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▶ To cite this version:

Sara Camponovo, Nadja Monnet, Zoe Moody, Frédéric Darbellay. Research with children from a transdisciplinary perspective: coproduction of knowledge by walking. Children's Geographies, 2021, pp.1-14. 10.1080/14733285.2021.2017405. hal-03872751

HAL Id: hal-03872751 https://hal.science/hal-03872751v1

Submitted on 5 Sep 2024

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How to cite

CAMPONOVO, Sara Rita et al. Research with children from a transdisciplinary perspective: coproduction of knowledge by walking. In: Children's geographies, 2021. doi: 10.1080/14733285.2021.2017405

This publication URL: https://archive-ouverte.unige.ch//unige:157614

Publication DOI: 10.1080/14733285.2021.2017405

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Research with Children from a Transdisciplinary Perspective Coproduction of Knowledge by Walking

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Abstract

Based on a transdisciplinary perspective, this contribution aims to describe the methodological issues presenting themselves when walking is deployed as a tool to coproduce knowledge in a research project conducted with children. An analysis of two projects, one in Switzerland and the other in Spain, shows the relevance of working across a number of disciplines to study the movement of children and adolescents in their living environment. These research projects use a participatory methodological device, combining the interview and walking technique (mobile interview or accompanied itineraries) as a method of analysing and understanding the experiences of young social actors by prioritising their viewpoints. We also show how adopting a transdisciplinary approach to data coproduction enables the participants to inhabit the research through their physical presence and their words.

Keywords: Research with children, transdisciplinarity, coproduction, mobile interviews, walking as a research method, ethnography in movement.

Introduction

There has been increased popularity over the last decade in involving the stakeholders directly concerned by the subject of study in the research process. While some understand this to be a transversal evolution, related to changing demands on science and the evolving role of knowledge institutions in societal development (Gibbons et al. 1994; Nowotny et al. 2001; Polk 2015), some disciplines or fields of study have applied this element with varying degrees and produced interesting outcomes. Recent developments in the fields of Childhood Studies and Children's Rights Studies highlight the benefits of carrying out research with and for children rather than *about* them. Research *with* children in particular is based on a more horizontal model of knowledge production, that recognizes children as the real experts on what it is like to "be a child" (Eckhoff 2019; Kellet 2005; Mason and Danby 2011). Combining children's views of their experiences with the views of adult researchers (insider/outsider) allows research about children to move beyond possible replication (Bradbury-Jones and Taylor 2015) and produce original knowledge. Similarly, geographers, architects and town planners are increasingly mindful of the opinions of citizens in the study and design of urban spaces. In addition to taking an interest on places and spaces of children's live, scholars in the field of children's geographies have more directly focussed on how children and young people experience and access to particular places as well as the ways in which they negotiate their local spaces (Bourke, 2017; Horton et al., 2014; Pyyry, 2015; Rooney, 2019). A genuine interest in the routes and pathways of urban areas gives direct access to the representations people have of their daily lives (Finaly and Bowman 2017; Nansen et al. 2015; Pierce and Lawhon 2015). The data obtained are likely to be closer to the events experienced, and therefore more spontaneous than when researchers are working with memories or accounts of daily itineraries.

In this article, we reflect on two research projects carried out not only from an interdisciplinary perspective – through which insights from various disciplines are combined (geography, anthropology, urban studies, childhood studies, children's rights studies) to help fully understand children's and young people's experiences of mobility – but more specifically from a transdisciplinary perspective with a design to enable knowledge co-construction. Transdisciplinarity is here understood as a research process which integrates in its operation relevant stakeholders in a participative manner (Darbellay, 2015; Hadorn et al. 2008). Although the fields and scope of the two studies differ, they have important similarities in terms of the methodological devices used, which combine walking and interviews. The aim of this contribution is to critically analyse these devices from theoretical, ethical and practical viewpoints and the resulting outputs, to provide a planning framework for walking-research projects and to anchor this framework more broadly within transdisciplinary research.

The article has three parts. The first proposes a theoretical consideration of walking as a tool for knowledge co-production from a transdisciplinary perspective, including the central place of the actors directly involved in the object of study. The second part presents the two research projects, their methodological devices and related ethical challenges. Finally, we present the added value and pitfalls of walking as a transdisciplinary research tool for knowledge co-production with children.

Walking and Talking with Children and Young People: a Hybrid Tool to Coproduce
Knowledge

There is continuing interest in walking and talking as a research tool to understand location, in domains ranging from urban planning and architecture to childhood studies. Combining this

approach with the interview technique has also been shown to be productive in accessing the experiences and feelings of participants. When conducting research with children, there are many benefits of a combined approach: it allows researchers to consider both the specificities of space and mobilities as objects of study of children as research actors, and to alleviate power issues between researchers as children. Children are too often thought of as informers rather than co-producers of their own narrative.

