Smarter homes, smarter surveillance? Exploring intimate surveillance practices in modern day households

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Abstract

Smart home technologies (SHT) are becoming more and more widespread. The commodification of the household and the surveillance of family life by companies have understandably sparked numerous questions. It should not be forgotten, however, that SHT also bring family members convenient tools to surveil each other. Parental and partner surveillance, further referred to as intimate surveillance, have rarely been studied with regard to the smart home. This article empirically explores intimate surveillance behaviours, intentions and motivations by drawing on an online survey study (n = 715) with parents and partners. Overall, the results show that intimate surveillance takes place with SHT, that parental surveillance intentions are higher than partner surveillance intentions and that care is considered a relevant motivation for intimate surveillance. Furthermore, this study invites to be mindful of the specificities of surveillance practices, and encourages researchers to be explicit about their assumptions on the underlying motivations for intimate surveillance.

Keywords

Care, datafication of the home, household, intimate surveillance, monitoring, parental surveillance, partner surveillance, smart home technology

Introduction

The surveillance of citizens is omnipresent and part of everyday life. Lyon (2018) argues that surveillance has even become a 'way of life', considering citizens' own participation in surveillance practices besides the pervasive data economy. Scholars have increasingly focused on such surveillance practices, coining 'social surveillance' (Marwick, 2012) and 'interpersonal surveillance' (Trottier, 2012), and have also accounted for benevolent interpretations of surveillance. Specifically, the concept of 'intimate surveillance', defined as the 'purposeful and routinely well-intentioned surveillance of young people by parents, guardians, friends and so forth' (Leaver, 2015: 153) emphasizes the benevolent motivations that can drive surveillance.

Benevolent motivations of surveillance are often associated with care. Andrejevic and colleagues (2021) use the concept of 'careful surveillance' to show how governments and citizens 'looked out for' one another during the Covid-19 pandemic. In research on pregnancy and parenting apps, Lupton (2020) coins 'caring dataveillance' to elucidate how mothers' data collection on their children is integrated into their caregiving practices. These concepts acknowledge benevolent motivations, but they also take into account the larger context of surveillance capitalism in which intimate surveillance happens. Datafication commodifies even our most intimate relationships and corporations eagerly encourage the association of surveillance with care (Stark and Levy, 2018). Such processes normalize intimate surveillance (Barron, 2014; Simpson, 2014) to where intimate surveillance becomes a marker of culturally appropriate levels of care (Leaver, 2017).

Situating ourselves in the field of intimate surveillance and pointing out intimate surveillance's normalization, we find it urgent to turn our attention towards the home environment, and the pervasive emergence of smart home technology (SHT) (Balakrishnan et al., 2018; Pink et al., 2023). SHTs can be understood as the devices in the home—often home appliances—that include sensors that are able to detect and act on behaviour and other stimuli from the environment (Marikyan et al., 2019). As SHTs like Intelligent Personal Assistants (IPAs) gather data from the private sphere of the family home, SHTs contribute to the commodification of familial spaces (Mascheroni and Siibak, 2021) but also allow for new forms of interpersonal surveillance in families (Taylor and Rooney, 2017). Research on citizens' use or intention to use SHT to surveil members of their household, however, remains scarce. In this study, we fill this gap by exploring intimate surveillance behaviours, intentions and motivations through an online survey (n = 715) conducted with parents and partners. In the following sections, we examine parental surveillance and partner surveillance along with their respective literature.

Theoretical framework

Parental surveillance

Parental surveillance can be better understood taking into account the 'risk society'-thesis as described by Beck (1992) (e.g. Livingstone et al., 2017; Lupton et al., 2016; Tsaliki and Chronaki, 2020). Beck (1992) argues that late industrial societies evolve into 'risk societies', dedicated to managing ever-present risks and uncertainties stemming from modernization. In addition, Beck (1992) references 'individualization' in Western modern societies, highlighting individuals' increased autonomy, choice and responsibility against the decline of traditional social structures (e.g. religion, family). In the risk society, individuals shoulder the responsibility of managing risks once handled by institutions and thus making decisions about safety and well-being amid heightened uncertainty.

The individualization of risk finds a connection with the neoliberal notion of responsibilisation, which highlights that citizens are expected to take care of themselves, rather than rely on the state's provision of direct services (Cradock, 2004). Citizens' self-management equates with their risk

management and thus the development of a prudential subjectivity (Cradock, 2004). As children cannot exercise prudential subjectivity, parents' risk management extends to that of their children (Tsaliki and Chronaki, 2020). The promotion of parental monitoring technologies like, for example, tracking technologies, is one way in which responsibilisation is communicated and reinforced (Lupton et al., 2016; Simpson, 2014). In particular, such marketing discourses draw from parental anxieties over societal risks (e.g. traffic accidents, 'stranger danger', abductions) and represent children needing their parents' protection (Lupton et al., 2016; Stark and Levy, 2018). The association of parental surveillance with responsible care normalizes parental surveillance (Leaver, 2017).

