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The knowledge of physical-symbolic reality of children and youth: producing and acquiring spatial knowledge

El conocimiento de la realidad físico-simbólica de niños y jóvenes: producción y adquisición de conocimiento espacial.

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Abstract.

We address the central topic of the call for papers from the perspective of children's and young people's spatial knowledge: childhood educates space. We argue that both children and youth educate space as much as they are educated by it. To shed light on this dynamic and complex interaction, we focus on the spheres and agents at play in the process of spatial knowledge production and acquisition. The term sphere refers to the spatial conditions that delineate an area of activity related to the production and acquisition of spatial knowledge. For their part, agents represent the key means, actors, and tools that contribute to enhance this sphere of activity. We drew on two driving themes to make the analysis operative: (i) the gradual development of a comprehensive conception of space; and (ii), its accompanying (and transversal) learning processes. Moreover, to support the statement that childhood, youth, and space are mutually educational, we present a selection of findings from a qualitative meta-analysis aimed at reconstructing the evolution of young people's spatial knowledge from the 1970s onwards. All in all, we claim that the process of producing and acquiring spatial knowledge forms the basis, on the one hand, of the sharpness and depth of young peoples' perceptions of the physical world and, on the other, of how they subjectively and symbolically characterise it.

Keywords: spatial knowledge; physical-symbolic reality; children and young people; qualitative meta-analysis; agency; learning process

Resumen.

En este artículo, abordamos el tema central de la convocatoria desde la perspectiva del conocimiento espacial de niños y jóvenes: la infancia educa al espacio. Sostenemos que tanto los niños como los jóvenes educan al espacio tanto como éste les educa. Para ilustrar esta interacción dinámica y compleja, nos centramos en las esferas y agentes que participan en el proceso de producción y adquisición de conocimiento espacial. El término "esfera" se refiere a las condiciones espaciales que delimitan un área de actividad relacionada con la producción y adquisición de conocimiento espacial. Por su parte, los "agentes" representan los medios, actores y herramientas que desempeñan un papel decisivo y refuerzan esta esfera de actividad. Para hacer operativo el análisis recurrimos a trabajar con dos temas principales: (i) el desarrollo gradual de una concepción integral del espacio; y, (ii) la simultaneidad en sus procesos de aprendizaje (y transversales). Además, para respaldar la afirmación de que la infancia, la juventud y el espacio se educan mutuamente, presentamos una selección de hallazgos de un metaanálisis cualitativo destinado a reconstruir la evolución del conocimiento espacial de los jóvenes desde la década de 1970 en adelante. En resumen, sostenemos que el proceso de producción y adquisición de conocimiento espacial son la base, por un lado, del interés y la profundidad de la percepción de los jóvenes sobre el mundo físico y, por otro lado, de cómo lo caracterizan subjetiva y simbólicamente.

Palabras claves: conocimiento espacial; realidad físico-simbólica; niños y jóvenes; metaanálisis cualitativo; agencia; proceso de aprendizaje

1. The bedrock of children's and young people's acumen and internalization of physical-symbolic reality

The central claim around which we develop this article is that children and young people[1] actively educate as much as are educated by space. To substantiate this argument, we explore diverse ways in which children and young people educationally not only shape but also are shaped by the physical-spatial configurations of the built surroundings they have direct contact with. To this end, we focus on the arenas and agencies that underpin the production and acquisition of children's and young people's spatial knowledge. In broad terms, we deem an arena to be the spatial conditions (from material to symbolic) that delimit a particular area of either production or acquisition of spatial knowledge and agency the range of catalyzing factors – resources, agents, devices – that undergirds, and is thus integral to, it. With the aim of narrowing down and rendering manageable the analysis of the admittedly large and tangled array of arenas and agencies of children's and young people's spatial knowledge, we crafted a twofold approach based on (i) the gradual development of a comprehensive conception of space and (ii) its concomitant learning processes. All things considered, our findings show that spatial knowledge lies at the heart of the ways children and young people perceive and ascribe meaning to the(ir) physical world.

2. Background and methodology

Our discussion here stems from a research project entitled Education: *The Spatial Knowledge of Children and Young Adults and Its Application in Planning Contexts,* conducted at the Collaborative Research Centre 1265 *Re-Figuration of Spaces* of the Technical University of Berlin. By and large, this investigation revolved around the relationship that children and young people establish with their spaces. Moreover, as part of the methodology used, a qualitative meta-analysis was conducted to examine the evolution of their spatial knowledge over the past five decades in view of "the refiguration of spaces" (Knoblauch and Löw 2017). A qualitative meta-analysis, a distinctive form of synthesis research, comprises and integrates findings from empirical studies that have already been conducted in specific target areas and disciplinary fields. As such, a qualitative meta-analysis constitutes an analytical process and interpretative product that allows to delve systematically and comprehensively into phenomena and answer research questions different from those of the sampled studies. While our approach to qualitative meta-analysis was inspired by the meta-ethnographic method (Noblit and Hare 1988) and suggested improvements (Doyle 2003), we still modified and adapted the method according to the requirements of the research project (see Castillo et al. *forthcoming*; Castillo and Schwerer 2021. The sample comprises 60 empirical studies that have been published as