The following section provides a non-exhaustive overview of works previously undertaken from this perspective, as an analytical framework for the two studies presented later. We also argue that approaches of this kind support transdisciplinary research.

A Combination of Techniques

The last number of years has seen a resurgence in the use by some architects and city planners of walking as a technique to understand a location. Le Maire (2013) traces this 'tradition' back to the late 19th century with the work of Geddes, who deployed citizens as experts of the field. In the field of anthropology, Pétonnet (1987, 2002) has shown the importance of walking around in the company of research participants in their usual surroundings to access the significance they give to their experiences and actions (see also Arias 2017; Lee and Ingold 2006; Porter et al. 2010). Several researchers emphasise the heuristic value of walking and ask that the feedback of the town's inhabitants be considered, by accompanying the inhabitants on their daily journeys, and observing how they form ties with each other and their surroundings (Chaudhury et al. 2019; Ingold 2013; Mycock 2019; Nansen et al. 2015; Pierce and Lawhon 2015).

Walking – which includes stopping, deviating, and turning back – becomes inseparable from book-based knowledge: it is a tool used to understand and analyse urban dynamics, but also serves to organise and transfer knowledge. The researcher can fully immerse him/herself in the feel of the participant's experiences. Walking and talking with the actor during her/his journey not only means that the researcher learns the details of the journey itself, but also the individual feelings and experiences of each person as they walk. When the research results are later being compiled, the participant can then be called upon to distribute this knowledge to a wider audience. In recent years, this step is often included in the participatory city planning process.

Combining the technique of the interview and walking as a research method to access the experiences of actors in the spaces they occupy every day has different names and can take different forms: *mobile interview* (Griffin 2019; Porter et al. 2010), walking interviews, 'goalongs' (King & Woodroffe 2017; Kusenbach 2003, Jones et al. 2008), walk-around (Griffin et al. 2016), itinerary method (Petiteau 2008) or accompanied itineraries (Arias 2017; Monnet et al. 2020). With some degree of variation, these tools can be said to mix the interview technique and participant observations to explore the connection between self and place. They are used across different disciplines to examine the representations people give to their surroundings, their actions and interactions or certain concepts, such as health or safety (see Mycock 2019; Pierce and Lawhon 2015). There are many benefits of this combination compared with the simple *in situ* conversation. As Trell and Van Hoven (2010) argue, interviews may produce information which: "[...] is based only on one's mental image of the place, or one's memories. It is challenging then to capture small nuances, multi-sensual dimensions and embodied practices of people's place experiences using only the interview method" (94).

Interestingly, walking and talking with the subject gives direct access (situational and temporal) to a specific event, place or object, and to the significance attached to it by subjects. Walking and talking raises the importance of places along the route which become active triggers, and are therefore "constitutive co-ingredients" (Anderson 2004) of knowledge production. They enable co-production of situated data by stimulating collaborative knowledge between the place, the research participants and the researcher. The data generated by walking interviews is abundant, diverse, detailed, and multisensory, which demonstrates, according to King and Woodroffe (2019, 1270), "that they are a valuable, valid, feasible, and empowering means of conducting qualitative inquiry".

Walking Interviews with Children

As with adults, walking with children and young people can support researchers who are striving to study their subjects' mobilities, related experiences and relationship with their surroundings. When combined with talking – e.g. mobile interview or accompanied itineraries – it gives the added benefit of mitigating some of the shortcomings of the face-to-face interview alone. It is well established in literature that any power issues existing between a researcher and an observed subject are multiplied many times when the subject is a child (Collings, Grace, and Llewellyn 2016; Christensen 2004; Powell et al. 2019; Skelton 2008). The sit-down and face-to-face interview setting, traditionally in a question-and-answer format, can exacerbate these issues, particularly if the interview takes place in a location where adults have official authority, such as a school. Shoulder-to-shoulder conversation (Griffin et al. 2016) makes space for different forms of expression (showing, listening, etc.), spontaneous comments, time for silence, variation in pace, the freedom to escape the researcher's gaze or short interactions with peers. Moreover, the child may have complex memories about the spaces they go to or have been through which may be connected to particular norms, feelings, individuals, etc.