To better understand parents' use of parental monitoring technologies, we build on the notion of 'materialities of care', which considers how mundane materialities from material (e.g. technologies) to immaterial (e.g. ambiance), relate to care practices (Buse et al., 2018). More specifically, building on Puig de la Bellacasa (2012), care is approached as a practice; a 'doing', which interacts with materialities. As such, we can derive several benevolent or 'caring' motivations behind the use of parental monitoring technologies. First, parents use parental monitoring technologies because they want to keep their children safe (e.g. Ghosh et al., 2018). Authors (e.g. Geržičaková et al., 2023; Hasinoff, 2017) have argued however that some monitoring technologies seem limited in their capacity to effectively ensure children's safety or that their use is negotiated or intentionally misused by children. However, parental monitoring technologies do offer parents peace of mind thinking that their children are safe (Widmer and Albrechtslund, 2021). Some children even seem to be aware of this effect. A study by Özkul (2022) with children between the ages of 8 and 11 years revealed that they cherished the peace of mind that their smartphones brought their parents, and subsequently considered their own locational privacy secondary to the reassurance it brought their parents. Furthermore, parental monitoring offers parents a convenient way to establish this peace of mind as it doesn't require a child to answer a phone call or send a text message (e.g. Balmford et al., 2020; Widmer and Albrechtslund, 2021). In some cases, parental monitoring is also appreciated by children themselves as it can help them feel safer and reduce their parents' explicit monitoring (e.g. Ghosh et al., 2018; Sukk and Siibak, 2021). Last, parental monitoring technologies like location-tracking can contribute to taking care of the household in an efficient manner. For example, some parents use location-tracking to prepare dinner depending on the estimated time that the tracked family member arrives home (Widmer and Albrechtslund, 2021). Building on this framework of care, children's protection, convenient peace of mind and efficient care of the household can be interpreted as motivations for parental surveillance.

Partner surveillance

Partner surveillance looks into the use of technology to monitor a partner's activities. It is often associated or even equated with cyber dating abuse (Zweig et al., 2014), electronic partner surveillance (Schokkenbroek et al., 2022a), digital dating abuse (Brown and Hegarty, 2018) and intimate partner cyberstalking (March et al., 2022). More specifically, electronic devices and social media are used to monitor, track and control a partner's activities, such as their online profile and presence, their location and their communication with others (Rodríguez-deArriba et al., 2021).

Whereas parental surveillance is often approached as a rather accepted practice in modern day parenting (Lupton et al., 2016), the practice of partner surveillance is generally not studied through such a lens. Rather, previous research almost exclusively conceptualizes partner surveillance as a form of intimate partner violence (Messing et al., 2020). This is not surprising, as multiple studies have found a link between partner surveillance practices and in-person forms of physical and psychological partner violence (Schokkenbroek et al., 2022b). The classification of partner surveillance as a malicious practice is further justified by research findings linking it to jealousy (Litt and Rodriguez, 2022), distrust (TopluDemirtaş et al., 2022a) and dark personality traits such as narcissism and psychopathy (Branson

and March, 2021). Furthermore, surveilling one's partner has been linked to a range of harmful intrapersonal factors and mental health issues in the surveilled partner, such as low self-esteem (Hancock et al., 2017), feelings of anxiety (Schokkenbroek et al., 2022a) and depressive symptoms (Toplu-Demirtaş et al., 2022b).

The above findings show that partner surveillance can have a detrimental impact on the partner and the relationship. However, approaches that solely portray partner surveillance as harmful might overlook the potential for benevolent motivations. Similar to parental surveillance, care is not an unconceivable motivation for partner surveillance. More specifically, the risk society thesis (Beck, 1992) allows to contextualize how the perception of ever-present risks, might instil worries that pertain to partners. As such, aiming to protect a partner and craving convenient peace of mind can possibly motivate partner surveillance. Furthermore, the use of technology to take care of the household (e.g. Widmer & Albrechtslund) might apply to anyone who makes up the household, including partners.

Few studies have considered benevolent motivations for partner surveillance. Research by Lucero et al. (2014) shows that several teenagers in a dating relationship indicated that the practice of password sharing and the subsequent monitoring of partners' online activities can also be a sign of care and trust. More recently, Flach and Deslandes (2019) investigated phone apps to monitor intimate partners' behaviour and found several cases in which surveillance was considered 'proof of love' and an expression of care and protection. It is important to note that in both these studies, the researchers interpreted the finding that respondents considered surveillance an expression of care and protection as post hoc justifications for surveillance behaviours, instead of ad hoc motivations. Levy (2015) generated an overview of mobile applications and devices that couples (can) use for intimate surveillance. Most of the discussed applications are used for practical and couple-oriented functionalities (e.g. wearable sex trackers, fertility and pregnancy trackers), and only few concerned malicious uses for partner surveillance. While these applications and functionalities indeed imply that partner surveillance entails much more than the previously discussed ill-intended practices, empirical evidence on the motivations and use of these applications is lacking. This is even more the case for newer technologies that have entered people's daily life and relationships, including SHT.