1 Sure enough, defining the terms children, young people, childhood and youth is problematic and requires a longer debate than the length and breadth of this article allows. Suffice it to say, then, that we stick to the view of the academic field of children's geographies, which rejects biological, essentialist, and universalist conceptions of these terms, thereby framing them as social constructs based on the so-called new social studies of childhood (James et al. 1998; Holloway and Valentine 2000a, 2000b; Holloway and Pimlott-Wilson 2011). Moreover, rather than portraying childhood and youth as homogenized experiences, they are conceived (in particular, for the purpose of presenting the results of the qualitative meta-analysis) as contingent categories susceptible to the diverse (social, historical, and spatial) contexts in which the everyday lives of children and young people take place.

books, edited books, book chapters and journal articles by various authors. These empirical studies have looked into different topics that are, to a greater or lesser extent, related to the spatial knowledge of children and young people; the fact that their findings have been put into another perspective to answer dissimilar research questions is what constitutes the qualitative meta-analysis' kernel. Some of themes addressed in these investigations are children's and young people's: agency, mobility, play practices, everyday routines, spatial perception, spatial appropriation of public space, use of digital devices and ICTs, amid others (Castillo et al. *forthcoming*: 243ff). Moreover, the sample covers a wide range of disciplines (geography, anthropology, urban planning, sociology, education, amid others), geographical contexts (encompassing all five world regions), research methods (participant observation, interviews, participatory mapping, focus groups, photovoice and in some studies (e.g. Milstein 2013) researched children and young people actually helped to conduct the research), age groups (from 3 to 18 years old) and times of research (from the 1920s to the 2010s).[2] The main findings of the qualitative meta-analysis were synthetized in the form of a monograph (see Castillo et al. *forthcoming*). In what follows, we present results that were not explicitly included to discuss children's and young people's cognizance of physical-symbolic reality in the light of their production and acquisition of spatial knowledge.

3. Grasping and learning (from and to alter) the material surroundings

To put the results derived from the qualitative meta-analysis conducted into perspective, we utilized, as previously mentioned, two thematic axes. As such, these conceptual guidelines provide the basis for the discussion on the production and acquisition of spatial knowledge, in the light of the findings subsequently presented, as the catalyzer of children's and young people's cognizance of physical-symbolic reality.

3.1. An objective view of the physical-symbolic world: The journey from sensori-motor perception to lasting schemata

Children and young people further their intellectual development whenever they produce or acquire spatial knowledge, for it is linked to their cognition. Human beings develop, loosely speaking, their cognitive capacity in two stages. Firstly, a sensori-motor perception begins to evolve, thereby causing the separation of the self from the world. Throughout this initial stage, the intellectual development is of a global and synthetic character and, despite the distinction of the self/world divide, "objective and subjective facts are still closely connected and are often intertwined in the process of evaluating self and world" (Sack 1980: 122). During the ensuing phase, given that conceptual thought emerges, humas are able to progressively both perceive and represent themselves and their worlds separately through symbols, because, by creating "a wedge between the subjective and the objective", symbols "further differentiate

2 More details about the sample are provided in Castillo et al. (forthcoming, Chapter 3) and the appendix (p. 243ff).

and separate self from the world" (Sack 1980: 122). By the time this differentiation has become apparent, an objective view of the physical-symbolic world has been attained. In addition, children and young people further draw the subjective-objective wedge by gradually engaging with their surroundings, via sensorial and motoric interactions thereby rendering them meaningful. Consequently, they enliven them, so to speak.

Thus, children's and young people's objective view of the physical-symbolic world is never completely detached from their subjective one; in fact, they shift from one to the other with far greater facility than adults do. As a result, children and young people set off an iterative discovering process that, at some point, as sustained by Piaget and Inhelder (1967: 375), allows them to obtain a comprehensive conception of space as well as of a spatial system "grounded in and derived from substance and their spatial properties and interrelationships" (Sack 1980: 127). Given these points, we claim that children and young people produce and acquire, throughout their intellectual development and framed by their spatial systems, *embodied-experienced* and *mediated* stocks of spatial knowledge. An embodied-experienced stock of spatial knowledge is *produced* through bodily and sensory explorations of the environment without any intermediating agency. On the other hand, *mediated* stocks of spatial knowledge are acquired by way of an intermediating agency. For instance, when children and young people acquire spatial knowledge through a mediated exposure to it and then transform the spatial knowledge they have been exposed to into know-how and technical use of tools and construction materials. Moreover, formal-institutional and non-formal learning processes, we argue, play accordingly a decisive role therein.

