

Technoference

Parent Mobile Device Use and Implications for Children and Parent–Child Relationships

Brandon T. McDaniel
Parkview Mirro Center for Research and Innovation
Fort Wayne, Indiana

Abstract

The increase in the prevalence of smartphones and mobile devices has spurred changes in the caregiving environment of infants and young children, as phones and mobile devices are used at times during caregiving and in caregiving spaces. This use could create disruptions and cause distractions during parenting (termed *technoference*). This article summarizes the potential impacts on parent responsiveness and the experiences of infants and young children. Yet, it also warns that it is important to consider the reason for and type of parent use. Finally, the article ends with practical tips for working with parents concerning mobile device use.

The increase in the prevalence of smartphones and mobile screen devices has spurred changes in the caregiving environment of infants and young children. As of 2019, 96% of U.S. adults 18 to 29 years old owned a smartphone, and ownership was 92% among those 30 to 49 years (Pew Research Center, 2019). Moreover, 90% frequently carry their phone with them throughout the day (Rainie & Zickuhr, 2015). It is inevitable that devices will be present during caregiving times and in caregiving spaces. Simply as an illustration, here are a few statistics:

- 73% of parents used a phone during mealtime with their child or children in a restaurant (Radesky et al., 2014).
- 35% of caregivers were on their phone for 1 out of every 5 minutes (or sometimes more) during times they and their child were at the park (Hiniker et al., 2015).
- 36% of parents reported spending too much time on their phone (Jiang, 2018).

This phone and mobile device use could create disruptions and cause distractions during parenting. These disruptions, distractions, and interruptions in face-to-face parent-child time have been termed *technoference* (McDaniel & Coyne, 2016a, 2016b; McDaniel & Radesky, 2018a, 2018b). For example,

mothers reported technology interrupting their interactions with their infant or young child (3 years or younger; $M = 11.74$ months) at least sometimes in various parenting domains, such as 65% during playtime, 36% during book reading, 26% during mealtime, 26% during bedtime, and even 22% during discipline and limit setting (McDaniel & Coyne, 2016b). Phone use may be particularly prevalent during infant care, due to the sometimes monotonous and extended nature of the care tasks (e.g., feeding). Some studies on mothers of infants have found that 92% report using screens during daily infant feedings (Ventura & Teitelbaum, 2017), and 37% report often texting or using apps on a mobile device during infant feeding (Ventura et al., 2020).

Impacts on Parent Responsiveness and Sensitivity

Overall, the research indicates at least small negative impacts of parent phone use during caregiving on parent responsiveness, although this research has primarily been self-report and observational (e.g., McDaniel, 2019). In interviews, parents and caregivers have expressed difficulty switching between their device use and attending to their child (Radesky et al., 2016) and feeling they are better at focusing on their child when their phone is not present (Blackwell et al., 2016; Radesky et al., 2016).

Competencies for Prenatal to 5 (P-5) Professionals™

P-5 ① P-5 ②

For more information see page 4, or visit www.zerotothree.org/p-5

Naturalistic and structured observations of parents and young children have revealed results such as the following when parents use their device (especially when absorbed in the use):

- fewer verbal and nonverbal interactions in restaurants, and at times inappropriate or harsh responses to the child (Radesky et al., 2014; Radesky et al., 2015)
- less likely to respond to child bids for attention at play-grounds (Hiniker et al., 2015; Vanden Abeele et al., 2020)
- lower sensitivity to infant cues during feeding (Golen & Ventura, 2015)

Although currently limited, some experimental work has begun to show impacts on parent behavior and responsiveness. In an experiment on 200 parent–child dyads during a museum visit, Kushlev and Dunn (2019) found that those parents who were experimentally assigned to greater phone use felt more distracted and less connected to their child. Ventura, Levy, and Sheepar (2019) had 25 mothers engage in infant feedings with and without device use, and they found that mothers engaged in less fostering of cognitive growth during the device use condition. In other words, mothers talked less often to their infants when using a device during infant feeding. Reed, Hirsh-Pasek, and Golinkoff (2017) performed a word learning task with 38 mother–toddler dyads. Dyads were assigned to either a phone interrupted condition or an uninterrupted condition, and the researchers found that toddlers were less likely to learn the word in the interrupted condition. The researchers speculated that this was likely due to the decrease in contingency, joint attention, and responsiveness to the child.