The present study

Most research on intimate surveillance focuses on monitoring applications (e.g. Balmford et al., 2020; Flach and Deslandes, 2019), social media (e.g. Lucero et al., 2014) and tracking technologies (e.g. Widmer and Albrechtslund, 2021). However, the home environment is increasingly equipped with sensors, cameras and other data-driven technologies that allow for intimate surveillance (Stark and Levy, 2018). Despite the growing literature on intimate surveillance, only a limited number of studies have investigated the use of SHT in families (e.g. Beneteau et al., 2020) and seem to remain limited to the usage of IPAs (e.g. Amazon's Alexa and Google Assistant).

This study aims to contribute to a systematic understanding of intimate surveillance with SHT. To this end, we focus on current surveillance behaviours with SHT, the motivations to engage in these acts, and the intention to use SHT for intimate surveillance in the future. Within this study we ask three research questions:

Research Question 1. How does intimate surveillance behaviour currently take place with SHT?

Research Question 2. What is the intention to perform intimate surveillance behaviour with SHT?

Research Question 3. How and to what extent is care an important motivation for intimate surveillance?

Rather than putting forward pre-defined hypotheses we explore various intimate surveillance behaviours and intentions, and compare them within and between populations (=parents and partners). This exploratory approach maintains an open view to find why and how SHT and other means are used or might be used for intimate surveillance in the household. This study complements the present shift in social sciences from an emphasis on causal research towards the encouraged production of descriptive knowledge (Munger et al., 2021).

Because of the study's explorative approach, we consider various factors. First, by studying both parental and partner surveillance as forms of intimate surveillance within the household, we take different family roles (parent and partner) into account. Second, while focusing on SHT, we still include other more established means that allow for surveillance within the household to put surveillance by SHT in a broader context. Specifically, we created two SHT categories ('smart camera', 'smart speaker') and a third for more established means ('other'). First, the smart camera category includes a smart (security) camera that can be placed inside or outside the home and a smart doorbell which offers (live) video footage of who rings the doorbell. Some (security) cameras and doorbells allow the owner to communicate from a distance with those who are in or around the house. However, it is their video function that is mainly of interest in this study and places them within this first category. Second, we focus on speech technology and assistance by including the smart speaker or IPA into our research. This device executes orders that are transmitted by speech (for example to turn off the smart lighting). Third, the 'other' category includes the use of software to limit time or content spent online, the use of tracking technology, visiting a family member's social media accounts and physically handling a family member's phone.

Method

Sample and procedure

Data were collected through an online survey conducted in the fall of 2022 among a population of adults living in Flanders, Belgium. Flanders is a very highly developed Western region (Conceição, 2022) in which 98% of the population has access to an Internet connection (De Marez et al., 2024). We recruited respondents through a professional agency using a quota sampling method. Inclusion criteria were language proficiency and age majority (18+ years). The ownership of smart home devices was no prerequisite to participate, given that we wanted both an understanding of current SHT use and intended use within families who did not currently own SHT. The study was approved by the Political and Social Sciences Ethics Committee at Ghent University.

In total, we received answers from 1736 respondents. After cleaning the data (considering only complete surveys with a correct answer on the control variable and a credible completion timeframe) we landed on a sample of 915 respondents. There were no particularities among the deletes. As the present study specifically focuses on intimate surveillance, we drew a subsample of 715 adult respondents, who had either a partner and/or child(ren) between the ages of 0 and 25 years. By applying this age threshold, we assumed that most of these children were still members of their parents' household. Within our sample, there were 322 parents and 683 respondents with a partner. Most respondents who

Table 1. Adoption of technology within the household of all respondents, parents, and partners.

Category of technology	Total sample (n = 715)	Parents (n = 322)	Partners (n = 683)
Smart camera	163	90	159
Smart speaker	145	79	139
Other	715	322	683

had children also had a partner, only 32 parents were single. We understand 'parent' as a child's guardian and the term is therefore not limited to biological parents. Among our respondents, 40.98% identified as man and 59.02% as woman. Our respondents were between 18 and 86 years old (M = 46.19, SD = 16.67). Most parents in our sample had 2 children (M = 1.85, SD = .77).