3.2. Learning processes: Arenas and agencies of spatial knowledge production and acquisition

Stocks of spatial knowledge, as we have hinted at, are produced and acquired by children and young people through their ability to develop more complex mental schemata and stable spatial systems. As such, the production and acquisition of spatial knowledge are learning processes through which children and young people obtain, construct, and refine their literacy of the natural and material surroundings. Learning can take the shape of *formal-institutional* or *non-formal processes*. Whereas non-formal learning relates to bodily learning and skills acquired and developed through the senses, formal-institutional learning is mostly based on abstract and theoretical knowledge imparted in oral and written form. Furthermore, formal, as opposed to non-formal, learning unfolds in *institutional* spatial settings – like schools and their premises and university campuses. By comparison, non-formal learning does not conform to institutionalization, because it is not subject to a fixed curriculum, does not certify, is not state-led and takes place for the most part beyond spatial settings of formal-institutional learning (Smith and Phillips 2017). However, the type or even absence of an intermediating learning agency may well render learning processes non-formal, though they occur within spatial settings of formal-institutional learning.

Of all the aforementioned factors that distinguish formal-institutional from non-formal learning processes, we place the emphasis on their *arenas* (the spatial settings that delimit them) and *agencies* (the purposeful actions through which they are enacted). We have done this to found our findings on the innate *spatial reference* embedded in learning processes. As Jutta Ecarius and Martina Löw (1997: 8; own translation) observe, "[e]ducational science often overlooks that education always has a *spatial reference* [...]. The reference to space becomes clear through its object: the work with children and young people [...]. Pedagogical practice is [thus] spatialized by its reference to action and its spatialization". Whereas detecting spatial referen-

ces within formal-institutional learning is a bit of a cinch, pinpointing those of non-formal learning processes does turn out to be significantly trickier. Thus, to avoid falling into the trap of ascribing the status of non-formality to everything that children and young people do outside school hours and premises and underscore the spatiality of their non-formal learning processes, the agency at play and underpinning the learning process must be considered too.

Agency, from a general standpoint, constitutes "a person's capacity to act towards an end" (Thrift 2014: 62). Moreover, agency is always embodied and, therefore, not mind-related (Frie 2008, Taylor 1995). Agency also entails actions performed in the physical-material world and, rather than behavioral, is openly purposive (Thrift 2014: 62-63). As such, agency is fundamental to constructing a comprehensive conception of space through which children and young people develop an objective view of the physical-symbolic world. Against this backdrop, the agency of children and young people prominently underpins the production of embodied-experienced stocks of spatial knowledge. By contrast, the agency of the person transmitting intermediately and deliberately stocks of spatial knowledge to children and young people largely shapes their acquisition. In the context of learning processes, the agency at issue, in our view, varies according to the type of learning – formal-institutional or non-formal. Regarding the latter, the accent is on the agency of children and young people and even of the very physical disposition of space itself. In such case, space, seen as a *third teacher*, exerts its own agency, given that, according to the so-called "Reggio Emilia approach", knowledge is both sensitive to and markedly influenced by space (Gandini and Gambretti 1997, Edwards et al. 2011). Consequently, the arena and agency of the non-formal learning process happens to be one and the same. On the other hand, the agency of formal-institutional learning processes is, for the most part, that of the persons who, ratified by their institutional (symbolic) identity, direct the learning process: from schoolteachers to architects and planners that give guided excursions to students to researchers that conduct collaborative research with children and young people.

Overall, through the twofold conceptual lens of a *comprehensive conception of space and learning processes*, we explore the weight arenas and agencies have on children's and young people's production and acquisition of spatial knowledge. In so doing, we gained insights into how they develop their spatial cognizance and render sensible and meaningful the physical-symbolic reality that demarcates their everyday lives. The findings outlined in the following section are framed from two main angles. For one thing, we put into perspective that children's and young people's spatial knowledge develops in accordance with their dexterity to produce an (*internal-subjective*) comprehensive view of both space and spatial systems. For the other, we see that almost exclusively non-formal learning processes substantively impact not only such ability, but also much of how spatial knowledge is produced and acquired, for they mediate the internalization – within children's and young people's intellectual development – of environmental (*external-objective*) transformations. The findings, furthermore, are discussed in view of the stocks of spatial knowledge and their nature – *embodied-experienced* and *mediated*. Afterwards, we draw some conclusions by going back to our departing thesis: that childhood and youth and space educate one another. An important observation is that the findings are likely to have a historical smack, given the ultimate goal of the qualitative meta-analysis from which they are derived: the reconstruction of the evolution of young people's spatial knowledge from 1970 onwards. It is also worthwhile mentioning that, out of the 60 studies that compose the meta-analyzed sample, only those whose contents offered valuable material to look into arenas and agencies of spatial knowledge are quoted. In addition, and with respect to the clarification made previously about the difficulties to define terms like *children, young people, childhood,* and the like in an unequivocal manner (see note 1), when presenting the results terms like *teenagers, adolescents* and *youths* are employed to remain true to the term chosen by the authors of the sampled studies.

