A presença de *smartphones* no lar: tecnoferência entre pais e filhos no Brasil

The presence of smartphones in households: parent-child technoference in Brazil[i]

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Resumo
A tecnoferência refere-se à interferência da tecnologia (especialmente *smartphones*) nas interações das pessoas com outras. Este estudo faz uma análise desse fenômeno tentando compreender de que forma o uso do *smartphone* atravessa as interações dos pais com seus filhos. Entrevistamos 30 responsáveis sobre o uso da tecnologia em casa e as perspectivas de seus filhos sobre ela. Os participantes expressaram considerável culpa em relação ao uso da tecnologia com base nas informações que receberam de seus filhos. Pesquisas futuras podem se concentrar em entrevistar crianças para obter uma descrição mais aprofundada de seus pontos de vista.
Palavras-chave: Tecnoferência; *smartphones*; interação pais-filhos.

Abstract
Technoference refers to the interference of technology (especially smartphones) in people's interactions with others. This study draws an analysis of this phenomenon trying to understand how smartphone use affects interactions between parents and their children. We interviewed 30 parents about their use of technology and their children's perspectives on it. Parents expressed considerable guilt regarding their use of technology based on the input they received from their children. Future research should focus on interviewing children to obtain a more in-depth description of their points of view.
Keywords: technoference; smartphones; parent-child interaction.

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Introduction

The presence of smart cell phones (smartphones) in the family context has been on the agenda of the media, conversation circles, and academia for a considerable time. As a source of entertainment and communication, smartphones are increasingly occupying a large part of their users' routines. Furthermore, as more applications and functionalities continue being added to smartphones, they are becoming increasingly essential to the fulfillment of users' daily needs. However, interactions with smartphones have been associated with addiction (Karadağ et al., 2015), depression and isolation (Ante-Contreras, 2016; McDaniel et al, 2024a; McDaniel et al., 2024b), and family conflicts (Carrasco Rivas et al., 2017).

The COVID-19 pandemic that swept the world in 2020 affected smartphone use mainly by increasing the time spent on them, as people were confined to their homes and forced to communicate through technology. With schools closed, parents had to give support to their children's studies by monitoring online classes conducted by teachers while still attending to their own obligations and responsibilities. All these changes brought a challenge where caregivers needed to organize time and space of the new family routine. This research was developed in an atypical context where there was an increase in smartphone use among children and adults. It is necessary to consider that the confinement and the pandemic impacted the research, leaving traces, as participants apparently felt the need to talk about their anxieties and concerns about the presence of technology in the family relationship.

This article presents the results of a research project that focused on children's views of parental use of smartphones during the pandemic period.

Smartphones are a part of family life, entertaining and fulfilling the needs of both children and adults at different times of the day. However, adults' use of smartphones is intertwined with other issues, which helps us understand why fathers, mothers, grandparents, or young people use touchscreen technology so intensely. Well-known smartphones are designed to provide agility and efficiency in performing various tasks. An increasing number of companies are studying and investing in technology to launch smartphones with diverse prices, models, and designs for a wider consumer base: from the youngest to the oldest, from the most demanding to the least demanding. Thus, these objects are increasingly being adapted to the daily lives of different family profiles (Bhattacharjee, 2019).

Many applications have been designed to ensure time optimization and data security, such as paying bills with a simple touch. Given this, researchers such as McDaniel (2013) are concerned about the amount of time adults spend on their smartphones and the interruptions in family relationships it causes. The use of smartphones by adults includes the need to respond to alerts and check notifications issued by diverse cell phone applications. This generates conflict due to interruptions in family members' daily activities.

Palen and Hughes (2007) investigated five families, asking them to record and submit reports through voicemail about their use of cell phones and its influence in the family context. Participants reported that smartphones enabled them to perform work tasks in locations other than their place of work, for example, at home. However, it was a challenge to balance the use of smartphones, domestic chores that had to be done, and spending time with the family, as the smartphone was a source of interruptions and resulted in complaints from the children.

In another study, Sobral (2019) interviewed 10 families regarding the use of smartphones by adults and children and found excessive, even addictive, smartphone use by parents, according to the participants' own experiences. However, adults viewed children's use of smartphones as a means of entertaining and occupying them, transforming smartphones into electronic baby monitors (Sobral, 2019).

The findings of yet another study carried out in the metropolitan region of Madrid with nine pairs of parents who had children aged 3–7 years are in line with what Sobral (2019) found regarding the use of touchscreen technology to entertain young children while adults are busy (Galera; Matsumoto; Poveda, 2016). Another body of research focused on parents' dissatisfaction with their children's use of smartphones. For example, in 2019, a US nonprofit organization, Common Sense Media, surveyed 1,000 respondents, comprising parents and children aged 12–18, who reported signs of excessive screen time by teenagers.

