Forced and Uncertain Co-presence. Smart Cameras and Distant Homework Supervision in Eastern China

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Abstract *In this chapter, an argument about a new modality of information and communications technology-based co-presence termed 'forced and uncertain co-presence' is developed based on the empirical analysis of the use of smart cameras in distant homework supervision in Eastern China. Drawing on a long-term ethnography of migrant parents installing monitoring cameras on the children's study table and watching them do homework from afar, I observe a close supervision of children's homework and a high level of involvement in their school study among Chinese migrant parents. However, the use of smart cameras deprived the children of the right to control their own presence and brought about what I call 'forced co-presence'. It also produces 'uncertain co-presence', meaning that the state of co-presence is not measured until the parents retrieve the data from the camera as they review the recorded video or read the message transmitted by the artificial intelligence to their phone. The 'forced and uncertain co-presence' has a negative impact on children's emotional experiences with their parents at a distance. They feel controlled, untrusted and insecure under the invisible watch. In conclusion, the practice of smart monitoring enriches the concept of co-presence and sheds light on translocal and transnational family studies in digital times. Although the analysis is based on translocal homework supervision experiences in Eastern China, the concept of 'forced and uncertain co-presence' may be applicable to wider societies as smart monitoring has increasingly been used in child and elderly care since the COVID-19 pandemic.*

Keywords *translocal parenting; migration; copresence; monitoring; China*

Introduction

Home monitoring is especially popular among translocal families in Eastern China. During China's great internal migration, many middle generations migrated to work in the city while the children and elderly stayed behind in the village (Chen, Liu, and Mair 2011; Murphy 2020). At first, monitoring cameras were only installed by migrants at the entrance of their village house for security reasons. Soon, as

cameras were combined with a microphone, loudspeaker and cloud storage and equipped with artificial intelligence (AI) that allows them to analyse video in real-time (Chong 2022), migrant parents started to install the cameras above the children's study desk to supervise them doing homework at night. The AI can mark the specific time at which the child appears and leaves the desk and transmit the information to the parents' smartphones. With the livestreaming videos and the text-based AI reports, the migrant parents can create a strong sense of co-presence for the children without sharing the same geographical location or staying with them constantly.

Smart cameras have become affordable and accessible for ordinary Chinese people in recent years. The monitoring industry has grown quickly in China since the state announced its SkyNet Project in 2007 to establish a widely distributed video surveillance network in urban areas and its SnowLight Project in 2015 to extend the surveillance network to rural areas of counties, townships and villages (Li 2017). According to the 2017 documentary *Amazing China*, which was produced by China Central Television and the Publicity Department of the Chinese Communist Party, more than 20 million monitoring cameras have been installed in China. The huge investment in the relevant industry advances the technology and lowers the price of smart monitoring devices. A simple video camera in China can be as cheap as 10 yuan (around 1.3 euros), while an interactive camera with loudspeakers, a connection to a smartphone and real-time AI image processing technology costs about 90 yuan (around 12 euros). The devices are also easily accessible, as they are available both on shopping websites online and at local supermarkets for ordinary customers. Advertisements for smart cameras are widely posted on social media, such as Tik Tok, and they are transmitted to migrants repeatedly according to the recommendation algorithms developed by AI.

In such a context, smart cameras are increasingly used as a communication tool for translocal families in China. Despite their popularity, how smart cameras are transforming the experience of co-presence and how this affects the quality of parent-child relationships at distance is understudied. To fill these gaps, this study examines the experiences of facilitated homework supervision with smart cameras from the perspectives of the migrant parents and the children left behind. Two specific questions are explored: (a) What kind of co-presence is experienced during distant homework supervision via smart cameras, and (b) how does the use of smart cameras affect the quality of parent-child relationships? In this chapter, co-presence is defined as a shared perception of relatedness between the interactants (Alinejad 2019; Montanari and Schlinzig 2022), which is acknowledged to be essential for the production of kinship ties (Carsten 2000). The scholarly discussions on the importance of distant co-presence in translocal family construction is reviewed in the next section.

Constructing distant co-presence, and doing family translocally

Physical proximity used to be vital for enabling co-presence because the temporal and spatial commonality could maximize the abundance of symptoms in human interactions, as argued by Schütz and Luckmann (1974, 66), and because it allowed multidimensional information exchange during social interactions, as argued by Goffman (1983). However, as the development of information and communication technologies (ICTs) has enabled people to connect as if the interactant across a long distance is 'really there', physical proximity and face-to-face interaction are no longer premises of 'doing family' in contemporary digital societies. With the development of new media, spatially dispersed families can communicate and care about each other at high frequency and low expense. They can create stable emotional and social bonds in migration and multilocal living arrangements (Montanari and Schlinzig 2022).