4. Arenas and agencies of children's and young people's spatial knowledge: Learning to decode and situate oneself in the material-symbolic world

The core of this section is the relationship between arenas and agencies in and by which spatial knowledge is either in an experiential and bodily fashion produced or mediately gained by children and young people. This relationship between arenas and agencies in turn makes apparent whether children and young people possess or lack the capacity to be aware of and grasp stocks of spatial knowledge. Amid a myriad of arenas, those deemed by children and young people as protected and safe – such as shopping malls, which are ostensibly overriding traditional public spaces (like squares, plazas, parks) as children's and young people's sphere of social intercourse – stand out. Throughout the collection of meta-analyzed studies, we have identified that children and young people have a rich tapestry of actions whereby they fluidly and savvily produce and acquire stocks of spatial knowledge. They encompass, for instance, decoding restrictive elements of spatial arrangements; developing tactics and strategies of resistance or even transgression; and adapting to adult-tailored built environments. Moreover, our findings show that children and young people cultivate such spatial practices, in order to cope with ambivalent and simultaneous dynamics of exclusion-inclusion, couple specific interests to corresponding spaces and, more broadly, find a place of their own. Overall, children and young people usually align their spatial cognizance and performance seeking to grasp and seize opportunities to intervene, symbolically and/or materially, space by connoting and anchoring therewith themselves to it.

4.1. The search for safe-enabling personal territories

Among the arenas of spatial knowledge's production and/or acquisition, the shopping center has gained prominence as a frequented space by children and young people due to, amid other reasons, the safety and room for maneuver it offers them. Moreover, these spaces of consumption have been progressively superseding – though have not completely displaced – traditional public spaces such as streets, squares and parks as children's and young people's preferred spaces. A case in point are children who lived in various neighborhoods of Los Angeles during the mid-1990s and where "privatized consumer nodes are [...] often the only 'havens' for children" for their

> [c]arefully controlled, predictable commercial environments offer more protection and security than many of the children's neighborhoods, and certainly more than the unpredictable, poorly maintained parks and public places in urban LA. Even though these enterprises promote passive consumption rather than more engaging activity, the children say [...] they offer opportunities for recreational pleasure not found in the larger urban landscape. [...] They now offer music, events, programs and other 'public' community activities such as Halloween 'trick or treating' on their premises (Buss 1995: 349).

Such positive sentiment is echoed by young Britons who, at the turn of the twenty-first century, visited regularly five malls located in the East-Midlands and regarded them as safe and adventurous milieus for their socialization. As some interviewee assessed it: "we hang around a lot here [...] a group of us, usually three or four of us [...] it's cool [...] there's always something [...] there's a buzz when we stand here. (Girl aged 13, Grosvenor Centre)" (Matthews et al. 2000:

286). Further, these young Britons found in malls suitable conditions to meet with friends; circumvent boredom (largely associated with spaces outside malls for they lack excitement); interact with other peers; become a member of, or even create their own, groups; and evolve in their social prestige, provided that "in their accounts there was a strong sense that hanging around with friends in a shopping mall confers a certain social credibility" (Matthews et al. 2000: 287).

Both US-American children and British youths were attracted to malls, because they appreciated the sense of security they got while hanging out there. For instance, in the latter case, "the implicit nature of the mall, with its effect of panoptic surveillance, defines a 'safeness' that is seldom experienced elsewhere when young people are out and about" (Matthews et al. 2000: 282). What is more, interviewees very much perceived and cherished such safeness and thus deemed malls to be a secure setting with valuable affordances, which enabled them to "develop their identity, individuality and even promulgate acts of rebellion, without real danger" (Matthews et al. 2000: 291). US-American children, similarly, claimed to not only feel safe from potential harms within "these protected enclaves", but also assessed to "experience a 'freedom' and mobility which is developmentally appropriate for their age, but which they do not enjoy in the 'naturalistic' settings around their homes or school" (Buss 1995: 349). Interestingly, malls' captivating power does not exclusively reside in the safety they project onto children and young people. Contrariwise, contravening the ever-present surveillance and house rules of shopping centers may well be the enticing factor, as teenagers' transgressive, gender-specific and class-bound spatial appropriation of malls in Barcelona shows (Ortiz et al. 2014). When researched adolescents visited the shopping center of their preference, an appropriation process unfolded based on the disobedience to its spatial arrangement, whose purpose is to trigger consumerism by adults. Hence, the behavior of these Spanish youths in the mall was initially

> Similar to that of adults, but to locate their bodies in these spaces, which have been conceived and created for grownups, represents a physical exploration, a representation of their identity, and a way of transgressing a space essentially meant for the adult public (trying on clothes without the intention of buying it, putting on makeup in the stores, among other explorations; occasionally, the misbehavior could go a bit further, for instance, by attempting to sneak into the movie theaters) (Ortiz et al. 2014: 47; own translation).