When the researcher is completely led by the subject (the most child/young person-centred form), this production tool gets to the heart of the child's habits by allowing him/her to do what he/she usually does or wants to do. The adult researcher follows the child throughout their journey, listening to and observing the situational context. According to Carpiano (2009), "the go-along allows [...] learning about the local area via the interplay of the respondent's ideas and the researcher's own experience of the respondent's environment. Consequently, the go-along allows a more inclusive process where the respondent becomes more of a participant in the interview than simply a subject that is being interviewed" (19). The hybrid combination of the walking interview and observation in the field offers many benefits when researching the relation between children and space. Maximum consideration is given to the specificities of both the object and the subject of study, increasing the theoretical and ethical robustness of the research.

However, the walking interview presents ethical challenges and risks that the researcher must be prepared to confront. For example, in the framework of the project on the way to and from school, the research had to deal with the unexpected entrance of outsiders (children and adults too) into the conversation. This situation poses ethical challenges about the identity of these people during the transcription of data and successive analysis. Faced with, the researcher therefore explained to the external personal the research context and that their voice was going to be recorded. An *in situ* verbal permission was sought, while guaranteeing the anonymity of their saying; some children agreed to be recorded, others preferred to leave the conversation. In another situation, the researcher had to take out his adult-positioned priority due to a situation that could have endangered the child. In such cases, the power relationship is challenged and this can have repercussions on the normal continuity of the conversation, as the child sees the

status of the researcher as that of the parents and professionals. The child's speech could be influenced by such events and the rest of the conversation could not be as spontaneous as before.

A Transdisciplinary Perspective

One form of transdisciplinary research is based on the central idea that knowledge can be shared and co-produced, not just between researchers from different disciplines, but also with the direct involvement of the albeit non-scientific actors concerned (Bammer et al. 2020; Christensen 2004; Jung 2015; Sime 2008; Van Buggenhout 2020). Transdisciplinary research aims to understand the world through the dialogue between the scientific and academic world and the world of social, political, and cultural reality: this reciprocal collaboration between researchers and social actors (children, adolescents, adults) feeds each step of the research process, adding value to the final results and conclusions, and therefore to its relevance to both science and society (Hirsch Hadorn et al. 2008). Transdisciplinarity can also fosters mutual learning between experts of different levels and to lead to a comprehensive and integrated understanding of a co-constructed research topic, an understanding which is jointly formulated.

The studies which we reflect upon hereafter rely on a transdisciplinary perspective in the sense that they focus on participatory forms of knowledge production and the inclusion of multiple disciplines. Children are approached as knowledgeable participants as opposed to a 'box' from which useful information is extracted: "participation therefore can be considered in terms of ongoing processes where children [and adolescents] and their perspective are actively involved with [...]" (Gillett-Swan and Sargeant 2018, 22). Children as experts of their daily lives are invited to think about their own experiences, uses of space, interactions with their milieu, developing a critical view and providing relevant and valuable information (Camponovo et al. 2020; Willumsen et al. 2014). Having young people actively participating and co-producing the

data makes the practices and realities they experience more accessible, and limits the impact of the filter applied by adults with their own understanding and interpretation of the world (see Pohl et al. 2017; Tobias et al. 2019).

If there is support for the idea of more contextualised research processes (with participation by children and adolescents to create reliable knowledge), it is worth reflecting on the methodological tools underlying these approaches. The question guiding the considerations below is how the hybrid tool of walking and talking with subjects can both support and enhance transdisciplinary research.

Discovery by Walking and Talking: Two Research Examples

The two transdisciplinary research projects described here use methodological devices through which the subject-actors play a substantive role in terms of co-constructing knowledge. In keeping with a participatory model, the research process of both projects includes actors which are the subject of the study. A primary objective is to obtain a clear understanding of the representations, actions, thoughts and opinions of children and adolescents.

The research projects presented below combine the technique of the interview and walking as a research method. In both cases, the hybrid tool is not the only one used but is part of a wider research protocol that applies other complementary methods, such as focus groups, drawing, non-participant observation, etc. As Nansen et al. (2015) have shown, "employing a multimethod approach such as this has been shown to provide children with a range of opportunities to participate; to offer insights into children's perspectives and experiences; and to allow for cross-checking data and, thus, providing more robust findings" (470).