Parents Have Always Been Distracted. How Is Distraction With Devices Any Different?

Yes, parents have always been distracted at times, and humans have often had to multitask, so this is a valid question. In a prior review, I answered this question as follows.

Yes, there have been concerns expressed with the advent of every technology over the years. However, this is the first time in the history of humanity where we have devices that are connected to almost all parts of our lives and identities and that travel with us (often in our pocket or hand) everywhere we go, from private to public spaces and from individual time to family time. Additionally, some initial work suggests it is more difficult for us to break our attention with our mobile devices than with other sorts of distractions, making child needs and bids for attention less likely to be successful (e.g., Abels et al., 2018; Hiniker et al., 2015). (McDaniel, 2019, p. 76)

In other words, this distraction is different due to the way in which it has permeated adults' sense of self and their daily lives as well as the strong use habits that can be formed. In fact, 46% of U.S. adults felt they could not live without their phone in 2015 (Pew Research Center, 2015), and many individuals feel anxious when they do not have access to their phone (King



Phone and mobile device use could create disruptions and cause distractions during parenting.

et al., 2013). For a more detailed review of the reasons parents might use their device around their child, see McDaniel (2019).

What Infants and Young Children See and Feel

Overall, a small but growing body of survey, observational, and experimental research has demonstrated that children are aware of and react to their parents' device use. When researchers asked children and teens how their parents' mobile device use makes them feel, they often used words such as sad, angry, and lonely, and they expressed dissatisfaction with those parent–child times (Steiner-Adair & Barker, 2013). In an experiment on 50 parent–child dyads (3 to 12 years old), children ran around a softball diamond. Children ran faster and were less likely to make a mistake when their parent was responsive versus on their phone (Stupica, 2016). In addition, teens experienced their parents as less warm when parents were distracted by devices (Stockdale et al., 2018; Xie & Xie, 2020) and may even feel worse about themselves (Xie & Xie, 2020).

Focusing specifically on infants and young children, researchers have performed the Still Face Paradigm (Mesman et al., 2009; Tronick et al., 1978) with parents and infants, substituting phone use for the still face segment (Myruski et al., 2018; Stockdale et al., 2020). The Still Face Paradigm consists of three segments: (1) free play, (2) still face, when the parent stops interacting and goes devoid of emotion, and (3) reunion, when play and interaction resume. Generally, during the mobile device use (still face) segment, these researchers found that infant bids for attention increased, negative emotions increased, and positive emotions decreased, meaning that many infants reacted to and were uncomfortable with their parent's disengagement with a device. In addition, according to parent self-reports over 6 months in a sample of more than 170 two-parent families, greater technofence in parent–child interactions led to greater externalizing behavior over time, such as child acting out, frustration, and anger (McDaniel & Radesky, 2018a, 2018b).



Mothers talked less often to their infants when using a device during infant feeding.

Infants and children can also be indirectly affected by parent phone and mobile device use. There is an ever-growing literature which has linked technofence in couple relationships with decreased relationship satisfaction, lower quality interactions, greater relationship conflict, decreased feelings of closeness to one's partner, and negative emotions in the individual feeling snubbed (e.g., Amichai-Hamburger & Etgar, 2016; Brown et al., 2016; Dwyer et al., 2018; Halpern & Katz, 2017; Krasnova et al., 2016; McDaniel & Coyne, 2016a; McDaniel et al., 2018; McDaniel et al., 2020; Roberts & David, 2016; Wang et al., 2017). Some work has linked technofence with lower coparenting quality, or the ability of partners to work together in parenting their children (McDaniel & Coyne, 2016b; McDaniel et al., 2018). Researchers also know that the quality of the couple and coparenting relationship (in families with multiple caregivers) spills out into the quality of parenting that children receive as well as how secure children feel in their family relationships (Davies & Cummings, 1994; Erel & Burman, 1995; Margolin et al., 2001). In other words, technofence could negatively impact the quality of the interparental or other family relationships which then could negatively impact parenting quality and the child—yet no research has directly examined the link between technofence in the interparental relationship and child outcomes.