Such waywardness, as aforesaid, has bearings on teenagers' identity formation, since these spaces of consumerism – as the previously referred to studies (Buss 1995, Matthews et al. 2000) also demonstrate – have been identified as sites where, particularly, young people have social intercourse and express their own identities. In short, they manage to further a spatial identity-belonging. However, there are nuances worthwhile underscoring. Whereas US-American children and British youths sought the security of the mall and, in so doing, blended into the shopping centers' spatial pedagogization (that is, intended uses embedded in its material arrangements; see Castillo et al. 2021: 297ff. and *forthcoming*: Chapter VII), Spanish teenagers, through their *transgressive* spatial appropriation of the mall, carved their identities according to gender-based preferences as well as socioeconomic status. Given their inherent classist character, for children and young people with limited (or non-existent) purchasing power, shopping centers are often contradictory spaces, for they represent spaces for the consumption of desired goods that they will likely be never able to buy. This exclusion becomes even more blatant and straightforward when it is overtly bound to poverty. In that regard, young residents of the Canaansland squatter camp in Johannesburg, beguiled by the unusual offers they could find in a nearby shopping mall (from window shopping to rides on escalators to video games), were constantly admonished (even though they had been granted permission by their parents) whenever they dared to set foot therein. Adults, who were also from the squatter camp, believed these young South Africans were merely shirking chores,

scolded them and told them to go back home (Swart-Kruger 2002). Accordingly, their spatial identity-belonging followed a sort of inverse logic – they were not only constantly reminded that they had no place there, but also could not transgress adults' commands and the mall's spatial pedagogization. To put it differently, the figure of the shopping mall impacted the identity formation of these young South Africans as they were reminded that they do not and may not ever belong there. By and large, we take this kind of harsh experiences that children and young people have to endure to be a fundamental part of their efforts to find their place in a remarkably adult-centric world; that is to say, their quest for a safe-enabling personal territory where to feel at ease.

4.2. To see a world in a grain of sand: Children's and young people's adaptations of adult-tailored built environments

It comes as no surprise that built environments are predominantly responsive, and thus bespoken, to adults needs and preferences. In this regard, a tricky situation are the *child- and youth-dedicated spaces* that, though attend to their penchants, also enable varying degrees of control and spatial pedagogization. Shopping centers, as we have discussed above, may well be seen as an example of the ambivalence that permeates these spaces. For instance, the researched Britons from the East-Midlands evince to have had a paradoxical perception about adults' surveillance in malls, in the extent that it was viewed simultaneously connected to the feeling of being excluded from the public and providing a much-appreciated safety (Matthews et al. 2000). Thus, we sustain that the role of adults, especially, parents, although not all that explicit in the studies we have hitherto addressed, is decisive within children's and young people's decoding of restrictions and developing of either adaptation or resistance tactics and strategies in shopping malls – and beyond. Moreover, children and young people deploy this tactical and strategical set to carve out *identity strongholds* in somewhat adverse built environments, at times, all by themselves and, at others, with the aid of adults. The previously mentioned children from Los Angeles, for example,

> display an ability to respond actively to adversity. The[ir] [...] photos and journals show how they adapt to a built environment created by adults, and how they are manipulating and changing that environment to meet their own needs better. With words and pictures, the children tell [...] how they resist spatial domination, and engage in creative activities within the urban setting. They show how they claim spaces as their own, and how they establish a small degree of spatial hegemony within the larger materiality of the city [...]. They describe feelings of belonging and emotional attachment to pieces of public art or landmarks which give them a sense of comfort and control over the spaces they occupy and navigate (Buss 1995: 350).

While these US-American children undertook their adaptations of their built environment on their own, young Ethiopians, who resided first in a refugee camp in Sudan and were later relocated to Ada Bai, a settlement for returnees in their home country, had, contrastingly, the active support of, and counted on, their parents (Hammond 2003). The spatial-material arrangement of refugee camps and settlements offered these researched youths little to no chances for their antics and practices through which to trigger a home-making process. However, parents, as the study makes manifest, tried to support their children's emplacement process by teaching them, and thus furthering strong associations with, spatial and socio-cultural factors in a long-term process. These young Ethiopians were therefore taught songs and traditions typical of Ada Bai, to accompany their process of situating themselves in the midst of

unknown surroundings. Interestingly enough, a dual sentiment towards the notion of *home* seems to have arisen, for interviewees' answers to the question which place they considered as home indicated "a sort of bilateral construction of a home, with Ada Bai occupying the role of 'everyday home' and the highlands that of 'family home'" (Hammond 2003: 92). This twofold construction of home, moreover, has a quite pragmatic bedrock, provided that interviewed young Ethiopians stated to have "started their lives over so many times that the concept of 'going back' to a life that had once known was so unpractical as to be unthinkable. [...]. Life before was better because we were in our homes. But this is a new life, and we must try to make it as complete as possible" (Hammond 2003: 91).

The fact that children and young people can establish direct connections with their immediate environments, determines the degree to which they can grasp and seize opportunities to intervene it symbolically and/or materially. In other words, they develop a *spatial performance* that harnesses either an artifact-based language of appropriation (Buss 1995) or a spatial knowledge transmission from parents (Hammond 2003). Regarding the latter, our findings show that another mechanism whereby parents propel children's and young people's spatial cognizance of the built environment is by meaningfully and vocally annotating spaces during everyday journeys. The spatial cognizance of some young US-Americans, who grew up in the small town of Inavale, New England, during the late 1970s-early 1980s, was boosted while daily moving around with their parents and by switching from a passive to an active "involvement in navigation (i.e., directional decision-making)" (Hart 1981: 222-223). In addition to that, "the effect of meaningful verbal annotations to places during travel" (Hart 1981: 222-223) turned out to be essential for these researched young US-Americans to produce specific stocks of spatial knowledge from their built environment, for they were able to recall specific spaces through meaningful vocalization – as opposed to mechanical memorization.