The first study, part of the multi-institutional project (Adopciones y acogimientos en España: desafíos, oportunidades y dificultades familiares y sociales durante la infancia y la adolescencia)¹ aims to understand what connects, or fails to connect, a sample of young people with Catalan society. The project was carried out in Barcelona, Spain, and involved young children and adolescents (aged 10 to 20) who had been adopted internationally. A subsection of the project related to the pathways they take as they walk unaccompanied by adults around the city, to understand how they move us in the urban space, and conversely how it affects and conditions their behaviours (Monnet et al 2016). Before embarking on accompanied itineraries with 18 of them, we worked with groups of primary school children (aged 9-11) from two state schools, located where the Old Town meets the new town. The research required the children to complete questionnaires, and then to participate in individual and/or group interviews to investigate their autonomy in the city. We were immediately confronted with the problem of getting them to talk about their typical journeys and possible explorations of the city (Monnet and Arias 2016). In the second phase, we worked with their adoptive families, who were contacted outside the school setting to accompany their children on walks. We followed them on at least two of their daily trips, often carrying a notepad and sometimes a video camera. The participants' parents also took part in the research with interviews conducted in their homes. The method we used owes a lot to the propositions of Augovard (2010), Petiteau and Pasquier (2001) in which, for the two last authors, a photographer was also presented and the entire conversation was recorded during the walk. In our study, only one researcher accompanied the young participant(s); taking pictures was not systematic and was done in different ways, always negotiating beforehand with the young people. Sometimes the researcher took photos of elements pointed out by the participants or filmed moments of the journey. Although we are

¹ Adoptions and Fosterages in Spain: Tracing Challenges, Opportunities and Problems in the Social and Family Lives of Children and Adolescents, filed by Diana Marre of the research group AFIN, Universitat Autònoma de Barcelona, financed by Spanish Ministry of Economy and Competitiveness between 2013 and 2015 [CSO2012-39593-C02-01].

convinced, like Pyyry (2015), that pictures (photographic or video) produced by young people allow for a multisensory practice that can deepen participant engagement in youth research, only few participants agreed to take photographs of the things they liked or disliked on their daily journey. The pictures taken were, however, a conversation starter to better understand their feelings about certain parts of their journey.

The aim of the second project (Exploring the way to and from school with children: an interdisciplinary approach of children's experiences of the third place)² is to explore the experiences and practices of children when they travel between home and school. In this research, the journey to school is considered as an interface between the child's two main living environments (home and school), and research into this examines the plurality of the individual and collective experiences that each child has throughout the journey, and through which s/he is a social actor. This role means the child is contributing to the co-construction of this interstitial space. In Switzerland, primary school children make the journey between school and home around four times a day, so it is seen as an ordinary activity embedded in the child's everyday life (Porter et al. 2010). It represents moments which are full of experiences, allowing the child to form or even strengthen ties with his/her environment and to influence his/her habitual surroundings. It is also a space for fun or release, important for physical and psychological wellbeing. To reflect the diversity of children's realities during their journey, three different regions of the Swiss Alps were used as fields of study, across nine case studies, in the cantons of Les Grisons (German-speaking), Le Tessin (Italian-speaking) and Le Valais (French-speaking). These regions have geographical and political similarities, but differ in other ways such as

² Request n° CR11I1_166050 filed by Dre Zoe Moody (HEP-VS), Prof. Philip D. Jaffé (CIDE) and Prof. Frédéric Darbellay (CIDE): « Exploring the way to and from school with children: an interdisciplinary approach of children's experiences of the third place ». Specialised Committee on Interdisciplinary Research (CoSP-ID), Swiss National Fund (FNS).

language and culture. A total of 71 primary school pupils (aged 8-12) took part in the research. To ensure variety of the children's routes to school, three different schools from each canton were chosen in a variety of settings (urban, suburban and rural/mountain). The 71 participants' journeys are equally heterogeneous, ranging from a minimum of ten minutes to a maximum of half an hour on foot, and covering distances of between 500 metres to 5 kilometres. They travel alone or with friends or classmates, without parents, and using different modes of transport (walking, bicycle, scooter or school/public transport).

To gather the viewpoints of the children on their way to/from school, the "mosaic" methodological approach was used. It combines three participatory tools deployed consecutively and encourages the child to express him/herself freely and form a personal opinion on a single topic raised repeatedly (Clark 2010; Trell and Van Hoven 2010). The mobile interview is one of the methods proposed to talk about the journey; other elements are drawing the route and giving a narrative of it, and an activity known as Diamond Ranking (Clark et al. 2013) in which pictures are ranked and prioritised, but these tools will not be described further here. In our research, each child followed the route between his/her home and school, or vice versa, accompanied by a member of the research team, but in the absence of parents. To avoid interference with the participants' daily routine, they were free to choose their own means of transport (walking, bicycle or scooter) and their companion. In some cases, this freedom had an impact on the quality and quantity of data produced; some children focused more on riding well or paying attention to traffic than on conversing with the researcher. Others found it difficult to match the pace of the bike or scooter to that of the adult and as a result, the recorded audio was not always audible. In these situations, field notes made after the ride by the researcher were essential in completing the transcripts of the recorded interactions.