Technofence and Bonding With a Parent

Although there is no longitudinal or experimental research as of yet which can directly link certain types and frequencies of parent phone use to worse parent-child relationship quality or weaker parent-child bonding or attachment, young children's words and reactions as described in the previous section (McDaniel & Radesky, 2018b; Steiner-Adair & Barker, 2013) indicate that parent distraction with technology might negatively impact parent-child bonding if it occurs frequently. Focusing specifically on infants and very young children, researchers and clinicians are at times concerned about the potential impacts of parent distraction with devices due to the child's need for

sensitive, responsive caregiving and assistance with the regulation of their emotions (e.g., McDaniel & Coyne, 2016b; Radesky & Christakis, 2016; Stupica, 2016). As cited previously, parent responsiveness and sensitivity can be negatively impacted by parent phone use, and as I have stated in an earlier review,

If a parent was distracted by a phone or other device, the parent might be less aware of their child's cues and needs, less accurate in their interpretation of their needs, delayed in their responses (less contingent), less appropriate in their response, or all of the above (McDaniel, 2019, p. 75).

Hypothetically, this decrease in sensitive caregiving, if frequent, should be expected to negatively impact the overall quality of the infant or young child's bond with the parent (attachment). This decrease can also be expected to negatively impact the infant's or child's ability to regulate their emotions over time, as the parent is less available to soothe and assist the young infant or child with their emotions (e.g., co-regulation; Evans & Porter, 2009; Feldman, 2007). As some initial evidence, survey research has indicated that adolescents feel (a) less attached to their parents, (b) that their relationship needs are not being met, and (c) worse about the parent-child relationship if their parents are distracted more often by their phones (Niu et al., 2020; Xie et al., 2019; Xie & Xie, 2020). Finally, there is some emerging survey research that has linked parents' greater phone use with worse feelings of attachment to their child in samples of parents with infants, young children, and school-aged children (Gieschen et al., 2020; Johnson, 2019; Linder et al., 2020). To be clear, it is unlikely that occasional glances at a smartphone would cause any meaningful damage to a parent-infant relationship. However, if the distractions were frequent enough and if they negatively influenced the sensitivity of the parent on an ongoing basis, then changes in parent-infant bonding would be expected.

Not All Phone Use Is Created Equal: The Importance of Considering the Reason for and Type of Use

There are a variety of reasons a parent or caregiver might use their device while around their infant or young child. For a detailed review of these reasons, see McDaniel (2019) and see Radesky et al. (2016) for interviews of parents and caregivers about their reasons for using their devices around their children. As a summary, here are some of the main reasons for use from my review of the literature that relate to parents: (1) Phones are useful devices that facilitate many different parts of life, such as connection, work, information-seeking, and much more; (2) to entertain themselves or have something to do when bored by the parenting task or experience at hand; (3) to deal with negative emotions, such as loneliness or depression, and/or to seek support; (4) to virtually escape from stressful parenting experiences, such as a crying infant or a tantruming toddler; and, (5) simply out of a habit that has formed from frequently checking the device at certain times throughout the day, which habit has formed over months or even years. In a sample of 296 parents with a child 3 to 6 years

old, I surveyed parent perceptions of phone use for positive purposes. As a few examples, I found that (McDaniel, 2020)

- 58% felt their device use helped them calm down when at their breaking point
- 65% felt their device use helped them see the positives in their child again
- 65% felt their device use helped them see what they liked about parenting again
- 75% were able find strategies that made them a more effective parent after the device use
- 79% said the use helped them come up with activities to do with their child

In other words, parent phone use often serves to gratify a need or fulfills a purpose, and professionals cannot forget this when intervening or working with parents, nor can they treat all phone use as the same.