To be sure, it is for neither children nor young people easy to modify adult-tailored built environments. They are confronted with ambivalence (such as the Britons in the East-Midlands shopping malls) or a remarkably unresponsive and meagre urban landscape (as that of the neighborhoods of Los Angeles during the mid-1990s). Yet, parents lend young people a helping hand to have them settle in after being (repeatedly) displaced (Hammond 2003) and develop an annotating articulating system to confer significance to spaces embedded in their surroundings (Hart 1981). This subsection, in brief, is about how children and young people construct their imaginations and visions, appreciate the big picture from a detail, connect (or not) to what it is important to them and, recalling William Blakes' Auguries of Innocence, "see a world in a grain of sand".

4.3. An accordion-like interplay of arenas and agencies of children's and young people's spatial knowledge

The multifarious physical-symbolic worlds that children and young people see in sand grains, our findings suggest, are to a large extent driven by the relationship between roaming options, roaming range and *spatial structure*. This interaction, moreover, reflects a coupling of interests (varying according to gender and class) and specific spaces (e.g., cyber cafés, shopping malls, music clubs). How much leeway children and young people have to freely roam, rather unsurprisingly, is markedly determined by parents' mindsets and aspirational prospects they have for their children. The divide between working- and middle-class children, who grew up in Tapei, Taiwan, during the late 1960s-early 1970s, evinces such condition (Schak 1972). Whereas working-class families had a village-type outlook, which included a strong relationship with neighbors, middle-class families performed a home-centered lifestyle with rare, if any, interaction with neighbors. Consequently, working-class children spent their leisure time freely wandering around their neighborhood, while middle-class children, save when they went

to school, were kept at home (Schak 1972). Such accentuated differences of roaming leeway (whether unhindered or allowed), in conjunction with the type of mobility (walking, bus riding, being driven), also shape children's and young people's spatial perception and structuring of their immediate surroundings.

The previously referred to young US-Americans in suburban New England, around the same time as their Taiwanese peers, expanded their roaming range in accordance with parental permission. As a result, these US-Americans went as far as where they managed to walk and felt safe insofar as they and, above all, their parents were acquainted with the spaces they could reach (Hart 1981). A mapping exercise made this aspect manifest:

> Margaret was able to locate precisely the important places around her home [...]. Most of these places lie within her 'free range'. (Free range refers to the area a child may visit without asking permission or telling an adult each time; it describes the primary area of play). [...] There are a number of families living across the street whom Margaret is also allowed to visit with her brother with permission – her mother knowing full well that the adults in those three homes will watch out for her daughter. (Hart 1981: 209-210).

Even though it is not explicitly stated in the study, boys presumably dared (and perhaps were granted permission) to venture beyond their parent-sanctioned range. Be that as it may, a gender divide is more palpable in the spatial structures of young Indians who, by the end of the 1990s, were living in the marginalized outskirts of Bangalore, India (Bannerjee and Driskell 2002).

Similar to the cases of the Taiwanese children and young US-Americans, the issue of security was also determinant for these young Indians to enjoy a lesser or greater freedom to ramble. Hence, their spatial structures were characterized by a relatively ample freedom of movement fostered by a widespread sentiment of safety – though as long as they remained within the physical boundaries of Sathyanagar, the self-built settlement they lived in. Because most of them had practically spent all their lives there and even had various relatives close by, they claimed to feel permanently at ease all over the settlement. Also, they knew very well where they were not supposed to go and what they were to stay away from, given the exhibited "high level of awareness about the people and places to be avoided" (Bannerjee and Driskell 2002: 145). Beyond the settlement's border, the spatial structure of these researched youths signals, as aforesaid, blatant gender differences. While boys "move very confidently even to contiguous settlements, such as Naganapalya, Byapanahalli and Seva Nagar, a couple of kilometres away"; girls, though "familiar with most parts inside Sathyanagar, [...] are not very familiar with what lies beyond its boundaries" (Bannerjee and Driskell 2002: 145). The causes for this range from mothers' anxiety – because their daughters are not home – to potential teasing or even sexual abuse. As some of the interviewed girls explain: "'Father says don't go too far from home. When I ask what is the reason, he says, "Just do as I tell you to"' (Valli, age 13) / 'The menfolk are very bad in Byapanahalli [an adjacent settlement]. They use indecent language...and tease young girls' (Maia, age 12)" (Bannerjee and Driskell 2002: 145).

