categories of difference. This debate involved the reproduction of categories like 'girls' versus 'boys', with the latter group being ascribed with undesirable attitudes that were perceived as disrupting the workshop proceedings and classroom order by the former group. The other case (B2.2) took a deconstructive approach towards gender-related ascriptions. Participants in this case reflected upon and rejected stereotypes that they had previously reproduced based on their own subjective experiences. They challenged the notion of specific interests being tied to

gender. This is exemplified by a section from group 7 where participants challenged the alleged existence of specific interests for girls or boys (authors' translation):

1:06:31 - 1:06:52 Participant21: And it would also be great if there were always two children's mayors, one boy and one girl, and then the boy gets to decide something and the girl.

An interesting observation is that certain participants proposed the concept of having two children's mayors, one male and one female, each with the authority to make decisions on different matters. This suggestion stems from a desire for equal representation and participation, ensuring that both genders have a say in decision-making processes. By having both a boy and a girl serve as mayors, it promotes gender equality and encourages the inclusion of diverse perspectives in the decision-making process.

1:06:53 - 1:06:55 Researcher: And why do you need a boy and a girl?

1:06:56 Participant23: I have no idea.

1:06:58 Participant 22: So that it is fair?

1:07:01 - 1:07:16 Participant21: So the girls, well the woman can command the other women and the girls and the man can command the other men and chil-, the boys.

1:07:16 Researcher: o. k.

1:07:18 - 1:07:47 Participant21: It would also be unfair if there was a boy as a mayor and then he only builds boys' things and not for girls and that's unfair. That's why there should be a girls' mayor elected and then there's dolls and such.

1:07:47 - 1:07:50 Researcher: But maybe there are also boys who like dolls?

1:07:51 - 1:07:56 Participant23: Yes there are. I also know someone who likes dolls and he's my friend.

1:08:00 - 1:08:04 Participant21: I also have dolls but I do not play with them that often.

1:08:06 - 1:08:07 Participant24: Yes, girls also do play with boys' things.

1:08:07 Participant22: I do not like dolls.

The most important category of difference that emerged was in relation to generational dynamics between adults, particularly parents, and children. Within this category, we can distinguish between a hierarchical understanding of power (B3.1) and an ambivalent understanding (B3.2). A hierarchical understanding of power is characterised by perceiving adults as supervisory and protective authorities. The notion of adults limiting children's autonomy in decision-making and action is mostly rejected, while affirming the role of adults, particularly mothers, in providing protection. This affirmation is particularly evident at the intersection of age and gender categories. It is important to note that this affirmation does

not necessarily arise from the reproduction of experiences of needing protection from parents, but rather from the participants' construction of potential threats in public space. Furthermore, the perception of parents as protective guardians was shaped by reflecting on their own abilities and recalling experiences of autonomy, especially in their own consumption spaces where parents played a lesser role.

On the other hand, in the context of ambivalent generational power relations (B3.2), there were instances of power-subversion within Case 1. The researcher attempted to assert authority by alluding to the presence of an audio recorder, suggesting that any sexually explicit remarks would be recorded. In response, participants employed tactics of subversion by hinting at the research context itself and highlighting the potential harm it could cause to the researcher's credibility if explicit details were to be published.

5 Discussion

During the participants' discussions, there was a clear emphasis on the differentiation between private and public space. The distinction was primarily highlighted through the positive attributes associated with private space, such as security, increased freedom of action, and personal liberty. In contrast, negative attributions towards public space were not as prominent.

Valentine (2004) has previously touched upon the significance of differentiating between private and public space in terms of the perceptions of security and danger. This distinction aligns with the observations made by Tonucci and Rissotto (2001). In the dialectical relationship between children and private/public space, Holloway (2014) points out that children themselves can be seen as potential threats to the order and safety of public space. Due to adultist biases, the conception of childhood often leads to the exclusion of children from public space.

The increasing institutionalisation discussed by Tonucci and Rissotto (2001), which involves the transition from a “playground city” to a “sandbox city,” was prominent in the context of schools. Schools were viewed as powerful institutional places that symbolise restriction and surveillance, contrasting the sense of freedom experienced within private homes. The institutional power of schools becomes apparent through one group's conceptualisation of school as the primary or most important place for knowledge transfer.

In terms of power dynamics and categories of difference, socio-economic status played a dominant role in the discussions. It was expressed through status symbols and the promise of upward mobility, which was particularly strong within a group from the wealthier neighbourhood of Rüttenscheid. When it comes to relationships between different generations, the participants placed a great deal of importance on their independence from adults. They actively asserted this independence and expressed their autonomy even in institutionalised settings such as school bathrooms or their preferred places for consumption. This highlights how even limited spaces, like a sandbox, hold potential for play and a sense of secrecy. The participants' perceptions of power relations between adults and children were ambivalent, aligning with the findings of den Besten (2011): While adults were still seen as authority figures and potential threats in public space, the participants acknowledged their ability to negotiate and find compromises with their parents in the privacy of their homes. This further confirms the differentiation between private and public space, as discussed by

Valentine (2004). The negative connotation and perceived dangers of public space were strongly expressed through generational relations and the potential threat posed by unfamiliar adults. The analysis also revealed that categories of difference were mostly reproduced subtly, except in cases of generational conflicts, which manifested in various dimensions within both public and private spaces.