Although entities such as the American Academy of Podiatry provide guidelines and recommendations for guardians, for example, about the timing and adequacy of consumer content for children, there is an increasing debate about the association between the use of smartphones by parents and their children. Cizmeci (2016), for instance, argued that there is a relationship between caregivers' and children's experiences with smartphones in the same family context.

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According to Yaman (2021), based on interviews conducted with 14 families in England, the wide integration of smartphones into family life ends up affecting parental time and quality. Regarding this topic, Knitter and Zemp (2020) present a range of studies that, although they analyze the implications of this technology, do not examine whether the specific effects of caregivers' smartphone use vary according to the age of their children.

Technoference

It is common to notice situations in everyday life where a smartphone is present and interrupts the interactions of friends, couples, and even parents with their children. In this sense, situations of invasion, interruption, and conflict using smartphones are being studied as sources of disorder in relationships, especially within families (Frota, 2021). This is because of the ubiquity of smartphones in personal, social, and private spaces. McDaniel and Coyne (2014) analyzed how disruptive touchscreen technologies can be when people interact with each other. In view of this, they initially turned their attention to the impact of interruptions by technological devices, such as tablets, computers, televisions, and smartphones, on both romantic and family relationships.

Adultos ou crianças podem experimentar diferentes emoções uma vez que suas interações são atravessadas pelo smartphone. As crianças, por exemplo, podem sentir decepção, mágoa e até desenvolver comportamentos de retaliação com seus cuidadores. Estas emoções e comportamentos foram relatadas por crianças na Irlanda quando questionadas sobre o uso de seus pais (Browne, 2021).

McDaniel and Coyne (2016) also found that among touchscreen technologies, the use of smartphones is associated more strongly with conflict and relationship dissatisfaction than other appliances. Therefore, it is necessary to understand how smartphones can harm the quality of family relationships and moments of care between parents and children (Frota, 2021).

The term technoference, a portmanteau of "technology" and "interference," was coined to designate occasions in which technology interferes, interrupts, or disrupts in some way or another the daily lives of families and couples (McDaniel, 2013; McDaniel; Coyne, 2016a; McDaniel; Drouin, 2019). Interruptions can be short or long. They can occur because users decide to tinker with the technology, trying to divide their attention between the other person and the device, or because the cell phone emits some sound or notification that invades the time when people are together (McDaniel, 2013).

McDaniel also analyzed why people used their smartphones while interacting with others, such as the need to respond to messages. Regarding members' interactions in the family context, the researcher argued for the importance of understanding how parents use mobile devices and the main purposes of their use. Many adults access their smartphones for activities such as listening to music, working, reading, or obtaining information about a specific topic.

On some occasions, technoference arises from a simple curiosity to check the device's notifications or even out of the habit of having it available and at hand. Attachment to a phone, triggered by its complete integration into users' routines, contributes to forming a strong habit and even an addiction to technology (McDaniel, 2019; McDaniel et al., 2024a). Recently, a few studies have focused on the relationship between parental use of technology and their children's. In one study, Liu et al (2020) found that parental technoference predicted children's later addiction to smartphones. In another study, Krogh et al (2021) conducted a longitudinal in which they found that mother-infant technoference occurred 5 to 6 times daily, and that the child's screen time increased significantly between the ages of 2 and 11 months.

Developers of applications and smartphone platforms build mechanisms that encourage their users through signals and sound, to check their mobile devices constantly. This makes people look at their cell phones more often during the day, shaping a habit that makes it difficult to disconnect (Frota, 2021). However, in interactions between parents and children, boredom can arise during leisure and basic parenting care, driving adults to turn to their smartphones.

McDaniel (2019) discussed the consequences of parental smartphone invasion in parent-child relationships and how they are affected by this interference. Any situation that causes discomfort among family members may, to a greater or lesser extent, cause discomfort in the relationship. When children interact with a guardian while the latter's attention is focused on their smartphone, the guardian appears less affectionate and less involved with their child.

On the other hand, children can externalize their discontent through complaints, tantrums, or even confrontational reactions to adults. The frequency with which and how

parents deal with technology in the presence of children can lead to lower verbal ability and even a loss of connection and appreciation of the quality of the moment.

The relationship between parenting and smartphone interference has been linked to family conflicts and emotional and parental tension. Consequently, guilt and feelings of judgment from others arise regarding adults' use of their smartphones during quality time with their children. The critical view of others, as well as of the parents who are agents of technoference, comes to the fore due to the shift in priority in the family context, as those parents fail to engage with their children.