Table 1 describes the adoption of technology within the households of the total sample of respondents, as well as the subsamples of parents and partners. Given that the acts within the category of other means are accessible to almost anyone in the sense that they don't require specific devices, we included all respondents in this category.

The technology adoption in our sample is consistent with the broader population as data from a representative sample of the Flemish population show that 16% of Flemings own a smart speaker and 14% own a smart doorbell (De Marez et al., 2024).

Measures

Overall, it is important to mention that the questions on surveillance behaviour and intention used the exact same items to measure parental and partner surveillance. Only the word 'child' was replaced with 'partner' in the items to facilitate comparison. Respondents first answered all questions on parental surveillance and then partner surveillance. The survey was pretested.

Surveillance behaviour. Surveillance behaviours were measured by asking respondents to indicate for 11 surveillance behaviours how often they used the discussed technologies in the described way. Respondents were only presented with questions on technologies that they owned. Answers were given on a 7-point frequency scale ranging from 0 = 'never' to 6 = 'multiple times a day'. An example of an item is 'I use a camera to see what my [child/partner] does'.

Surveillance intention. Surveillance intentions were measured as the likelihood of using the discussed technology for intimate surveillance in 11 situations. Respondents were asked to imagine they owned all discussed technologies. Respondents indicated their intimate surveillance intentions on a five-point Likert-type scale ranging from 1 = 'very unlikely' to 5 = 'very likely'. Specifically, we asked parents to indicate their intention to use certain technologies to monitor their child, and partners to indicate their intention to monitor their partner. Here, we transformed the aforementioned 11 behaviour items into intention items: e.g. 'I would use a camera to see what my [child/partner] does'.

Surveillance motivations. Motivations were measured by presenting a number of motivations and asking respondents to indicate for each of these motivations whether or not it played an important role in their decision to engage in intimate surveillance. Only respondents who indicated that they had ever performed any of the surveillance behaviours were presented with this question. Answers were given on a 5-point Likert-type scale ranging from 1 = 'not important at all' to 5 = 'very important'. For both parental and partner surveillance, eight motivations were presented. While most motivations were

phrased in the exact same way for both types of surveillance, two motivations for parental surveillance were not applicable to partner surveillance and vice versa. Specifically, the motivations 'I think my child does bad or naughty things' and 'I consider my child too young or inexperienced to not control them' were unique to parental surveillance, whereas the motivations 'I think my partner is doing wrong things' and 'I don't trust my partner enough to not control them' were unique to partner surveillance.

Statistical analyses

The statistical analyses were conducted in IBM SPSS Statistics (Version 28). For all analyses, statistical significance was determined at $p \leqslant .05$. To present our data on surveillance behaviours, we determined prevalence rates by creating dichotomous variables with the labels 0 = 'never' and 1 = 'at least once'. To compare parental with partner surveillance behaviour, we conducted percentage tests. We consider our single-item Likerttype scales measuring surveillance intention and motivations as interval data, following the suggestions of Carifio and Perla (2008) and Bishop and Herron (2015). Our Likerttype scales have equal distance between the answering options and balance around 'neither not agree, nor agree' in the scale on surveillance intention and 'neither not important, nor important' in the scale on surveillance motivations. Furthermore, all elements have consistent answering options. As we approach surveillance intentions and motivations as interval data, we calculated mean scores and standard deviations. To study surveillance intentions, we compared all intentions via a paired samples t-test. We did this both for parental and partner surveillance. We then compared both groups by merging parental and partner surveillance intentions into 11 new intention variables to conduct 11 independent samples t-tests. To study surveillance motivations, we conducted a paired samples t-test pairing all motivations with each other, and we did an exploratory factor analysis (EFA). We did this both for parental and partner surveillance. To compare both groups, we again merged parental and partner surveillance motivations into new variables and conducted an independent samples t-test for each motivation.

Results

Intimate surveillance behaviour

The percentage scores for parental and partner surveillance behaviours can be found in Table 2 and represent the group of people who have executed the behaviour at least once.

Our data show that both parental and partner surveillance occur with a smart camera, smart speaker and other means. The adoption rates of the smart camera and speaker are

Table 2. Prevalence of parental and partner surveillance behaviours.