Based on observations of how people sustain family relationships across borders, Baldassar (2008) identified two other forms of co-presence: proxy and virtual. Proxy co-presence is facilitated by special tangible objects, including photos, letters, cards and gifts that embody the spirit of the absent person. These tangible objects function as a substitute for the absence of being, and also represent the incorporeal feelings of love and lack of presence. Virtual copresence, also termed as "ICTs-based co-presence" in Baldassar's other work (2016), is commonly constructed through discursive information exchange via video calls, phone calls, SMS messages or emails. In a later work, she identifies the contrasting modalities of virtual co-presence mediated by various communication tools (Baldassar 2016). Co-presence constructed during video calls on Skype, for example, is immediate, while that produced during text exchange via WhatsApp is more intermediate. However, immediacy has both pros and cons. Video chat can produce a sense of togetherness effectively, but can also result in long and meandering conversations in the end. Texting cannot deliver multisensory information or a sense of togetherness in the moment, but it does give individuals greater autonomy in communication, such as when to read and respond. Hence, Baldassar argues that the new forms of communication do not always replace old forms but rather enrich the polymedia environment that can function as a 'vibrant matter' and facilitate the family to be together across distance.

The notion of a "polymedia environment" was first proposed by Madianou and Miller (2012). They argue that the individual communicative medium is relational in the context of all other media, and it is important to understand how polymedia, as an environment for communication, shapes the experiences of interpersonal relationships. Based on the theory of polymedia, Madianou (2016) identified a new form of co-presence and termed it "ambient co-presence". She observed an increasing prevalence of ubiquitous connectivity enabled by the 'news feed' of social networking sites, which gives rise to a peripheral awareness of distant others without

engaging in purposeful or intentional contacting actions. In this kind of co-presence, although awareness of other people's presence is peripheral, the co-presence experience is pervasive and intense. Thus, it can enhance one's sense of belonging to a dispersed family or a community, on the one hand, and create a sense of social surveillance, on the other.

"Ordinary co-presence", another mode of co-presence emerging in the context of polymedia, is proposed by Nedelcu and Wyss (2016). The notion of 'family' over the last twenty years has been more widely understood as an ongoing accomplishment and a result of kinning practices than as a biologically based and spatially bounded social institution in both anthropology and sociology (Strathern 1992; Carsten 2000; Finch 2007; Morgan 2011; Sahlins 2013). Following the practice turn in family and kinship studies, Nedelcu and Wyss (2016) argue that the matrix of ICT-based communications can facilitate family construction across distance by developing online family routines. As long as people construct ritual, omnipresent and reinforced interactions via new media regularly, they can do their families without staying spatially proximate to each other.

These scholarly works challenge the centrality of physical co-presence in family making, and all emphasize the importance of new media technologies in shaping novel ways of doing and practicing families in the contemporary digital world. My research intends to further the ICT-based co-presence studies by focusing on the novice communicative technology of 'smart cameras', which are also called 'interactive home cameras' and 'talking cameras' in everyday life by Chinese people. Monitoring cameras were originally invented for security purposes but are now commonly used for parent-child communication and child supervision in China. Regarding young infants, parents install baby monitors to check their child from another room; for school-aged children, parents use two-way talking cameras to communicate with them and supervise them doing homework. In this chapter, I focus on the distant homework supervision practices between migrant parents and their stay-at-home children and explore how the increasing use of smart monitoring cameras can enrich the concept of co-presence as well as what consequences it may bring to the parent-child relationship in translocal families.

The research and empirical context

This chapter arose out of a larger study concerning translocal kinning and caregiving in Eastern China. The ethnographic fieldwork for the larger study was conducted over ten months between 2020 and 2021 in four locations in Eastern China: the city of Hangzhou where the migrant informants work, Peach Blossom County in northern Zhejiang province, Dragon Village in southern Anhui province and East Town in eastern Jiangxi province, where the migrant informants come from and some of

their family members still live[1]. During the fieldwork, I conducted in-depth interviews with 48 people, participant observation of 19 families and informal talks with over 170 people. Not all informants had experience with child monitoring, therefore, this chapter is mainly based on participant observations with three families that installed smart cameras for child supervision, 28 pieces of interview transcripts with in-depth discussions around distant homework supervision, and 15 pieces of discussions on parenting via smart camera on social media of Weibo and Xiaohongshu.