In some situations, children who were not participating in the research project joined the conversation. This made it difficult for the adult researcher to follow the dynamics of the conversation closer to the children's culture. There are also ethical issues relating to incursions of this kind. Just as the mobile interview enables the researcher to enter the subject's reality and actual experiences *in situ*, then outsiders or "regulars" can also join the conversation at any point. In the case of the journey to school, several children meet their friends and companions along the way. How can their voices be included in the data? Is the verbal consent of the subject sufficient to meet the ethical issues around participation in the research? Or should this outsider be excluded? In our project, when friends of the interviewee joined the conversation, the researcher informed them about the study and asked for their explicit consent at being recorded, guaranteeing their anonymity in any data produced.

Although interventions like this could initially be considered a pitfall of the hybrid research tool, data analysis reveals how comments made by outsiders complement the overall content of the conversation and help answer research questions. Therefore, in this project, data co-produced with regulars were integrated anonymously (using for example "child", "friend") to protect the identity of all children including those outside our sample.

The mobile interviews intersected periods of verbal interaction – ranging between predetermined open questions (non-directive interview guide) and spontaneous context-based questions (on the here-and-now) – with moments of listening or observing their surroundings en route. The observations allowed the researchers to analyse the way children and young people's routines take shape and evolve throughout the journey, and also to understand how

children socialise among themselves and with the community they share this time and space with, showing the different ways in which they express their agency³.

Methodological Considerations of Walking Interviews as a Transdisciplinary Research Tool

We recognise that there are many methods for involving children in research. In the research projects presented here, the mobile interview or accompanied itineraries were used to coproduce knowledge with children and young people about their experiences in space. Through empirical examples, we will discuss the added values and pitfalls of this method in transdisciplinary research with children.

Encouraging Speaking and Accepting the Unexpected

It is difficult to understand and interpret the experiences of people in a particular setting if they are only studied via observation: "solitary observations of a field setting, whether conducted from a distant or a close vantage point, fail to access the environmental perception and experience of (other) members" (Kusenbach 2003, 461). Merging the walk with the classic interview creates a good opportunity to examine the behaviours of subjects *in situ* by directly accessing the interpretations they give to their own actions, and the actions of other people present. This cohesion puts the researcher in contact with the reality of the field: accompanying the interviewee on his/her journey helps the researcher access the moments in the interviewee's daily life formed from present or past experiences and emotions, which develop in time and space (Lee and Ingold 2006; Kusenbach 2003; Porter et al. 2010). Moving through a space side by side often makes conversation easier, and data which tends to be difficult to acquire using

³ Agency is defined as "children's ability to construct and determine their own social lives, the lives of those around them, and the societies in which they lived" (James and Prout 1997, 8).

more traditional means, such as observation without intervention or face-to-face interview, can be obtained. For example, a 14-year-old boy who sees a red car passing remembers the day he left the orphanage, because it reminds him of the car in which he travelled to move in with his adoptive parents. This trigger allows the boy to express his feelings about a situation which would have been difficult to obtain in a conventional interview setting. A certain point on the journey has suddenly converged with his life trajectory; the urban and biographical pathways intertwine. A familiar context to children and young people, such as the way to and from school or the urban spaces they usually frequent, facilitates talking. Moving around familiar spaces and talking directly with children and young people about what they are doing, their emotions, etc., enhances their perspective and increases the possibility of showing what they value and what is important to them. In this informal context to which they belong, children and young people can feel more comfortable in communicating freely – verbally and through their actions and reactions – without the fear of having to meet adult expectations.

Mobility is central to people's narratives and provides meaningful insight into their experiences by showing how they shape their life: "the mundane mobilities of the everyday, reflected in the individual narratives [...], incorporate substantial dynamic and embodied encounters with place [...] and encourages conversation, companionability and the sharing of understanding" (Porter et al. 2010, 92-101). So when we cross the square where Joan (aged 13) often plays without his mother, he greets a man. This act leads the researcher to discover that Joan had been told off by his mother a few days before when he had done the same thing in her presence; seeing her son greet this stranger led her to imagining the most extreme scenarios, and she reprimanded him, saying he must never speak to strangers. When she had finished reprimanding him, Joan reassured his mother, explaining that this person was the grandfather of a child with whom he often plays in the square, so personally known to him. This is evidence of his own social

connections, and his own inclusion in the community. Again, it would have been difficult to elicit this information in a different context.