	Parents %[a]	Partners %[a]	Percentage Test		
			Df	t-value	Δ
SMART CAMERA	*n* = 90	*n* = 159			
Use a camera to watch what my child/ partner does	52.2%	26.4%	247	4.08	.26***
Use a camera or doorbell to see who my child/ partner spends time with	27.8%	20.1%	247	1.22	.07
Use a camera to see whether my child/ partner is at home	43.3%	25.2%	247	2.95	.18**
Use a doorbell to see what time my child/ partner comes home	31.1%	20.1%	247	1.95	.11*
SMART SPEAKER	*n* = 79	*n* = 139			
Listen to what my child/ partner asks the smart speaker	24.1%	13.7%	216	1.94	.10*
Limit what my child/ partner can ask the smart speaker	22.8%	14.4%	216	2.15	.12*
OTHER	*n* = 322	*n* = 683			
Use a tracking app or software to see where my child/ partner is	26.1%	14.3%	1003	4.54	.12***
Use software to see what my child/ partner sees or does online	24.5%	8.6%	1003	6.84	.16***
Use software to limit what my child/ partner can see or do online	27.6%	7.5%	1003	8.58	.20***
Look in my child's/ partner's phone without their permission	21.1%	17.9%	1003	1.21	.03
Keep an eye on my child's/ partner's social media channels	37.0%	14.9%	1003	7.89	.22***

Note. [a] represents the percentage of people that has at least once engaged in the behaviour. *n* represents the number of respondents that own the particular technology. *p < .05, **p < .01, ***p < .001.

too small to accurately compare the different behaviours. Therefore, we measured all parents' and partners' intentions to perform these exact behaviours, the results of which are discussed in the following section. However, we did compare each behaviour for parental and partner surveillance with a percentage test. Our results show that for most behaviours, parental surveillance is more common than partner surveillance, except for the use of a camera to see who the other spends time with and watching the other's phone without their permission.

Intimate surveillance intention

The average parental and partner surveillance intention scores can be found in Table 3. Our interpretations are based on the mean scores and significant differences between the items (paired samples t-test).

Table 3. Parental and partner surveillance intentions.

	Parents (n = 322)		Partners (n = 683)		Independent Samples T-test		
	Mean	SD	Mean	SD	Df	t-value	Δ
SMART CAMERA							
Use a camera to watch what my child/ partner does	3.22	1.18	1.96	1.05	1003	17.12	1.26***
Use a camera or doorbell to see who my child/ partner spends time with	3.08	1.16	1.81	1.06	1003	17.24	1.27***
Use a camera to see whether my child/ partner is at home	3.27	1.16	2.04	1.18	1003	15.58	1.23***
Use a doorbell to see what time my child/ partner comes home	2.94	1.20	1.80	1.02	546.97	14.80	1.14***
SMART SPEAKER							
Listen to what my child/ partner asks the smart speaker	2.73	1.14	1.65	0.93	530.40	14.93	1.09***
Limit what my child/ partner can ask the smart speaker	3.01	1.16	1.53	0.86	492.63	20.47	1.48***
OTHER							
Use a tracking app or software to see where my child/ partner is	3.19	1.16	1.99	1.10	1003	15.86	1.20***
Use software to see what my child/ partner sees or does online	3.11	1.13	1.73	0.96	547.02	18.97	1.38***
Use software to limit what my child/ partner can see or do online	3.31	1.16	1.56	0.92	520.42	23.88	1.75***
Look in my child's/ partner's phone without their permission	2.37	1.11	1.66	0.99	570.28	9.74	.71***
Keep an eye on my child's/ partner's social media channels	3.08	1.19	1.65	0.96	525.04	18.82	1.43***

Note. ***p < .001.

Parental surveillance intention. Over all technological categories, the results of the paired samples t-tests show that parents' intention to check their child's phone without their permission was the lowest. The second lowest intention was listening to their child's commands to the smart speaker. Within the smart camera category, our results show that parents' intention to use a smart camera to check what their child is doing (M = 3.22, SD = 1.18) is significantly higher (t = 4.630, df = 321, p < .001) than their intention to check the exact time that their child arrives home (M = 2.94, SD = 1.20). Similarly, parents' intention to use a smart camera to check whether their child is at home (M = 3.27, SD = 1.16) is significantly higher (t = 6.201, df = 321, p < .001) than their intention to check the exact time that their child arrives home (M = 2.94, SD = 1.20). Last, parents' intention to use a smart camera to check whether their child is at home (M = 3.27, SD = 1.16) is significantly higher (t = 3.893, df = 321, p < .001) than their intention to check who their child spends time with (M = 3.08, SD = 1.16). Within the category of the smart speaker, our results show that parents' intention to limit their child's interactions with the smart speaker (M = 3.01, SD = 1.16) is significantly higher (t = 5.147, df = 321, p < .001) than their intention to listen to their child's commands (M = 2.73, SD = 1.14). Similarly, within the category

of other means, parents' intention to use software to limit their child's online activities (M = 3.31, SD = 1.16) is significantly higher (t = 3.824, df = 321, p < .001) than their intention to use software to look at those activities (M = 3.11, SD = 1.13).