Among the three families that installed smart cameras for child supervision, Family Wen and Family Liu identified themselves as lower-income families, and Family Zheng identified themselves as a middle-income family. The migrant father of Family Wen bought two monitoring cameras for 88 yuan (about 11 euros) and 174 yuan (about 23 euros) in 2020. The cheaper one was installed at the entrance of the house to record the yard and the gate for household security. The more expensive one was installed in the room of the two elementary schoolgirls for homework supervision. The migrant mother of Family Liu bought the monitoring camera for 120 yuan (about 16 euros) in 2018 and installed it on the ceiling of the dining room facing the dining table, on which the family has meals and the elementary school daughter does her homework. The migrant parents of Family Zheng spent 160 yuan (about 21 euros) on two monitoring cameras in 2019. One is installed at the entrance hall and the other in the junior high schoolboy's bedroom, where he studies at night. I visited the homes of all these families in both Hangzhou and the village and observed how they practice distant homework supervision in person.

The 28 interviews were conducted with 14 migrants (8 female and 6 male), 6 stay-at-home elderly people (3 female and 3 male), and 8 stay-at-home teenagers attending junior and senior high school (3 female and 5 male). The interviews last between 40 and 130 minutes, and were all conducted one-to-one in person. I also talked to four elementary schoolchildren and two kindergarten children informally when their adult supervisors were nearby. Because the conversations are unstructured, unrecorded and noted down in the fieldnotes, they are not counted as interviews but as part of the field observation.

The discussions on camera-facilitated parenting on social media were collected from March to September 2021. Ten pieces of discussion were collected from Xiaohongshu, and each has over 40 pieces of comment. Five pieces of discussion (including two videos) were collected from Weibo, and each has over 200 comments. All these discussions were posted by migrant parents. Among the 15 pieces of discussion, 6 are about how they got to know about smart cameras and comparisons of cameras of different brands. Nine pieces are about their experiences of distant homework supervision via camera.

1 Peach Blossom County, Dragon Village and East Town are pseudonyms.

The analysis of the data mentioned above is again embedded in the broad project of distant caregiving and family making in China. It cannot be separated from the background knowledge I have learnt during the long-term immersion in the fieldwork site and the daily interactions with the informants. The conversations about their anxieties regarding a better life, motivation for migration, understandings of their own childhood and relationship with their employers are not directly relevant to the topic of 'distant homework supervision via smart cameras' but provide me with rich material to understand their words between the lines and help me avoid interpreting their practices arrogantly from my own perspective. In this chapter, I want to give the migrant parents and their stay-at-home children a voice by developing substantive theories from an interpretivist approach (Denzin 1997; Yanow and Schwartz-Shea 2014), drawn from the grounded theory traditions (Glaser and Strauss 1967; Geertz 1973; Schwandt 1994). In the following section, I will, firstly, provide some background information about homework supervision in China to help the readers understand why the migrant parents are so eager to monitor their children's study from afar.

Parents and homework supervision in China

Supervising children's homework and caring about their exam marks at school constitutes an important part of parental responsibility in contemporary China (Zou, Anderson, and Tsey 2013). Studies show that Chinese parents not only have high expectations for their children's professional future and educational attainment, but are also highly involved in their children's education (Kipnis 2005; Obendiek 2016; Zhang 2020).

On the one hand, Chinese parents participate voluntarily because they believe education is the only way to help their children achieve security and success in marketized China (Doepke and Zilibotti 2019). To help their children seize the only chance they see, the parents engage in the children's study process intensively and push their children hard to study. On the other hand, the parents must get involved in their children's school education because schools nowadays shift much of their work to parents in the name of encouraging parent-child interactions at home.

The intensity of parental involvement in children's homework differs in the empirical cases. Here, I summarize the six tasks the parents perform in supervising the children's homework.

Parents' tasks of homework supervision			
	Interaction with the children	Interaction with the teacher	Frequency
1	(compulsory) Check whether the children have finished the written assignments on their own.	Teachers may call the parents if they did not check, and criticize them for being uncaring about and irresponsible for the child's study, future and well-being.	Daily
2	(compulsory) Check whether the children have finished the oral assignments (e.g. reading, reciting and mental calculation).	The parents need to record videos of children doing the oral assignments and upload the videos to the class's online chat group.	Daily
3	(compulsory) Review the child's exam paper. Note in their minds where the child lost points and give the child extra targeted practices.	The parents need to sign on the exam paper or send a message to the teacher to prove that they have reviewed the exam paper.	Bi-monthly for elementary school; monthly for junior high school; weekly for senior high school.
4	(compulsory) Cooperate with the child in certain kinds of homework assignments. Usually for lower grade students' parents. Exemplarily, preparing 1 kg rice for the child to bring to school to learn weight units; do paper cutting with the child.	Children usually cannot finish these homework assignments without the help of adults. If the parents do not participate, the teacher would criticize the parents publicly in the class's online chat group.	Three to five times a semester.
5	(compulsory or voluntary) Watch the children doing homework, mark the result and supervise the child correcting what is wrong.	When it is compulsory, the parents need to take pictures of the marked homework and upload it to the chat group.	Daily
6	(voluntary) Give extra homework to the children to either learn in advance or consolidate what has been learnt already.	Teachers would praise the parents' close supervision in the class's chat group, and encourage other parents to supervise closely as well. Teachers would also have a better impression of the child and the parents because they 'cooperate' well with the school education.	Daily