Yet, although the parent's device use may help them and/or serve a purpose, researchers and professionals should still carefully consider whether the device use (and the type of device use) is the most effective way for the parent to accomplish their purpose or fulfill their need. For example, if a parent needs to calm down, considering and helping a parent to implement strategies that are empirically supported to help alleviate anger and frustration within the parenting context would be better than the parent pulling out their phone and scrolling through social media. However, there may also be times when the device use is effective and helpful for the parent. For instance, a parent does not know what to do in that parenting moment and has a trusted friend who they can call and who will help them to quickly overcome this moment of need. Finally, parents should also consider whether using their phone during that moment (e.g., to control their emotions, to distract themselves from an experience they do not enjoy, to respond to a work email during family time) is the behavior they want to teach their children, as one of the strongest predictors of how children will use technology is how their parents use technology (Lauricella et al., 2015; Paudel et al., 2017; Xu et al., 2015).

Also, depending on the content and activities engaged in during the device use, professionals may see different impacts on or associations with parent mental health and well-being. For example, if a parent uses their device in a passive way—"consuming information without direct exchanges (e.g., scrolling through news feeds, viewing posts)" (Verduyn et al., 2015, p. 480)—this use may prove to be detrimental to, or at least not helpful for, their mental health. Passive use tends to be linked with greater depressive symptoms and worse well-being over time (Escobar-Viera et al., 2018; Verduyn et al., 2015, 2017). Furthermore, use of phones or social media to cope by disengaging from or avoiding life stress has been associated with worse life satisfaction (van Ingen et al., 2016). Therefore, passive use with no specified purpose or simply to



Photo: shutterstock/ViewStock

Technoference could negatively impact the quality of the interparental or other family relationships which then could negatively impact parenting quality and the child.

escape may be ineffective and perhaps detrimental to mental health over time.

On the other hand, active use—such as “direct exchanges with others (e.g., posting status updates, commenting)” (Verduyn et al., 2015, p. 480) or reaching out to a trusted friend for help—could be beneficial (Deters & Mehl, 2013; Escobar-Viera et al., 2018), especially if individuals perceive that others are engaged with them or supporting them (Frison & Eggermont, 2015). Indeed, individuals can feel connected to and supported by their friends and family via technology, which can lead to or be associated with lower stress levels and better mental health (Lenhart et al., 2015; McDaniel et al., 2012). In contrast to passive use, active use has been linked with fewer depressive symptoms over time (Escobar-Viera et al., 2018; Verduyn et al., 2015 2017).

Practical Tips for Working With Parents Concerning Their Mobile Device Use

Overall, parent mobile device use and distraction with devices is a complex issue, and professionals should not simply view all parent device use around children as problematic. If parent device use around children happens frequently and if it interferes in parent–child interactions or parent sensitivity (e.g., awareness of child cues and needs, timeliness of parent



Passive use of smartphones or social media with no specified purpose or simply to escape may be ineffective and perhaps detrimental to mental health over time.

responses), there is the potential for negative effects on infants and children. However, it is also possible for phone and device use to improve outcomes at times, if the use empowers the parent to be better in the moment such as through having access to social support and other resources or maintaining more sensitive caregiving (e.g., reducing harsh reactions such as yelling at the child). Finally, it is likely that many of these different types of uses (positive, negative, and neutral) will happen in a single day within a parent, and researchers do not know the exact consequences for parents and children resulting from different combinations of parent distraction, use for pleasure, and use for empowerment. Researchers need to further explore both the potential positives and negatives of parent device use around their children and combinations of this use.

As families live in a device saturated world, it is easy for parents to become stuck in patterns that may not be the best for their own well-being and the well-being of their children and family. Researchers, clinicians, and educators must assist parents in developing what I term “healthy digital habits.” Following are some suggestions for working with parents concerning their phone and mobile device use.