In addition to this opportunity, the mobile interview and accompanied itineraries leave a certain amount of freedom in the interviewee's response (Guibert and Jumel 1997): even though the researcher may have a pre-defined interview guide with the main topics to be covered and possible open questions, unexpected situational elements may at any time produce triggers or new subjects of conversation (Carpiano 2009; Trell and Van Hoven 2010). During the mobile interview with Élodie (aged 11), for example, a black cat crosses the road in front of us. The girl suddenly diverts the conversation by explaining that she often meets animals on the way to school and that she likes to stop and stroke them. In the discussion that followed, raising a concern, she unexpectedly changes the subject to show the researcher a place on the road that she thinks is dangerous and where she has to cross. Children are very anchored in the here-andnow, spontaneously associating their ideas in a situational context: information which might have remained unspoken is unexpectedly revealed during the *in situ* conversation. The context is not just used by the researcher as a "source of discussion" or a pretext for removing the imbalance in the relationship between protagonists. The actors themselves flag and highlight the elements of greatest importance to them, using them as markers of their daily experiences. By doing this, they are actively contributing to the co-construction of the conversation by drawing attention to elements which could be overlooked, or seem uninteresting to the interviewer. Walking in context becomes a catalyst of a dynamic conversation, and therefore a source of information which is difficult to examine using other investigative tools (see also Cele 2006). Based on the results of another research project aimed at exploring routine and cultural relationships between groups of young people in public spaces, Ross and al. (2009) also highlighted this free conversation: "the interactions that took place on the move were dynamic,

characterized by a freer-flowing dialogue, moving from topic to topic, returning to previous topics, allowing unstrained gaps and pauses. The pressure to converse was removed somewhat from these research encounters" (619).

The Importance of Silence in the Research

The silence which sometimes intervenes during interviews is considered a marker of conflict (Masson and Haas 2010). It can be seen as a problem, as a sign of stress or fatigue, lack of interest or even disagreement of the interviewee with the questions asked or, more generally, a refusal to talk about a topic raised in the conversation. However, an increasing number of researchers are highlighting the importance of silence in the research process (MacLure et al. 2010, Torbenfeldt Bengtsson and Fynbo 2018) or in an interview situation (Mazzei 2004). They do not view silence as an obstacle in the smooth advancement of the research, but as an element to be questioned and incorporated into the analysis. It is considered a voluntary action by the participant (unlike the first attitude in which it is seen as a sign of difficulty or a lack of ideas) with many possible meanings: "the silences are not always veiled, nor are they always unintentional, but they can often be deliberate or purposeful, a choosing not to speak" (Mazzei 2004, 20).

Thierry (aged 12) uses silence in his mobile interview as a signal to the researcher: he does not want to give any more details on a topic that he finds personal. He explains that he enjoys the journey to school without adults because "that's when we have privacy. When I talk to my mates, we talk the language of school, not family". When the researcher tries to find out what topics they discuss, or what he gets up to with his friends in the absence of adults, Thierry stops talking. He looks at the researcher and starts to laugh: he uses the strategy of the smile combined with silence to show the researcher that naturally things happen on the way to school, but he does not

want to talk about them. The researcher reminds him that the contents of the discussion will be anonymous, and it is up to him whether he wants to talk or not. After a few seconds of silence, the child says that sometimes they mess around, then he falls silent once again. The researcher understands that he does not want to talk about this anymore and changes the subject.

Consideration of the child's right to speak, as contained in article 12 of the CRC, lies in the right to silence: "the importance of recognizing a child's rights to silence as an accepted communication choice is essential in supporting a child's rights to express themselves at their level of preference" (Gillet-Swan and Sargeant 2018, 122). Silence ("chosen silence") can therefore be employed strategically to indicate that the speaker does not wish to give further information: "certain silences can therefore show resistance to disclosing thoughts, behaviours and knowledge which is private and must remain so" (Masson and Haas 2010, 9). Like Thierry, Tina (aged 10) uses her right to silence to delve no further into the question asked by the researcher. During the mobile interview, the girl was with a friend who often walks with her. When asked, "What do you talk about on your way to school?", both girls hesitate before answering. They look at each other and start to laugh, and then the girl's friend says: "I don't think we can say". Later, Tina explains her reticence at answering the previous question: she says that it's very important for her to walk to school without adults because she and her friend can share secrets that they would not tell anyone else. In this context, silence serves as an instrument of resistance, as a "form of agency that works the gap between 'what goes without saying' and 'what cannot be said'" (Visweswaran 1994, as quoted in MacLure et al. 2010, 498).