If the parents fail to finish the compulsory tasks, the teachers will, firstly, call the parents in private and persuade them to cooperate with the teachers at home. If they continue to ignore the children's homework, the teacher will name the parents in the class's online chat group and shame them as irresponsible and uncaring. Here is what a teacher writes in a class's WeChat group when a mother forgets to check and correct a child's homework.

> Teacher: @Jinghaoran Mom (Jinghaoran is the child's name) How busy were you during weekends? Do you care about your child? Last term your child scored 98 in the final exam, look at this assignment, how many marks can he get this time? A good child has been ruined like this by you!
> Teacher: @all parents I am so angry. I've posted the answers for reference in the chat group, but you just didn't look at it and correct your child's assignments. It is useless for the children to do exercises if you don't correct their exercises. Only if you mark what is wrong, will the teacher be able to see what the child has not mastered, so that we can target our teaching. How many hours a day does a teacher have to go through all the children's homework? I teach three classes this semester, I will need to correct assignments from 125 children every day. Is it possible? Think of it yourself. How can we do our job well, how can we help your children, if you, the parents, don't cooperate? Please invest your precious time in your children. A child's future is most valuable! Parents who have not corrected the homework should finish it tonight. Take pictures and upload them to the group.

According to this quote, the teaching activity of marking and correcting homework is defined as the parents' responsibility. The shift of responsibility is commonly reported in my conversations with other parent informants and has been reported many times in the news in China in the last few years. Marking homework is a vital part of teaching, as it helps the teachers adapt to the level of the students. However, as the teacher in the quote complains, her current teaching load is overwhelming, and she, thus, does not have time to check homework assignments carefully individually. The huge workload is commonly experienced by teachers in China. According to the National Education Development Statistics (2021), the teacher-student ratio in elementary school is 1:16.33, in junior high school 1:12.64 and in senior high school 1:12.84 in China (Ministry of Education of the People's Republic of China 2022). Although the ratio is similar to the Organisation for Economic Co-operation and Development's average, which is 1:14.4 at elementary school and 1:13.6 at secondary schools (OECD 2022), the teacher's workload can still be greater because of the longer teaching hours. According to the informants, the average teaching hours of elementary school lower grades are 910 hours, elementary school higher grades 1050 hours, junior high schools 1190 hours and senior high schools 1485 hours. By contrast, the teaching hours of the Organisation for Economic Co-operation and

Development's average are 885 hours at elementary schools and 776 hours at secondary schools (OECD 2022). Therefore, the teaching load for Chinese teachers is much greater, and they usually need to work overtime to finish all the tasks (and all the extra work is unpaid). To deal with the overwhelming work, many teachers have no choice but to shift the task of marking homework to the parents. However, teachers' huge workload is a result of structural and organizational dysfunction. Neither the teacher nor the parents should take responsibility for that. It is the education bureau and the schools that should hire more teachers to share the work burden. In the current situation, the unreasonable workload was solved by the free labour of the parents and the teachers, thus, making the education bureau and the school invisible in the negotiation.