1. Remember that phone/mobile device use often serves a purpose or fulfills a need.

Professionals should not approach parents with the mindset that all use is bad. Instead, work with parents to understand their reasons for use and what they do on their device when they use it around their children. Seek to understand them, not only to change them.

2. Work with parents to recognize how they might accomplish the task or fulfill the need using a more effective strategy.

If they would like to change their phone and mobile device habits, show and teach them effective strategies

to accomplish what they need. For some, this might mean changing the type of device use to be an active support seeking (e.g., calling a friend directly) instead of mindlessly scrolling through social media. At other times, it may be that the device use needs to be removed entirely. If the device use is removed, a different activity or strategy will need to be used to replace it. Otherwise, professionals may have removed the parent’s only strategy for fulfilling that particular need, which could set the parent up for failure.

3. Help parents to set up clear boundaries for their phone and mobile device use.

Things often go better when there is a plan. The American Academy of Pediatrics (AAP Council on Communications and Media, 2016) has recommended implementing screen-free times or screen-free zones. These are times of the day or areas of the home in which devices will be put away in order to minimize distractions and hopefully maximize connection and relationship building. Assist parents in identifying realistic goals as well as barriers for screen-free times and zones.

4. Stress the importance of sensitive caregiving for infant and child development.

Help the parent understand the reason behind examining and potentially changing their mobile device use—that infants and children need caregivers who are aware of their needs and who give timely and appropriate responses, at least most of the time. The occasional distraction with a device will likely not cause harm. However, help them to recognize that a frequent pattern of distraction might impact bonding with their infant or young child, potentially increase child behavior problems, and more. Finally, do not overstate these effects. Professionals should not create fear or exaggerate the potential impacts of their device use. Instead, focus on how relationships can become stronger when parents focus on creating ways to connect and on their children’s needs.

Brandon T. McDaniel, PhD, is a research scientist at the Parkview Mirro Center for Research and Innovation in Fort Wayne, Indiana. He received his master’s degree and doctorate in human development and family studies from The Pennsylvania State University. He has published extensively on the intersection of technology and family life and is a nationally recognized expert on the impacts of technology use on children and families. Dr. McDaniel’s research on technofence—the interference of device use in face-to-face interactions and family relationships—has attracted international attention. He also regularly engages in community education in the promotion of healthy digital habits.