Partner surveillance intention. In general, the intention to monitor a partner is low. Almost all means are below 2 on a five-point Likert-type scale, indicating that partners are rather unlikely to engage in surveillance practices. Similar to parental surveillance, there is a significant difference between limiting and checking a partner's activities, but partners would rather check on their partner's activities than limit their partner's interactions with the technology. This difference applies both to the use of software and the smart speaker. Partners' intention to use software to check what their partner does online (M = 1.73, SD = 0.96) is significantly higher (t = 5.990, df = 682, p < .001) than their intention to limit this (M = 1.56, SD = 0.92). Similarly, partners' intention to use the smart speaker to listen to their partner's commands (M = 1.65, SD = 0.93) is significantly higher (t = 4.958, df = 682, p < .001) than their intention to limit their partner's interactions (M = 1.53, SD = 0.86). Furthermore, our results show that partners' intention to use a smart camera to check what their partner is doing (M = 1.96, SD = 1.05) is significantly higher than their intention to check with whom they spend time (M = 1.81, SD = 1.06), (t = 5.394, df = 682, p < .001) or to check the exact time that they arrive home (M = 1.80, SD = 1.02), (t = 5.299, df = 682, p < .001). In line with this, partners' intention to use a smart camera to check whether their partner is at home (M = 2.04, SD = 1.18) is significantly higher than their intention to check with whom their partner spends time (M = 1.81, SD = 1.06), (t = 7.244, df = 682, p < .001) or the exact time that they arrive home (M = 1.80, SD = 1.02), (t = 7.392, df = 682, p < .001).

Comparison parental and partner surveillance intention. We performed an independent samples t-test to compare each corresponding item for parental and partner surveillance intentions. Our results show that for all items, parental surveillance intentions are significantly higher (ranging from a difference of .71 to 1.75 on a 5-point Likert-type scale, all on a p < .001 significance level) than partner surveillance intentions.

Contextualization (c)overt surveillance

To contextualize our results on surveillance intentions, we additionally investigated respondents' preferences for overt versus covert surveillance practices. While more extensive analyses on the (c)overt context of intimate surveillance (intentions) go beyond the scope of this study, we believe that the small amount of context we can present here provides pertinent insights. Results can be found in the Supplemental Appendix. Our results show that only a strict minority, namely 9.32% of parents and 7.91% of partners, want their surveillance to remain covert. The majority of partners (62.37%) indicated

Table 4. Motivations for parental surveillance.

Items	Total[a]		Rotated Component Matrix	
	Mean	SD	Factor 1	Factor 2
As a parent, I want oversight/ control over what my child does	3.72	0.89	.796	
I want to protect my child against others with bad intentions	4.13	0.88	.769	
I consider this part of contemporary parenthood	3.62	0.91	.741	
I consider my child too young or inexperienced to not control them	3.36	1.13	.662	.304
I don't always feel secure as a parent	2.81	1.17		.719
I think my child does bad or naughty things	2.55	1.13		.705
I want to manage my household efficiently	3.26	1.11		.617
I am curious	2.84	1.13		.616
Eigen value			2.698	1.468
% of variance			33.73	18.35

Note. [a] represents the total number of parents who engaged in parental surveillance behaviours.

that they would discuss their surveillant technology use with their partner. 43.17% of parents would have this discussion with their child and 34.47% of parents would simply inform their child of their surveillant technology use.

Intimate surveillance motivations

Parental surveillance motivations. Parents who reported that they had engaged in parental surveillance were asked to indicate their motivations to monitor their child (see Table 4).

To study which motivations are particularly important, we conducted paired samples t-tests. Our results show that wanting to protect their child against others with bad intentions was the most important motivation for parents to engage in parental surveillance. Furthermore, 'wanting oversight or control over their children's activities' and 'considering parental surveillance part of contemporary parenthood' were also important motivations for parental surveillance. To explore an underlying structure in the motivations, we conducted an EFA based on eigenvalue greater than 1. Our rotated component matrix reveals two components. Our first component is 'responsible parenthood'. In classifying this component, we build on the neoliberal notion of responsibilisation (Cradock, 2004; Leaver, 2017; Tsaliki and Chronaki, 2020). Both aiming to protect children against others with bad intentions and considering oversight/ control over children's activities as part of parental duties, link to parental expectations of risk management. Moreover, considering parental surveillance as contemporary parenthood alludes to its normalization. The second component reflects 'negative traits' of the parent or child. While the efficient organization of the household could be interpreted as an extension of neoliberal parental

Table 5. Motivations for partner surveillance.

Items	Total[a]		Rotated Component Matrix	
	Mean	SD	Factor 1	Factor 2
I think my partner is doing wrong things	2.20	1.17	.864	
I don't trust my partner enough to not control them	2.13	1.20	.837	
I don't always feel secure as a partner	2.71	1.27	.777	
As a partner, I want oversight/control over what my partner does	2.44	1.19	.680	.468
I am curious	3.25	1.14	.392	
I want to manage my household efficiently	3.19	1.16		.805
I consider this part of a contemporary relationship	2.73	1.11		.764
I want to protect my partner against others with bad intentions	2.65	1.30		.627
Eigen value			3.497	1.278
% of variance			43.71	15.97

Note. [a] represents the total number of partners who engaged in partner surveillance behaviours.

expectations, it does load on the second component and not the first. As such, care for the household might remain in the practical realm, rather than constituting responsible parthood.