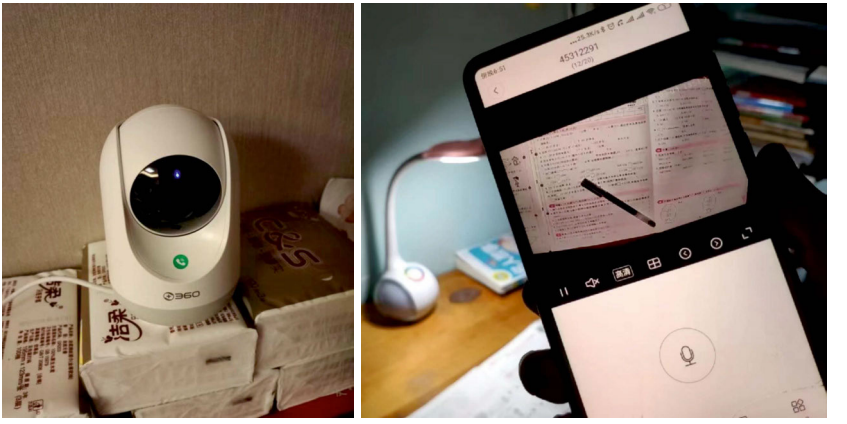
In this quote, the child's poor homework quality and the decreased score are attributed to the parents' negligence. The wording in the quote is emotional abusive. The teacher tries to make the parents feel guilty for the child's school regression and challenges their self-perception as responsible caregivers. By shaming one mother publicly in the chat group, the teacher also exerts pressure on the other parents. In so doing, the teacher gradually transforms all parents into her obedient and cooperative partners. Furthermore, the idea that responsible and caring parents should closely engage in their children's school education and be responsible for their exam scores is reinforced during the process, forcing the parents to sacrifice their leisure time after work for the children's homework.

When parents naturize such morality, they begin to actively assign extra homework to their children to fulfil their parental responsibility. The close supervision is often effective and increases the child's exam score. The more the children practice at home, the better they can do at solving specific types of questions in exams. As the children make progress under close supervision, the parents also acquire a sense of accomplishment and become proud of their contribution. When the supervision is too detailed and the extra work given to the children is too much, the children can also develop an aversion to studying and, in extreme cases, refuse to study at all. When their efforts fail to help the children progress in their studies, parents can become exhausted and anxious. They complain about why their children are so 'disobedient' (不乖 *bu guai*), on the one hand, and are worried about the harsh competition their children might face in the job market in the future when they do not attain a tertiary education degree, on the other. Although close supervision of homework may cause intergenerational conflicts, all the parents I interviewed decided to adopt close homework supervision anyway. They all believed they knew their children the balance point and would stop before pushing the child to the limit.

Migrant parents and process of distant supervision via smart cameras

While most non-migrant parents can sit beside their children at night and watch them write in person, migrant parents rely heavily, if not entirely, on monitoring technologies to supervise their children's study after school. Smart cameras are one of the most popular devices migrant parents use to supervise their children's homework and tutor them from afar.

Picture 1: A smart camera standing on piles of tissue paper on the study desk on the left, and a screenshot of the livestreaming on the mother's phone on the right (photos taken in 2021 and are provided by Mrs Zheng to the author)



Mr and Mrs Zheng are migrant professionals in Hangzhou. The husband is a wealth planner, and the wife runs a bakery. To supervise their left-behind 12-year-old son's study at night, the couple installed a smart camera above his study desk, which is compounded with an ultra-high-definition camera, AI figure track, 360-degree panoramic view, and a two-way online phone call. The monitoring camera is linked to an app on the parent's smartphone, so the parent could control the recording view of the camera, view the livestream as well as the recorded video, and talk to the child with the phone.

The son promised the mother that he would study after school from 18:30 to 22:00 every weekday. In the first two hours, he needs to finish school assignments. In the following half hour, he needs to report to the mother via the camera about what he has studied during the day. In the final hour, the mother would, firstly, go through the school assignments with the son, making sure he had finished all the tasks. Then the mother would accompany the son while he did extra maths assignments from an unpublished exercise book edited by a famous teacher in Hangzhou.

After he finished the extra work, the mother would show him the right answer. If the son could not understand the problem-solving process, he needed to ask the maths teacher the day after because the mother was unable to tutor him anymore as he moved to junior high school.

The time frame between 18:30 and 20:30 is a busy hour for bakeries in China, as many people buy cakes and bread as desserts to take home after work. Thus, during the first two hours, the mother usually relies on the AI report produced by the smart camera to monitor the child's homework writing process. Smart cameras nowadays are equipped with AI image processing technologies and can provide real-time analysis to the smartphone. The reports shows up as notice banners on the smartphone in short sentences that indicate the time point at which the son shows up in or leaves the room. When he comes and goes, the AI would also calculate how long he stayed or was absent. Accordingly, the mother could track the son's movements even without logging into the app and checking the livestreaming video on her own.

The time after involves higher levels of interpersonal communication as the number of customers reduces by 20:30 and the mother can finally take a rest after a long day of work. The mother and son go through school assignments together and discuss school life as if they were sitting in one room and sharing the moment face-to-face. The camera becomes an external eye and mouth for the mother, enabling her to see, communicate and interact with him across geographical distance. Although very tired, the mother insists on meeting with her son via the camera to check his homework.