Parental permission, largely based on safety preoccupations, as it has been underscored, is a determinant of children's and young people's roaming range, which in turn shapes their ability to produce and acquire spatial knowledge. For example, girls, as opposed to boys, are likely to produce less varied embodied-experienced stocks of spatial knowledge, for their everyday trajectories are limited to repetitive arenas of spatial knowledge production: predominantly their homes and adjacent spaces. Their agency, moreover, is significantly reduced as well. Similarly, children's and young people's mobility is, to varying degrees, a key factor therein. In that regard, it is conspicuous that, in none of the abovementioned studies, an autonomous mobility is being purposely encouraged; much to the contrary, and particularly for girls, it is

visibly restricted. However, the case of Bolivian children, who had to attend school in downtown La Paz during the first half of the 2010s, indicates somewhat otherwise, for they moved autonomously around – yet, not precisely out of choice. Interviewed children, at an already fairly short age, rode the bus or walked by themselves and were exposed to undesired circumstances. This, far from being their preference and decision, responds, sometimes, to ultimate necessity. For instance, when their family composition changed, children's daily routines underwent pronounced changes. As one study participant explains: "'my dad used to escort me [to school], but now it is my mom who does it, my dad is gone [...]. Sometimes, when there's not much traffic, I am allowed to walk here on my own' (José 10 years old [...])" (Serrano 2015: 11; own translation). On such account, this child's mobility was subject to the itinerary of the parent who remained in charge of the household, the mother. Hence, autonomy and independence, rather than being the outcome of an incremental process (like running, increasingly, errands on their own), may be fairly enforced upon children and young people. Consequently, key aspects – safety, proper age, confidence – were put aside for these Bolivian children. As a result, they had to learn how to move around on the way. As a young girl put it:

> '...I was once left behind there, at home, and I was already late to come here [, the school]. "Just get off [the bus] by yourself", I've been told. [Who?]. My grandpa; and I've gotten off by myself, I didn't know exactly where [I had to go] and then I saw Riosiño square, I got off and came here. [On your own you've learnt to come here, haven't you?]. Yes' (Evelyn 10 years old [...]) (Serrano 2015: 11; own translation).

Alongside parents' direct and perspicuous influence, children and young people expand their roaming range and therewith calibrate their spatial structures according to their personal interests and necessities. Even these Bolivian children, as extreme as their situation was, managed to align their roaming leeway with obligations they were assigned. Constant journeys between their two referential anchoring spaces – the home and the school – eventually turned into a meaning-ascribing and meaning-allocation mechanism through which self-care strategies were developed. Such a meaning-ascribing process allowed these children to construct precise routes; though not necessarily because they have roamed freely enough throughout their barrios. But rather because they had to optimize their time to cope with errands and other family responsibilities they were entrusted with. As an interviewee explains:

> '...coming down from my house, there is a big market [...] it has two doors, one to go directly to the [bus] terminal and the other to go to a park, it's just a park [...] sometimes [my mom] sends me alone to take my sister for a walk [your little sister?] yes [...] because sometimes my mother trusts me, I go to buy vegetables by myself [how long has it been so?] since I was 7 years old...' (Boris 11 years old [...]) (Serrano 2015: 11; own translation).

Due to specific socioeconomic conditions, these researched children's roaming range within their neighborhoods started progressively to change, the more they were allowed to go outside by themselves. Thus, it was "their experiences, when they are accompanied or when they start to go out alone what allows the streets, the shop, the park, the sidewalk, the corner or the routes to become familiar places and start to acquire meaning" (Serrano 2015: 11; own translation).

Transcending material as well as symbolic boundaries, as the case of Bolivian children makes it apparent, is essential for children and young people to amplify their roaming freedom. While Bolivian children were somehow forced to by their own parents (whose behavior was triggered by dire socio-economic conditions), expatriate German teenagers, encaged in gated communities in Shanghai, surpassed their material limits propelled by a desire to enjoy urban nightlife or simply find a hangout – and, more importantly, escape the controlling gaze of

adults. An illustrative example is a frequented convenience store to which these youths were drawn to listen to

> their music, play pool or simply hang out and discuss the songs, exams and homework issues, weekend plans or problems they have with classmates, teachers or parents. A few male teenagers even come here to hangout after school or in the evenings to drink beer, smoke and chat (Sander 2016: 242).

An interviewee, captivatingly, drew translocal parallels between how youth in Germany and Shanghai discern spaces where to pursue their interests, by assessing that the store in question is a space "where teenagers can just go [...] [it is to us what] a park or what a bus stop or a playground is for youths in Germany"; that is, a space without any "problems with disturbance or breach of the peace" (Sander 2016: 242). The store, as such, became an identity stronghold where youths performed their *spatial identity-belonging*. Moreover, these expatriate German teens mirrored adult behavior, gendered their identities and related to Shanghai's cosmopolitan lifestyle, provided that

> [l]eaving the compound is often linked to activities that are seen as liberating, like hanging out at 'the shop', or as crucial for urban cosmopolitan consumer culture: shopping, eating out or clubbing with an international community. Claim for these spaces is vital for [these] expatriate youths in establishing an emotional connection to their environment and in activating value of Shanghai for their own narratives of belonging. The suburban housing estates fail to offer such spaces of negotiation or connection (Sander 2016: 243).