Partner surveillance motivations. Similar to parental surveillance, we asked partners who reported that they had engaged in partner surveillance to indicate their motivations (see Table 5).

The results of our paired samples t-tests show that overall, most partners conducted partner surveillance out of curiosity and to efficiently manage the household. Motivations related to distrust in one's partner or beliefs that the partner is doing bad things were reported as least important. The results of our rotated component matrix show that the motivations for partner surveillance adhere to two components. The first component comprises ideas of distrust and insecurity and the second component reflects 'caring intentions'. We notice that both 'curiosity' and 'wanting oversight/ control over a partner's activities' cannot clearly connect with either component.

Comparison parental and partner surveillance motivations. We conducted independent sample t-tests for six of the eight motivations that were phrased in the exact same way for both types of surveillance. Our results show that the motivations of contemporary parenthood ($M = 3.62$, $SD = 0.91$) or relationship ($M = 2.73$, $SD = 1.11$), ($t = 8.922$, $df = 411$, $p < .001$), wanting oversight or control ($M = 3.72$, $SD = 0.89$), ($M = 2.44$, $SD = 1.19$), ($t = 12.492$, $df = 411$, $p < .001$) and protecting the other ($M = 4.13$, $SD = 0.88$), ($M = 2.65$, $SD = 1.30$), ($t = 13.785$, $df = 403$, $p < .001$) are significantly more important motivations for parental than partner surveillance. Curiosity, however, was significantly more important for partner surveillance ($M = 3.25$, $SD = 1.14$) than parental surveillance ($M = 2.84$, $SD = 1.13$), ($t = 3.645$, $df = 412$, $p < .001$).

Discussion

Findings

Given today's popularity and availability of SHT, this study's main aim was to investigate surveillance behaviours, intentions and motivations in modern day households. This study is innovative in its systematic exploration of surveillance practices, studying both parental and partner surveillance as facets of surveillance within the family, as well as by investigating the use of SHT for surveillance among other means. The extension of surveillance by SHT is innovative in both the field of parental and partner surveillance.

Our results show that SHT is a relevant extension of intimate surveillance as both the smart camera and smart speaker have been used for practices of parental and partner surveillance. With the exception of two practices, parental surveillance was more common than partner surveillance. Similarly, parental surveillance intentions were significantly higher than partner surveillance intentions. Furthermore, our results indicate that both for parental and partner surveillance people feel more inclined to engage in intimate surveillance practices that are framed in a more general way (e.g. checking if the other is at home), rather than acts that disclose more specific information (e.g. the exact time that the other arrives home).

Parental and partner surveillance intentions are specifically different in their preference to 'limiting' or 'checking' activities. Parents in our sample seem to prefer to limit their child's interactions with certain technologies rather than check on their use. The literature on parental mediation of children's Internet use can contextualize these results. Limiting a child's online activities can be understood as 'technical controls' as studied by Livingstone et al. (2017) and is a known parental mediation strategy aiming to reduce online risks. Furthermore, research by Malkin et al. (2019) on the smart speaker shows that users feel less comfortable with the storage of their children's voices. This concern is further contextualized by media attention on accidental recordings (Malkin et al., 2019). Therefore, in both cases, it seems that parents want to limit 'risks', which connects to our most important parental surveillance motivation of 'child protection'. The preference for limiting over checking can further be explained by the finding that the parents in our sample prefer to openly disclose their surveillance behaviour to their children before engaging in them, making them less inclined to engage in covert monitoring. Our items on checking could possibly be interpreted as covert monitoring. This also helps explain why parents were the least likely to watch their child's phone without their permission. Conversely, when it concerns partner surveillance, partners would rather check on their partners' activities than limit those. Here, limitations can be interpreted as an extreme restriction of a partners' autonomy. Notably, these findings reveal that partner surveillance is more likely to happen during or post-'action' rather than it being preemptive. 'Curiosity' and 'the efficient management of the household' being the most important motivations for partner surveillance can offer an explanation for this.

Building on the existing literature on intimate surveillance, we explored benevolent motivations for surveillance. Our research shows that 'responsible parenthood' is an important overall motivation for parental surveillance, which attests to parental surveillance's normalization (e.g. Leaver, 2017). This motivation's approach to care seems to focus on the protection of children and its logic does not extend to care for the household. Our research shows that motivations for partner surveillance that reflect rather negative traits like distrust or insecurity were considered less important, allowing us to nuance the prevailing focus on malicious intent in the field of partner surveillance (e.g. Messing et al., 2020). Especially the importance of 'the efficient management of the household' as a motivation to engage in partner surveillance is remarkable. Given its link to other caring motivations, our results support the rationale for studying partner surveillance as a facet of intimate surveillance.