Silences are indeed the signs of situations which we do not want to expose, but also the trace of things that cannot be said face to face to avoid embarrassment, or things that are forgotten, unacknowledged or not known. Silence provides a space for exchange and negotiation to co-

construct knowledge (Losonczy 2002). It shrinks the gap in mutual observation and encourages trust between speakers, as well as allowing exploration and self-exploration, and presenting opportunities for relationships in which the body also speaks and acts. Silence also indicates acceptance of the slow pace which gives the other party time to ponder his/her thoughts and gestures, the unsaid things. Active listening, which includes acknowledging silence, is a basic methodological element of mobile interviews and accompanied walks in which listening and observation are inseparable and mutually reinforcing. In situations like this, silence maintains the flow of the interaction; it signals knots and tensions; it helps strengthen the links between speakers, and is a space for negotiating what is or is not meaningful to the speaker. Sometimes silence is broken by the participants singing or calling out to friends or acquaintances; some do this to try to feel closer to other people, while it marks a desire for distance in others. It is certainly easier to walk in silence than to meet it head on in a static conversation. Silence is an exercise of the right not to reply as acknowledged by research protocols, which are harder to respect in a more traditional interview setting.

Moving Beyond Power Inequality and Placing the Child at the Centre

The main methodological issues of transdisciplinary research are continuous collaboration and negotiation between speakers at every stage of the research process. The aim is not that the speakers remain fixed in their positions, but that they feel able to negotiate their standpoint; this enables constant, mutual learning that leads to a clearer grasp of reality. Walking with a young person goes some way to balancing the power relations between the adult (researcher) and the child. The feeling of being totally involved with their bodies and words creates a more symmetrical relationship between the researcher-adult and child-adolescent-research subject, and researchers can develop strategies to restore the power balance between themselves and the child, who is both their subject and research partner (Mason and Urquhart 2011). This method

means that the child is not just seen as a subject to be interviewed; he or she is given a more central place in the research process (Carpiano 2009). The partners therefore establish a more even, balanced relationship, and the child's opinion is taken seriously, devoid of value judgment, and with a direct connection to the child's environment. This opinion may be examined in terms of its position in the conversation.

As part of a transdisciplinary approach using walking, adults and children are co-constructing the research project through true partnership: "research participants contribute their subject expertise and the researcher his or her academic and methodological expertise" (Heath et al. 2009, 74). Walking and talking in the streets allows for risk-taking and alleviates the feeling of being interrogated, while stimulating children and young people to clarify and interpret things that are important to them. More informal discussion gradually reverses roles: the children and young people become the guide of the adult and the adult becomes the guided. Walking alongside the young people, guided by them in transitional spaces gives access to their habits and rituals in a very concrete and sometimes even intimate way, thanks to a shared experience which can generate a form of complicity between the walkers. Conducting transdisciplinary research and reducing power inequalities gives access to knowledge in context, and in turn to the meaning ascribed to that knowledge by its authors (Masson and Haas 2010). Researchers have two roles in this process: they are responsible for the project's direction and the robustness of the methodology applied at every stage, and in charge of fostering the emergence, disclosure and translation of what is co-constructed between them and participants, and of accepting the unexpected. While it is true that the methodology must allow a degree of flexibility, these roles carry a very clear epistemological and research ethic, and should also anticipate the emergence of other possible scenarios. We do not just see knowledge being furthered under these conditions, but also the co-creation of a new scientific culture (Anderson 2004).

The difficulty in working with the adopted children in Barcelona was convincing them to participate in the study and then commit to the project. It was not easy to find time in their often very busy lives, and once the work began, some subjects were not comfortable with the proposed protocol; they considered it too intrusive for their friends and often chose an itinerary with the researcher only. However, participants who saw the process to its conclusion felt increasingly comfortable and sometimes forgot that the meetings were part of a research project. One subject's mother even asked us what happened on these walks through the town as her son came home calmer and more relaxed. She found the approach much more effective than sessions with the psychologist and would have liked the meetings to continue.

As the project progressed, the researchers gradually became part of the landscape of the journey to or from school. Walking with the children allowed the researchers to join their "community" (see also Carpiano 2009) and be party to interactions which would not occur through observation alone. This sharing of experiences encouraged bonds to form between the researchers and the children, which in some cases led to the children sharing intimate secrets. One participant, Lucio (aged 9) told the researcher that he had thrown balloons full of water through the window of a house and then run away so as not to be caught. He said he had never told anyone about the prank, especially his parents as he was afraid of getting into trouble. Creating a good feeling with the actors of the research allowed the researcher to get inside their experiences and access personal and previously untold accounts. Walking together creates an environment conducive to intimacy.