Research Questions

Such discussions, latent in the media and everyday conversations, highlight the importance of understanding how cell phone use can interfere with social relationships. Because smartphones are so widespread, it is important to analyze the causes and effects of their use in family relationships. Subsequently, this study investigated the influence of smartphone use on parent-child relationships through the following questions:

1. How has smartphone use interfered with the relationship between parents and children?
2. How do parents use these mobile devices while with their children?
3. How is parental use perceived in parent-child relationships?
    a) What are parents' perceptions of their use of smartphones?
    b) How do parents believe their children perceive their smartphone use?

Methods

Before presenting the methodological procedures used in this study, it is important to record the context in which the research was developed. The year 2020 was marked by the COVID-19 pandemic that had affected millions of people worldwide and caused the deaths of more than 2 million people by the beginning of 2021.

The initial intention of this research was to interview parents at home as well as their children at school. However, under the guidance of the Brazilian municipal and federal governments, institutions from all over the country, including educational ones, adopted strong measures to combat the transmission of the virus. Consequently, all schools were closed as of March 17, 2020. In this context, parents began to monitor their children's studies during online classes. They needed to work in a different setup — the home office — and

simultaneously organize work time and home space. Thus, a new routine had to be developed as household members shared the same space for many months.

In this unusual scenario, we had to adjust our method by redefining some procedures, among them, interviewing only parents and no children. This decision was based on the context in which the interviews were to be originally carried out, namely, removed from the household where children might be more comfortable to criticize their parents for using their smartphones in their presence. Since it was no longer possible to interview children removed from their environment, instead of asking the children about their parents' use of smartphones, we asked the parents themselves how their children reacted to their use of smartphones while they were with them.

Parents of children aged 8–9 years participated in this study. They were recruited through posts on social networks, such as Facebook and Instagram. A total of 30 guardians agreed to participate: 28 mothers and two fathers. The interviews were conducted via video call on WhatsApp.

Interviews were audio-recorded with a digital recorder and analyzed using the Atlas.ti Windows (Version 9) qualitative analysis software (Atlas.ti Scientific Software Development GmbH, 2020). Atlas.ti allows code to be created, grouped, and ranked. From the collected data, a code manual was created with definitions and examples for coding all interviews. The interviews were analyzed, and 135 codes were created and subsequently organized into 25 groups according to the theme of the analysis.

Results and Discussion

It is important to analyze the characteristics of smartphone use by family members when discussing the presence of smartphones in the family context. That is, we must examine parents' experience with smartphones as an influence on how their children develop their own experiences.

The data point to a multiplicity of factors experienced by parents, leading to an understanding of the complexity of their relationship with that technology. Among these factors, the most frequent ones were a feeling of dependency on technology (64% of parents) and excessive time spent with it (54% of parents), followed by concern about notifications and creating strategies to avoid being with it all the time, both reported as such by 34% of the parents.

Some caregivers experience feeling trapped by and dependent on their smartphones. The following are excerpts from three participants (P) who addressed dependency and addiction in their experiences with smartphones:

P5: ... to be able to get out of the addiction, right, and also from the internet, from this addiction that it is, you know? Of you staying on it all the time, all the time! It turns out that you may miss something, some detail because you are usually on your cell phone, you are talking, and you do not even look at the person's face ...

P27: The feeling is that you cannot ... "just a little more, no, let me see just the next one, no, it's just the next one." Do you understand? And the feeling is like that of anguish, wanting to get out of there, and not being able to.

P12: The negative aspect, I think, is this dependence. Wow, I have seen myself waking up and sleeping with my cell phone, and so the good morning was not to my son; the good morning was to the cell phone.

These excerpts point to the difficulty that parents experience in putting down their devices. P27 specifically identified how the dependent relationship with their smartphone led to feelings of anguish and malaise. Dependence, therefore, occurs through a sensation of attraction, imprisonment, and even addiction. Thus, P27 felt anguish because, on the one hand, there was a desire to reduce smartphone use; on the other hand, there was also a craving to continue using it.

Belk (2013) claimed that the concentration of needs and tasks, such as banking or shopping, on touchscreen devices increases their importance as they become an extension of human beings in their daily lives.

Feelings of relief or well-being were mentioned in the interviews when parents took a break from using the technology, either because they wanted to or because they had to. On the other hand, participants reported feeling anxious when the smartphones emitted light and alerts. In addition, notifications also arouse curiosity in users, as they feel the need to check them immediately. Consequently, smartphone sounds, alerts, and notifications cause intrusions and interruptions when parents interact with their children, which are sources of conflict between couples and family members (McDaniel; Coyne, 2016a; 2016b; McDaniel; Radesky, 2018). As previously mentioned, this is related to the fact that many applications are purposefully developed so that users would constantly check messages and warnings.