Last, the benevolent motivations reveal a contradiction in intimate surveillance that recalls Beck's (1992) argument that the risk society's occupation with risk management often generates new risks. While intimate surveillance is particularly driven by benevolent motivations, the practice may generate additional 'risks', such as privacy and welfare concerns for the surveilled (e.g. Schokkenbroek et al., 2022a; Simpson, 2014), as well as pressure on the surveiller, especially parents, as it may strengthen the expectation to keep an eye out (Lim, 2018).

Limitations

We want to outline some limitations. The cross-sectional survey design restricts and affects our data in several ways. As the data were collected through self-report measures, they are susceptible to social desirability and recall biases. In addition, the cross-sectional study design does not allow for causal inferences. As such, it is not possible to determine whether the provided surveillance motivations were in fact driving factors of the behaviour, or rather justifications after the fact (e.g. Lucero et al., 2014). Furthermore, we only collected information about the experiences of the individual doing the monitoring, and not the individual being monitored. As such, we do not have additional insights into if and how a child or partner is affected by their parent's or partner's surveillance behaviours, or if the surveillance perhaps occurs bidirectionally. This could prove particularly relevant as studies on children's understanding of privacy (e.g. Milkaite et al., 2021; Özkul, 2022) have covered them understanding their parents' desire for information on them, and advocate for more child-centric research on this subject. Furthermore, as bidirectionality is often identified in research on harmful behaviours between partners (e.g. LanghinrichsenRohling et al., 2012), its inclusion in this research could have been enlightening.

Implications

First, this study paints a nuanced picture of intimate surveillance as it reveals significant differences between specific surveillance practices (e.g. the intention to check whether the other is at home is significantly higher than to check the exact time that the other arrives home). Consequently, it is important to account for and further research the specificities of surveillance practices. Therefore, while this study neatly uses intimate surveillance as an umbrella term, we should be cautious not to approach it as a monolithic concept. Second, this study highlights different benevolent motivations for intimate surveillance. This is particularly enlightening in the field of partner surveillance and contributes nuance to the prevailing discourse that partner surveillance occurs out of malicious intent.

Recommendations

First, the substantial number of respondents that indicates the intention to engage in intimate surveillance and has already engaged in it, highly encourages further research, especially as the popularity of smart homes is growing (Balakrishnan et al., 2018). The importance of benevolent motivations in no way discourages research on the implications of surveillance or the experiences of the surveilled. On the contrary, we find it crucial to include the surveilled into the research, especially since children's agency is often overlooked in the literature on parental surveillance (Cino et al., 2020). Second, following our descriptive and comparative approach, we encourage further explanatory research on intimate surveillance behaviours. In addition, this study's exploration of intimate surveillance motivations provides a point of departure for the further development of motivation scales. Furthermore, we find it important to study the extent to which intimate surveillance is considered an important variable to explain 'good parenting' and 'good partnership'. Therefore, longitudinal research can help study whether intimate surveillance is considered essential to being a good parent or partner. Last, we are mindful that the inclusion of 'caring motivations' into our research has shaped our understanding of intimate surveillance. We argue that the interpretation of intimate surveillance cannot

be separated from the motivations. Rather, the motivations define the entire framework. Therefore, we encourage researchers to be transparent and explicit about the assumptions that they have on the underlying motivations in their studies on intimate surveillance.

Surveillance has entered family life and provides challenges to the various relationships within families. We find it crucial to study this with an open mind and refrain from dystopian or deterministic perspectives. This exploratory research has shown that care constitutes a meaningful factor in the study of intimate surveillance. If we truly want to build a better understanding of intimate surveillance in the smart home, it is important to (1) be mindful of the exact specificities that make up an intimate surveillance situation, (2) conduct more exploratory and explanatory research on the topic, as well as child-centric and longitudinal research, and (3) include motivations of care.

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Supplemental material

See appendix attached.

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Supplemental Appendix

Table 1. Prevalence of overt and covert parental and partner surveillance preferences.

Items	Parents % (n = 322)	Partners % (n = 683)
I would not want my child / partner to know that I would use the technology in this way	9.32%	7.91%
My child / partner can suspect or know that I use the technology in this way, but I would not have a conversation about it	13.04%	9.22%
I would tell my child / partner in what way I would use the technology	34.47%	20.50%
Together with my child / partner, I would discuss in what way I would use the technology	43.17%	62.37%
Total	100%	100%