References

- AAP [American Academy of Pediatrics] Council on Communications and Media. (2016). Media and young minds. *Pediatrics*, 138, e20162591.
- Abels, M., Vanden Abeele, M. M. P., van Telgen, T., & van Meijl, H. (2018). Nod, nod, ignore: An exploratory observational study on the relation between parental mobile media use and parental responsiveness towards young children. In E. M. Luef & M. M. Marin (Eds.), *The talking species: Perspectives on the evolutionary, neuronal, and cultural foundations of language* (pp. 195–228). Uni-Press Verlag.
- Amichai-Hamburger, Y., & Etgar, S. (2016). Intimacy and smartphone multitasking—A new oxymoron? *Psychological Reports*, 119(3), 826–838.
- Blackwell, L., Gardiner, E., & Schoenebeck, S. (2016, February). Managing expectations: Technology tensions among parents and teens. *Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing* (pp. 1390–1401).
- Brown, G., Manago, A. M., & Trimble, J. E. (2016). Tempted to text: College students' mobile phone use during a face-to-face interaction with a close friend. *Emerging Adulthood*, 4(6), 440–443.
- Davies, P. T., & Cummings, E. M. (1994). Marital conflict and child adjustment: An emotional security hypothesis. *Psychological Bulletin*, 116(3), 387–411.
- Deters, F. G., & Mehl, M. R. (2013). Does posting Facebook status updates increase or decrease loneliness? An online social networking experiment. *Social Psychological and Personality Science*, 4(5), 579–586.
- Dwyer, R. J., Kushlev, K., & Dunn, E. W. (2018). Smartphone use undermines enjoyment of face-to-face social interactions. *Journal of Experimental Social Psychology*, 78, 233–239.
- Erel, O., & Burman, B. (1995). Interrelatedness of marital relations and parent-child relations: A meta-analytic review. *Psychological Bulletin*, 118(1), 108–132.
- Escobar-Viera, C. G., Shensa, A., Bowman, N. D., Sidani, J. E., Knight, J., James, A. E., & Primack, B. A. (2018). Passive and active social media use and depressive symptoms among United States adults. *Cyberpsychology, Behavior, and Social Networking*, 21(7), 437–443.
- Evans, C. A., & Porter, C. L. (2009). The emergence of mother–infant co-regulation during the first year: Links to infants' developmental status and attachment. *Infant Behavior and Development*, 32(2), 147–158.
- Feldman, R. (2007). Parent–infant synchrony: Biological foundations and developmental outcomes. *Current Directions in Psychological Science*, 16(6), 340–345.
- Frison, E., & Eggermont, S. (2015). The impact of daily stress on adolescents' depressed mood: The role of social support seeking through Facebook. *Computers in Human Behavior*, 44, 315–325.
- Gieschen, D., Parris, L., McDaniel, B. T., Braswell, G., & Zimmerman, C. (2020). *Social learning in the digital age: Associations between technofeference and mother-child attachment and child social skills* [Manuscript submitted for publication]. Department of Psychology, Illinois State University.
- Golen, R. B., & Ventura, A. K. (2015). Mindless feeding: Is maternal distraction during bottle-feeding associated with overfeeding? *Appetite*, 91, 385–392.
- Halpern, D., & Katz, J. E. (2017). Texting's consequences for romantic relationships: A cross-lagged analysis highlights its risks. *Computers in Human Behavior*, 71, 386–394.
- Hiniker, A., Sobel, K., Suh, H., Sung, Y. C., Lee, C. P., & Kientz, J. A. (2015, April). Texting while parenting: How adults use mobile phones while caring for children at the playground. In *Proceedings of the 33rd annual ACM Conference on Human Factors in Computing Systems* (pp. 727–736).