In other cases, we observed that one mobile interview was not enough to overcome the power imbalance between adult and child. Some children were very shy when they were on their own with the researcher, who was a "stranger" to them. The conversation did not progress spontaneously nor was it centred in the here-and-now, but was more framed by questions and immediate yes or no answers. According to Griffin et al. (2016, 24), "The success of an interview is highly dependent on how comfortable the participants feel with the researcher and with the way the researcher interacts with them". We indeed observed that when the same child was not being directly interviewed but present at another participant's interview, they joined in the conversation more easily and spontaneously, relating their experiences of the journey in their own words. We also noted that combining various tools of expression, such as drawing and talking about it or a group discussion on photos, encouraged the quieter children to speak up. The mobile interview can be used in tandem with other qualitative methods in a complementary approach to reduce the limitations of the various tools. In this case, a combined approach produced information that was complementary and new to the study which could not have been obtained using just one method.

Conclusion

There is no one perfect method for conducting transdisciplinary research with children, but there are many which can be used. It must be stressed however that the level of access to the representations, practices, thoughts and feelings of children differs depending on which tools are used. We have seen that walking with children and adolescents provides opportunities for speaking out more readily, for observing them and understanding their relationship with their surroundings. It allows the intimacy of their accounts, practices and experiences to be accessed more easily.

In both the studies described here, children and adolescents have occupied a central, active place in the data production process. From the very beginning of their engagement with the process, they have been considered as capable subjects, essential to understanding the themes being investigated. Both the mobile interview and accompanied itineraries allow the adoption of a holistic approach which highlights the personal and collective practices of individuals, and then examines the significance they represent (Mason and Haas 2010). This type of approach enables more direct access to the meaning that participants give their experiences, without misrepresenting them and best reflecting their reality. Choosing to walk literally in the steps of children and adolescents produces integrated and contextualised socio-cultural data. This process of co-producing data and knowledge develops with the flow of verbal and non-verbal exchange, shaking up the conventional researcher-research participant relationship: "social relations [...] are not enacted in situ but are paced out along the ground" (Ingold and Vergunst 2008, 1). Sensations, feelings, emotions, and memories come into play through their physical presence and their words, bringing us closer to the realities of children which cannot always be rationalised. Viewpoints are discussed and commented on, not to determine who holds the truth about a subject, but to understand the connections young people make with their environment, both physical (their surroundings: the buildings, streets, squares and other urban or rural features, as well as plants and animals) and social (relationships between peers, parents, and children, with other adults, etc.).

At the heart of the research approach used here lies the notion of travelling together. The researcher is moving through surroundings which are unfamiliar to him/her, whereas the children are the experts of their experiences in their usual environment. The particular physical features, both positive and negative, of the space travelled can present a perfect excuse for diverting or steering the conversation to invigorate and/or reenergise it and reveal unexpected

aspects which might be difficult to attain by other means. Improvising and tinkering with transdisciplinarity become integral elements of the research protocol, with the children and adolescents actively involved in the flow of the research. When the young research subjects display surprise, ask questions and/or make observations, they are influencing the topics of discussion, pointing out areas of interest and qualifying the researcher's expectations. Accompanying children on their routine daily journeys allows observation and analysis of how they negotiate their place in their city or village, and more broadly in society, while asserting their right to use and reinterpret the space. While the place of children in the transdisciplinary research process has been clarified in this article, the issue of incorporating their voices into a presentation and dissemination of research findings is crucial. How do we contemplate and organise a joint public communication of results involving researchers and children and adolescents? How do we best utilize the results, starting perhaps with presenting recommendations and concrete actions to the public authorities and parents who genuinely take children's evaluations and views into account? How can children become involved as co-writers of scientific publications, and their right to the research and visibility in its outputs recognised? These questions are currently being investigated and tested and could ultimately lead to a transformation in transdisciplinary research itself.

Lastly, it seems that the hybrid nature of this tool calls for several possible improvements, or areas of development, to further reinforce the quality of participation and resulting co-produced data. We therefore propose four possible areas of exploration: the first have already been utilised, more or less intentionally by the researchers, and the last have yet to be tested to determine their value.

The first area to explore is combining the mobile interview tool with other data production methods, as was the case in both research projects included here. Another idea would be to set up walking focus groups to study the diversity of representations of the same journey. Group discussion would give access to information, debated *in situ* by the participants, on the variety of use and significance of the space for young people. A third possibility would be to photograph, sketch or draw key places or situations in the individual mobile interview, and then discuss the images with the participant(s) and others in a different setting. The last proposal, based in the digital world of today's young people (Galli and Renucci 2020), would be to build the mobile interview into an app so participants can record snapshots of their journey (different types, e.g. images, sounds, mapping, etc.). These elements would be used to reconstruct the narrative of their "environmental wholeness" (Bourke 2017), but also can serve as the basis for discussion between the young people in which every participant can describe their journey to the others and the adult-researchers, collectively appraising the places they pass through.

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