In addition to the real-time mediated gathering via the camera, Mr and Mrs Zheng love to review their son's study videos during the day when they are not busy. The camera can upload the video to the cloud, where it will be stored for three days. The couple downloaded many of the son's studying videos locally on the phone and watch them again and again when they feel tired at work. Mrs Zheng once told me that "Everyone in the family works hard for a better life. Life is hard for everyone, but I am happy that my family is so united. I believe our days will get better and better." The mother felt relieved every time she watched her son study hard and the husband brings money back. Here, they also constitute a spatially dispersed parent-child striving team, a notion coined by sociologist Rachel Murphy (2020). Based on long-term field work in middle China, Murphy argues that the migrant parents and the left-behind children live their lives interdependently, and all contribute their hard work to the family goal of striving for a better life. The migrants' labour in the cities and the children's study in their hometowns are all real work that is underpinned by aspirations to bring about a better life for the family members. The idea of a striving team helps us to understand Mr and Mrs Zheng's relief when they saw their son's studying video. Studying hard is the son's way to contribute to the family's well-being and increase the family's social mobility. When the parents watch the son's study video, they also feel they are supported by the son, and the responsibility

to make the family better is shared by him. This experience of cooperation creates a sense of togetherness and strengthens the bonds between the family members without requiring them to be physically close.

The experience of family communication via monitoring camera from the perspective of the left-behind son is more complex and mixed. The son, for example, hates the camera, but, at the same time, he is so reliant on the camera to give him a sense of being kept in his parents' heart and being missed. The son compared himself with his friends, who were also left-behind children but had been forgotten by their migrant parents. He concluded that his parents installed cameras on his study table to supervise his studies, ensure he was doing the right thing at the right time, and be accountable to him. As this boy lives far away from his parents and craves their attention, being monitored gives him the feeling of being loved and cared for.

In addition, the camera is the only direct way he could contact the parents. He does not have a mobile phone, because his parents are afraid that he might be distracted from studying and waste time on games on the phone. Thus, he needs the camera to contact his parents on his own. Although the boy has thought of uninstalling the camera several times, he has never once implemented this plan up to the date I talked to him. At the end of our conversation, the boy defined his temptation to remove the camera as an immature and impetuous thought and said: "The monitor does help me with my studies. [Long pause] It gives my parents reassurance. I guess it's the only way for me to show my filial piety at my age."

Not every child I encounter in China thinks like this boy. There were also children who attempted to break the camera and those who tried to hide from the camera by stacking books like a wall and hiding behind the books. But what is the same among these children is their mixed perception of the parents' distant monitoring practice. No matter how obedient or rebellious the children behave, all of them share a mixed feeling in the monitoring relationship, on the one hand, feeling cared about and, on the other hand, feeling distrusted. Surveillance is intimately entangled with care and love in the situation of parental migration and children staying at home. Smart cameras extend the parents' authoritative watch across time and space and enable careful surveillance that is both loving and scary in the eyes of the children. I will investigate this complexity in the following section through concepts of 'forced' and 'uncertain co-presence'.

Forced co-presence rooted in an unequal parent-child power relationship

The children feel uncomfortable with the camera-facilitated distant homework supervision because they have lost control over their own presence. The use of smart

cameras generates what I call 'forced co-presence', which depicts an unequal power relationship between the migrant parents and their stay-at-home children.

The story of Zheng's family shows that the stay-at-home son is forced to livestream his study to the migrant parents every day. He does not like doing homework under his parents' supervision for two main reasons. On the one hand, he has lost autonomy over his own time under smart monitoring. He cannot, for example, stop studying at night without parental permission. When he could not stay focused on study, the boy could not go directly to the bed and lie down for a while. Instead, he needs to press the talking button on the camera and report his tiredness to his parents and ask for a rest. If he stopped studying without a report in advance, he would be scolded or nagged about it repeatedly as soon as the parents found out from the recorded video. In order to get moments of respite, the boy has now learnt to take a secret rest by staring blankly at the exercise book and pretending to encounter and think about a difficult question. Deception is the only means that enables him to take back control of his own time, but, in the meantime, it often makes him feel immoral. He felt guilty for lying to his parents and being irresponsible in his own study. This is how he comments on his little trick:

> My parents work hard outside to save money for my future education. I need to repay (报答baoda) them by studying hard. The hardship of studying is nothing compared to the hardship they go through in making money outside. I feel so angry why I can't learn all the time like the top students in my class. Believe it or not, I feel guilty regarding my parents when I pretend to study. I also know I do not study for my parents or for the teacher, I study for myself. So, it made me feel worse.