- Jiang, J. (2018). How teens and parents navigate screen time and device distractions. *Pew Research Center*. http://www.pewinternet.org/wp-content/uploads/sites/9/2018/08/PI_2018.08.22_teens-screentime_FINAL.pdf
- Johnson, C. M. (2019). *Effects of problematic smartphone use, smartphone interference in parenting, and parental attachment to their young child* [Unpublished doctoral dissertation]. Purdue University Graduate School.
- King, A. L. S., Valença, A. M., Silva, A. C. O., Baczynski, T., Carvalho, M. R., & Nardi, A. E. (2013). Nomophobia: Dependency on virtual environments or social phobia? *Computers in Human Behavior*, 29(1), 140–144.
- Krasnova, H., Abramova, O., Notter, I., & Baumann, A. (2016). *Why phubbing is toxic for your relationship: Understanding the role of smartphone jealousy among "Generation Y" users*. Twenty-Fourth European Conference on Information Systems (ECIS), Istanbul, Turkey.
- Kushlev, K., & Dunn, E. W. (2019). Smartphones distract parents from cultivating feelings of connection when spending time with their children. *Journal of Social and Personal Relationships*, 36(6), 1619–1639.
- Lauricella, A. R., Wartella, E., & Rideout, V. J. (2015). Young children's screen time: The complex role of parent and child factors. *Journal of Applied Developmental Psychology*, 36(2015), 11–17. <https://doi.org/10.1016/j.appdev.2014.12.001>
- Lenhart, A., Smith, A., Anderson, M., Duggan, M., & Perrin, A. (2015, August). *Teens, technology and friendships*. Pew Research Center. <http://www.pewinternet.org/2015/08/06/teens-technology-and-friendships>
- Linder, L., McDaniel, B. T., Stockdale, L., & Coyne, S. M. (2020). *The impact of parent and child media use on parent-child attachment in early childhood* [Manuscript submitted for publication]. Department of Child and Family Development, San Diego State University.
- Margolin, G., Gordis, E. B., & John, R. S. (2001). Coparenting: A link between marital conflict and parenting in two parent families. *Journal of Family Psychology*, 15, 3–21.
- McDaniel, B. T. (2019). Parent distraction with phones, reasons for use, and impacts on parenting and child outcomes: A review of the emerging research. *Human Behavior and Emerging Technologies*, 1(2), 72–80.
- McDaniel, B. T. (2020, November). *Parent perceptions of positive and negative impacts of phone use on parenting and associations with stress, depression, and child behavior* [Poster presentation]. National Council on Family Relations. St. Louis, MO.
- McDaniel, B. T., & Coyne, S. M. (2016a). "Technofeference": The interference of technology in couple relationships and implications for women's personal and relational well-being. *Psychology of Popular Media Culture*, 5, 85–98.
- McDaniel, B. T., & Coyne, S. M. (2016b). Technology interference in the parenting of young children: Implications for mothers' perceptions of coparenting. *The Social Science Journal*, 53, 435–443.
- McDaniel, B. T., Coyne, S. M., & Holmes, E. K. (2012). New mothers and media use: Associations between blogging, social networking, and maternal well-being. *Maternal and Child Health Journal*, 16, 1509–1517.
- McDaniel, B. T., Galovan, A. M., Cravens, J., & Drouin, M. (2018). Technofeference and implications for mothers' and fathers' couple and coparenting relationship quality. *Computers in Human Behavior*, 80, 303–313.
- McDaniel, B. T., Galovan, A. M., & Drouin, M. (2020). Daily technofeference, technology use during couple leisure time, and relationship quality. *Media Psychology*, <https://www.tandfonline.com/doi/abs/10.1080/15213269.2020.1783561>