Gender, more distinctively in some studies than others, comes to the fore in the various ways children and young people further their leeway to roam and adapt accordingly their spatial structures – which, again, has direct bearings on their spatial knowledge production and acquisition. Thus, boys and girls relate certain spaces with specific interests *distinctively*. We assume that expats boys and girls, when they went clubbing in Shanghai, took over space and expressed their identities differently, because they were, in the end, pursuing dissimilar interests. In an akin manner, but exhibiting a much clearer gap, the way Spanish boys and girls from the Barcelonese barrio Bésos-Maresme structured their everyday spaces were poles apart. More specifically, the wedge between them was driven by the uses of media and concomitant spaces. Interests of interviewed boys revolved starkly around playing videogames and, along with playing football, dominated their activity logs. Girls, on the other hand, "like going for a walk, window shopping or simply talking" (Ortiz et al. 2014: 47; own translation). Furthermore, among the adolescents who partook in the study, such gender divide, regarding the uses (and spaces) of media, was accentually clear: "'To the cybercafé only boys go, because we play strategic games, those of army [...] and they [, the girls,] don't like that' (José)" (Ortiz et al. 2014: 47; own translation).

On the whole, children and young people, for the most part, harmonize their spatial *cognizance* and *performance* with their (steady) exploration for opportunities to enter new domains, thereby breaking free from imposed constraints (notably, by parents). Hence, children's and young people's roaming range, far from being gradual and broaden in accordance with age, resembles an accordion-like pattern – as much as it can expand, it can also contract. Consequently, the production and acquisition of stocks of spatial knowledge, rather than happening incrementally and coordinately, is shaken by the dynamical interplay between the numerous arenas (shopping malls, cyber cafés, convenience stores, ways to school) and the diverse forms in which children, young people and adults (sometimes even antagonistically) perform their respective agencies therein. Moreover, while we have presented our findings without directly and explicitly addressing the notion of *learning process*, it is easily inferable that non-formal

learning, as it was already hinted at, traverses the discussion on *embodied-experienced* examinations of and attempts at altering the built environment as well as buttress children's and young people's quest for safe-enabling personal territories. Likewise, and as pointed out in the theoretical framework, the production and acquisition of spatial knowledge are, in and of themselves, learning processes, which, seen through the presented findings, are predominantly non-formal. With all these observations in mind, we now go back to our central claim – childhood and youth educate and are educated by space – to provide a few general conclusions.

5. Conclusion: Attempting to see the world through children's and young people's eyes

The previously outlined findings show the diverse ways in which children and young people, by way of their comprehensive conception of space, progressively accommodate the various arenas of their spatial knowledge production and acquisition – the shopping mall, the ways to school and even the cities they live in – within more durable spatial schemata. We contend that such a process, is a learning process for the most part of a non-formal character. In other words, children and young people, by setting their agency in motion, explore in a sensory manner their adult-oriented environments and, in so doing, they become aware that they and the world are not one and the same. Furthermore, despite palpable sentiments of alienation and exclusion, children and young people – at times on their own, at others with the aid of their parents – manage to situate themselves in the world and bridge the subjective-objective gap that shapes their perception and internalization thereof. That is how they obtain and refine their cognizance of physical-symbolic reality.

Moreover, through their cognitive spatial development, children and young people ascribe meaning to the built environment and seek to carve a place of their own – to feel at ease at a shopping mall, to settle in a refugee camp or to turn a convenience store into a hangout.
Children and young people, when denoting their physical reality, exert a powerful imagination that allows them, for instance, to overcome harsh material circumstances shaping their lives like those permeating self-built settlements and squatter camps. At the same time, as our findings show, the material arrangements, and varying according to gender, class and parental restriction, visibly determine children's and young people's spatial structures, roaming leeway and roaming range – and, by extension, the way spatial knowledge is produced and acquired. In short, space acting as third teacher of children's and young people's spatial literacy. A case in point is the way the production and acquisition of spatial knowledge of young Indian boys and girls in the self-built settlement of Sathyanagar is markedly influenced by its physical conditions (boundaries, state of houses and roads, availability of services) and contingent on gender (with boys enjoying greater leeway to wander around and beyond the settlement – thus daringly disobeying the teacher).

Returning to our initial claim, it is both the various ways children and young people produce *embodied-experienced* and acquire *intermediated* stocks of spatial knowledge – deemed a non-formal learning process – and their arenas and agencies what makes apparent that childhood and youth educate as much as are educated by space. To substantiate this assertion, the methodological-analytical approach of qualitative meta-analysis must be underscored: it made possible to put into perspective the manifold dimensions that traverse as well as the factors that influence children's and young people's spatial knowledge, for it constitutes a suitable way to deal with the unavoidable analytical complexity caused by the diverse – and sometimes even diametrically opposed – understandings of space, childhood, youth and lear-

ning; seen as operational concepts rather than theoretical constructs. Hence, we were able to, as consistently as feasible, illuminate children's and young people's cognizance of physical-symbolic reality – and, in so doing, attempted to imagine, and thus portray, what we believe the world looks likes through their eyes.

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