On the other hand, the boy felt distrusted by his parents during close homework supervision. At the time of the interview, the boy was thirteen years old and complained that his parents still supervised him like a preschool child. His development is constantly ignored by his parents and they often take away any credit for his study progress. He said hatefully:

> I can study well without their supervision. I can do it myself. I don't need their so-called help. I will finish the homework without their supervision, and I can ask the teachers about the questions I don't understand. Why can't they leave me alone and let me be responsible for my own study?

The boy's experience resonates with many other children who are similarly supervised closely by their parents, whether distantly or in person. The parents check the children's homework and make sure they finished it correctly and well every night because they do not trust their children. They despise their children's self-manage-

ment skills and ability to take the initiative in studying. As a result, these parents are always eager to become overly involved in their children's education.

Distant but close homework supervision in China is enabled by cheap and easily accessible smart cameras. A decade ago, migrant parents were technically unable to overparent their stay-at-home children across long distances. In the age of internet video calls and phone calls, children have the right to refuse the chat invitation at the beginning or hang up the phone when they no longer want to communicate. When the parents ask about their refusal, the children could make excuses about an unstable connection, being out of battery, and so on and so forth. In an earlier era of letter exchange, children could refuse more easily by writing shorter and less frequently to their parents. Nowadays, in cases of smart camera monitoring, the children do not have any excuse for refusing to be monitored. Firstly, the monitors are usually hung high on the wall or in the ceiling, making it impossible for small children to uninstall the camera. Even if they uninstall it, the grandparents who reside with them will reinstall it quickly on behalf of the parents. Secondly, the monitors work 24/7, and whenever the children enter the space of surveillance, their image is captured and transmitted immediately to the cloud. The children have no access to editing or deleting the videos. Of course, the children could break the monitor, but it would be at the expense of irritating the migrant parents, failing to complete certain types of homework and being chastised by teachers at school, as many pieces of homework should be completed in collaboration with the parents, as discussed in the preceding section. The emergence of smart monitoring signals a retreat in intergenerational equality, because parents are technically able to force their children to listen to their nagging and stay monitored at a low cost, such as in face-to-face situations.

Uncertain co-presence determined by data synchronization

The co-presence facilitated by smart cameras is as uncertain as Schrödinger's cat. The state of the co-presence is measured until the parents synchronize with the camera as they review the recorded video or read the message transmitted by the AI to their phone. Children cannot determine whether they are being watched or not by their parents when the former are doing homework. The camera-mediated co-presence exists in two states before the human-machine data synchronization, like the cat being both dead and alive before the box is opened in Schrödinger's famous thought experiment. By contrast, other forms of co-presence are more definite in generating a sense of togetherness. Physical co-presence, for example, is multi-sensational and can, thus, be clearly perceived by seeing, hearing or smelling. As for ambient co-presence in a polymedia environment (Madianou 2016), although the sense of togetherness is peripheral, individuals can perceive the presence of the distant other by seeing them put up new posts or noticing the little green dot

near their profile photo, which indicates that the friend is online. People would not question whether they shared the moment with other people on social media.

Compared with a definite experience of togetherness, the co-presence experience mediated by smart cameras is ambiguous for interactants. When the parents told the children they should be away for a while and come back later, the children could not determine whether they were still under their parents' watch as the camera continued to record, livestream and store the video. The camera functions as a loosely connected external eye and external brain for the parents. It is loosely connected because the linkage depends on the parents' intentional acts of data synchronization. In the case of distant homework supervision, it can either refer to the migrant parents reviewing the video on the cloud or reading the AI report on their phone later. Therefore, the migrant parents are both present and absent before they retrieve data from the camera. The interaction of watching and being watched, as well as the state of co-presence which took place at a prior time, are dependent on the act of parent-camera synchronization, which happens later. In this sense, it is very difficult for the children to perceive and experience co-presence with the parents at the exact moment of doing their homework under the camera.

This delayed certainty, which can be perplexing for the children being monitored, has significant negative emotional consequences for distant parent-child relationships, on the one hand, and lowers study productivity, on the other. According to interviews and informal conversations with the children, when they are unsure whether their parents are watching them, they become more anxious and less focused. They have wasted a lot of time guessing what their parents are doing, and are less able to concentrate on their homework. A nine-year-old girl shared her experience as follows:

> She [the migrant mother] sometimes leaves without noticing me when I am doing homework. She always tells me she doesn't reply to me when I talk to her on purpose. Because she wanted to see if I could concentrate on my work when she is absent. I don't know if she was telling a lie. She can always check the video afterwards and tell me she was there. She could watch the monitoring video and pretend to be with me. I cannot stop talking to her to get feedback from her. She complains that I talk too much while doing homework. But I just want to make sure she is there. She doesn't understand me. She just criticizes me.