Presence of smartphones in the family context

Our main interest in this study was to understand the caregivers' perceptions of smartphone use in the family and how it affects their interactions with their children. To do so, we examined the concept of technoference (McDaniel; Coyne, 2016a; 2016b). Considering the ubiquity of mobile devices, they have the potential to cause interruptions in parenting situations. According to the responses received in this study, we found that 54% of the participants were not satisfied with smartphone use in their households. The second major concern was about conflicts that arose within the family (reported by 50% of parents), followed by dissatisfaction with their own use of smartphones (47%).

The data point to the characteristics of technoference in the family (how it happens, in what context, and in what way) and the experiences of those who suffer from or are agents of smartphone interference. One point made by parents was the lack of comprehension of the effect of using their devices in certain family situations. Technoference can become so commonplace that it becomes imperceptible — the user unconsciously develops the practice of ignoring a child and may not even be aware of it. Parents can even be in the company of their children, but the presence of the smartphone detracts from the quality of the time spent together. In addition, problematic smartphone use affects parents' ability to accompany their children. Other findings suggest that caregivers who supervise children while using their devices find it difficult to respond to them and observe the surrounding environment (HINIKER et al., 2015). The following are a few examples of participants' answers, where they have found that smartphone use affects family interaction:

P10: Now, I am kind of more connected [on the smartphone] because I am really looking forward to what I am doing ... any message I receive, I am alert because there are friends wanting to know ... "what's it like?" "Explain it to me." So, I am more attentive and willing to leave my daughter for a moment and stay on the phone.

P27: ... he says [the mother repeats her son's words], "Mother, pay attention to me!" [I tell him] "No, my love, wait a minute, I will go ... it is quick here because I have to answer this person."

P9: I feel bad because I make him wait, and he notices ... like ... he ends up feeling less important at that moment. I say, "Son, wait a minute because now, Mom is going to talk to a friend." ... He has to wait the whole time without talking to me. I interrupted something that

was about him, and I think that at that moment … it gives him a feeling that he is less important.

Aside from affecting family interactions, parents also mentioned that technology can cause distancing within the family, as illustrated by the following excerpts:

P24: This distance, right, that we end up creating, and then I am going to put myself as the culprit here. We ended up creating this distance. The quality of family time that we talked about earlier.

P12: This really is something very bad … You are more concerned with knowing issues, sometimes even with social media, than knowing the person who is by your side. That's what I mean. This dependence on cell phones was slightly uncomfortable. It [the phone] should have been third or fourth, but sometimes I put it first, and it was not cool.

P11: The way in which these devices affect the way we interact at home. So, you are at the table there … they're watching television sometimes, looking at the cell phone, it's television, cell phone, and all together. So, it is a lot of information at once; just as it can bring you closer, depending on the context, it can also distance you, depending on the situation.

McDaniel (2014) divided technoference into long and short types of interference. Users end up allowing themselves to share their attention while using their smartphones, and McDaniel called this media multitasking. However, each person ignored because of technoference will experience it differently. For example, we observed in P9's responses the feeling of disrespect when the child disputes his mothers' attention toward her smartphone.

Depending on the relationship that caregivers build with touchscreen technology, there is the possibility of an impact on their interactions with their children and how they feel and perceive themselves in the family relationship (Frota, 2021). Discussions about the presence of smartphones during children's interactions with their parents allow us to analyze technoference as a phenomenon that generates family distance. This indicates that technoference can lead parents to no longer observe or perceive their children's needs or appreciate the degree to which it can harm their relationship.

Conclusion

Smartphones and touchscreen technology have definitively entered households and are increasingly becoming part of everyone's routine. Adults use these devices as tools to streamline and facilitate their daily routines. Thus, smartphones are increasingly important for users as they become an extension of their daily lives and routines (BELK, 2013).

The results of this study indicate children's dissatisfaction and conflicts regarding their parents' use of smartphones. The use of smartphones for work and entertainment culminates in constructing a context in which all members use them extensively. This leads to a greater incidence of technoference in situations requiring communication, such as mealtime and leisure.

In our research, we noticed that the interference of smartphones in the relationships between parents and children encompassed multiple facets, such as users' conception of technology and family relationships. Parents' conceptions lead to different experiences of smartphone invasion and intrusion when they are in the presence of their children. Many found themselves in a dependency/addiction situation, using the technology more than they desired. However, it is important to emphasize the influence of the pandemic experienced by families around the world, as it is likely that intrusions and invasions by cell phones of parents have happened more often than they would have otherwise.

In this study, we could not hear directly from the children of the participating parents. Future research must consider children's opinions and conceptions about their parents' use of smartphones and how these devices can transform or infringe upon the quality of family relationships.

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Notas

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