5.1 *Practical Implications*

The workshop offered a valuable opportunity for power-reflexive primary social and science education with a focus on digital geomedial. Through discussions inspired by their visualisations of spaces, students delved into topics that are crucial for contemporary social and spatial learning, such as social inequality and sustainability. This local exploration allows for student-centred and meaningful learning, without imposing predetermined topics on the students. However, it was important to facilitate discussions about spaces of freedom together with the participants, especially at the beginning. This fosters an awareness of the existence of free spaces in their lives, while still respecting their right to keep those specific places private and invisible. Recognising children's spatial appropriation and their right to privacy prompts a reflection on paternalistic tendencies within Spatial Citizenship and education in general.

Recognizing and respecting children's spatial appropriation rights and their desire for privacy requires a critical examination of paternalistic tendencies within Spatial Citizenship and education as a whole (Pokraka & Gryl, 2018). To shed light on these hidden structures within learning environments, it would be beneficial to explicitly address them in educational research involving children, allowing them to share their immediate perspectives on the paternalistic structures they encounter.

To foster a deeper understanding of the hierarchies and discourses that shape the production and co-production of space, it would be helpful to expose children to a range of spatial visions. This can be achieved by presenting them with various forms of geomedial from diverse sources, diverse modes of construction, and different spatial layouts and aims. Furthermore, the mapping exercises conducted by students revealed a plethora of connections to various topics, such as environmentalism and private transportation. The flexibility and openness of this methodology make it applicable to other subjects as well, such as education for sustainable development, economic education, civic education, or history.

5.2 *Methodological Discussion*

When considering our methodology, it is important to reflect on the limitations of the learning environment and our data analysis. Participants engaged in researching and discussing the spatial aspects of their own life worlds. However, due to data protection restrictions, the results were not shared beyond the day-care facilities and the individuals involved. This contrasts with the goals of Spatial Citizenship education, which aims to have a broader impact. To address this limitation, it may be beneficial to explore creative ways of designing spatial visions, such as utilising neocartography in primary schools. By integrating this approach into a critical learning environment and developing basic competences for participation, there is a greater chance of being heard, encouraging others to think about the issues, sparking new insights, and improving communication. It is important to reach a critical mass and involve relevant stakeholders in order to have a greater influence. This approach acknowledges that

traditional participation paths, such as persuading powerful stakeholders, may not always be the most effective way to bring about change. Instead, the significance of grassroots movements and political processes is emphasised, as exemplified by successful or viral web communication strategies related to spatial constructions (Elwood & Mitchell, 2013).

As described in our methodology section, the documentary method aims to identify dominant discourses and shared beliefs within peer groups (Bohnsack et al., 2013). Consequently, individual expressions of non-dominant attitudes that are not echoed or acknowledged by the rest of the group during discussions may have been overlooked. In terms of critically enhancing Spatial Citizenship, it would be valuable to highlight the various individual strands of argumentation and note which discourses were disregarded by whom and why. This opens up opportunities for future research to explore these overlooked perspectives and understand the reasons behind their exclusion. By doing so, we can gain a deeper understanding of the power dynamics within discourses and explore ways to promote more inclusive and diverse perspectives within Spatial Citizenship education.

5.3 *Future Research*

The findings of our research and the reflections it provokes highlight several areas for future research and potential synergies. Firstly, the results underscore the need to provide opportunities for addressing power relations in children's negotiations. Approaches for deconstruction (Lehner et al. 2019) and transformative learning (Pettig, 2020) show promising ways of uncovering the dialectical relationship between internalised power structures, possibilities for subversion, and resistance in collaboration with students. By utilising these approaches, barriers within socio-spatial participation processes can potentially be overcome. For instance, Fisher (2010) analyses the (im-)possibilities of coherent thinking about alternatives to capitalism as the seemingly singular possible system (Fisher 2010). This dominant presence of capitalism's economic and social logic becomes apparent in the empirical study discussed in this paper. For instance, participants emphasise the significance of socio-economic status and the importance of consumption, reflecting the influence of capitalist values.

It seems imperative to develop an approach that facilitates thinking beyond the confines of *Capitalist Realism* (Fisher, 2010) and promotes the generation of alternative visions for both living and economic organisation. This becomes increasingly significant given the escalating global inequalities and the ecological crisis catalysed by the global climate crisis. Notably, these concerns extend beyond the scope of geography or social science education and have implications for teaching and learning across an array of subjects, including interdisciplinary approaches. The utilisation of spatial and geomeia-driven communication, as done in this study, has shown how deeply ingrained societal conceptions of power are in children's modes of communication. Thus, adopting an educational approach from the outset that encourages critical thinking and the exploration of alternative possibilities, seems highly relevant.

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