In camera-mediated homework supervision, the migrant parents can see and hear what the children are doing from the livestreaming video, but the stay-at-home children cannot see the migrant parents. They need to confirm the presence of their parents by talking to and hearing from them. The quality and quantity of information exchanged between the monitor and the monitored are unequal. The parents are

so privileged that they often cannot understand the children's needs for confirming their co-presence. In this story, the mother takes the girl's attempt to seek confirmation of her presence as evidence of study wandering and criticizes the girl for not being focused on study. The girl feels wronged and misunderstood by her mother. Following the expression of grievance, the girl continued to share her complaints about her mother.

> Talking does distract me from my homework. I agree. But I feel more uncomfortable and more distracted if I fail to get her response. When I receive her response, I feel so relieved and assured, and can go back to study immediately. So, my talking is not problem. Her not replying makes me unconcentrated.

The girl's complaint reveals a strong sense of insecurity about the long-distance parent-child relationship. Homework time was the only moment she could share with her mother for the day. She needs a definite sense of the mother's presence to perceive and confirm the mother's love and care for her. She needs the mother's full attention and, thus, feels anxious when the mother does not reply to her. The longer she experiences silence, the more she suffers from anxiety.

The 'uncertain co-presence' also has consequences for children's understandings of the human-machine relationship. When I watched the monitoring video posts on Weibo, I found preschool children often mixed up their parents with the monitoring camera. In one video, when a little boy fell while going up the steps between the yard and the house, he looked up and cried to the monitoring camera at the entrance: "Daddy I fell, I'm in pain, Daddy, Daddy....." This video has been widely distributed on Weibo and has aroused a strong sense of compassion for the left-behind children. Children at a young age could not discern humans from machines as they have been used to talking to the camera. This little boy thought the monitoring camera was his father and could comfort him and help him up when he fell. The boy thought the father saw his fall from the camera and would react to him immediately; however, the father could only see the whole process when he reviewed the recorded video late at night after work. The camera is more than a proxy in Baldassar's theory of proxy-co-presence; it is tangible and incorporates the spirit of the absent father. The camera is also interactive and smart, giving the child the illusion that it is not only an object but a technical extension of the human father. The boy is disappointed and cries hard when the camera – in his understanding, it is his father – does not respond to him. In another story shared on Xiaohongshu, a mother reported that her three-year-old daughter was angry with her migrant father when the daughter offered a piece of apple to the monitoring camera but the camera did not take it. People found this episode 'so funny' because good comedy is tragic at its core. The story is so sad because the girl could not distinguish the father from the camera, as the father always appears in the form of a voice from the camera. In the eyes of the little girl,

the camera is the father, and the father is the camera. She expected the camera to interact with her and take her apple, as the mother always does in these situations. Such disappointment is increasingly commonly experienced by small stay-at-home children in contemporary China raised under monitoring cameras.

Conclusion

In this chapter, I have documented the use of smart cameras in distant homework supervision among translocal families in Eastern China. The ethnographic details show how education aspiration, parental responsibility and the school system interact to push the parents to be highly involved in their children's homework and study. In such a context, migrant parents should rely on technologies to recreate translocal spaces for homework supervision to fulfil their parental responsibilities and explore new ways of 'doing parent' at a distance.

However, the use of smart cameras deprived the stay-at-home children of the right to control their own presence and brought about what I call 'forced co-presence', which is deeply rooted in the unequal parent-child power relationship. Children have no other choice but to use lies to take back their time for rest under their parents' micromanagement. The moral uneasiness of deception decreases the mental wellbeing of children and undeniably harms their intimate relationships. Furthermore, the use of smart cameras creates uncertainty about the state of co-presence. Without knowing whether the parents retrieve the data from the camera afterwards, the children cannot confirm whether they have been carefully monitored by the parents from afar. The uncertainty generates the children's need for immediate confirmation of their parents' invisible presence during the homework writing. It distracts them from concentrating on their studies and lowers their study efficiency.

I argue that the use of smart cameras makes the stay-at-home children insecure and feel untrusted. While close homework supervision eases migrant parents' anxiety over their children's study performance, it might also weaken the parent-child relationship at a distance. Therefore, the distant homework supervision I studied in this chapter highlights the precarious balance between responsible parenting and overparenting. It also expands on the concept of co-presence and sheds light on the effects of technology on translocal and transnational family relationship formation in digital and mobile societies. As smart monitoring was widely used in child and elderly care in many societies around the world during and after the COVID-19 pandemic, the terms 'forced co-presence' and 'uncertain co-presence' help us to see that smart monitoring has ambiguous consequences for 'doing family' at a distance.

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