- McDaniel, B. T., & Radesky, J. (2018a). Technoference: Parent distraction by technology and associations with child behavior problems. *Child Development, 89*, 100–109.
- McDaniel, B. T., & Radesky, J. (2018b). Technoference: Parent technology use, stress, and child behavior problems over time. *Pediatric Research, 84*, 210–218.
- Mesman, J., van IJzendoorn, M. H., & Bakermans-Kranenburg, M. J. (2009). The many faces of the still-face paradigm: A review and meta-analysis. *Developmental Review, 29*, 120–162.
- Myruski, S., Gulyayeva, O., Birk, S., Pérez-Edgar, K., Buss, K. A., & Dennis-Tiway, T. A. (2018). Digital disruption? Maternal mobile device use is related to infant social-emotional functioning. *Developmental Science, 21*(4), e12610.
- Niu, G., Yao, L., Wu, L., Tian, Y., Xu, L., & Sun, X. (2020). Parental phubbing and adolescent problematic mobile phone use: The role of parent-child relationship and self-control. *Children and Youth Services Review, 116*, 105247.
- Paudel, S., Jancey, J., Subedi, N., & Leavy, J. (2017). Correlates of mobile screen media use among children aged 0–8: A systematic review. *BMJ Open, 7*(10), e014585. <https://doi.org/10.1136/bmjopen-2016-014585>
- Pew Research Center. (2015). *U.S. smartphone use in 2015*. http://www.pewresearch.org/wp-content/uploads/sites/9/2015/03/PI_Smartphones_0401151.pdf
- Pew Research Center. (2019). *Mobile technology fact sheet*. <https://www.pewinternet.org/fact-sheet/mobile>
- Radesky, J., Miller, A. L., Rosenblum, K. L., Appugliese, D., Kaciroti, N., & Lumeng, J. C. (2015). Maternal mobile device use during a structured parent-child interaction task. *Academic Pediatrics, 15*(2), 238–244.
- Radesky, J. S., & Christakis, D. A. (2016). Increased screen time: Implications for early childhood development and behavior. *Pediatric Clinics, 63*(5), 827–839.
- Radesky, J. S., Kistin, C., Eisenberg, S., Gross, J., Block, G., Zuckerman, B., & Silverstein, M. (2016). Parent perspectives on their mobile technology use: The excitement and exhaustion of parenting while connected. *Journal of Developmental & Behavioral Pediatrics, 37*(9), 694–701.
- Radesky, J. S., Kistin, C. J., Zuckerman, B., Nitzberg, K., Gross, J., Kaplan-Sanoff, M., ... & Silverstein, M. (2014). Patterns of mobile device use by caregivers and children during meals in fast food restaurants. *Pediatrics, 133*(4), e843–e849.
- Rainie, L., & Zickuhr, K. (2015). *Americans' views on mobile etiquette*. Pew Research Center. https://www.pewresearch.org/wp-content/uploads/sites/9/2015/08/2015-08-26_mobile-etiquette_FINAL.pdf
- Reed, J., Hirsh-Pasek, K., & Golinkoff, R. M. (2017). Learning on hold: Cell phones sidetrack parent-child interactions. *Developmental Psychology, 53*(8), 1428–1436.
- Roberts, J. A., & David, M. E. (2016). My life has become a major distraction from my cell phone: Partner phubbing and relationship satisfaction among romantic partners. *Computers in Human Behavior, 54*, 134–141.
- Steiner-Adair, C., & Barker, T. H. (2013). *The big disconnect: Protecting childhood and family relationships in the digital age*. Harper Collins.
- Stockdale, L. A., Coyne, S. M., & Padilla-Walker, L. M. (2018). Parent and child technoference and socioemotional behavioral outcomes: A nationally representative sample of 10- to 20-year-old adolescents. *Computers in Human Behavior, 88*, 219–226.
- Stockdale, L. A., Porter, C. L., Coyne, S. M., Essig, L. E., Booth, M., Keenan-Kroff, S., & Schvaneveldt, E. (2020). Infants' response to a mobile phone modified still-face paradigm: Links to maternal behaviors and beliefs regarding technoference. *Infancy. https://onlinelibrary.wiley.com/doi/10.1111/inf.12342*
- Stupica, B. (2016). Rounding the bases with a secure base. *Attachment & Human Development, 18*(4), 373–390.
- Tronick, E., Als, H., Adamson, L., Wise, S., & Brazelton, T. B. (1978). The infant's response to entrapment between contradictory messages in face-to-face interaction. *Journal of the American Academy of Child Psychiatry, 17*, 1–13.
- van Ingen, E., Utz, S., & Toepoel, V. (2016). Online coping after negative life events: Measurement, prevalence, and relation with internet activities and well-being. *Social Science Computer Review, 34*(5), 511–529.
- Vanden Abeele, M. M., Abels, M., & Hendrickson, A. T. (2020). Are parents less responsive to young children when they are on their phones? A systematic naturalistic observation study. *Cyberpsychology, Behavior, and Social Networking, 23*(6), 363–370.
- Ventura, A. K., Hupp, M., Gutierrez, S. A., & Almeida, R. (2020). Development and validation of the Maternal Distraction Questionnaire. *Heliyon, 6*(2), e03276.
- Ventura, A. K., Levy, J., & Sheeper, S. (2019). Maternal digital media use during infant feeding and the quality of feeding interactions. *Appetite, 143*, 104415.
- Ventura, A. K., & Teitelbaum, S. (2017). Maternal distraction during breast- and bottle feeding among WIC and non-WIC mothers. *Journal of Nutrition Education and Behavior, 49*(7), S169–S176.
- Verduyn, P., Lee, D. S., Park, J., Shablack, H., Orvell, A., Bayer, J., ... & Kross, E. (2015). Passive Facebook usage undermines affective well-being: Experimental and longitudinal evidence. *Journal of Experimental Psychology: General, 144*(2), 480–488.
- Verduyn, P., Ybarra, O., Résibois, M., Jonides, J., & Kross, E. (2017). Do social network sites enhance or undermine subjective well-being? A critical review. *Social Issues and Policy Review, 11*(1), 274–302.
- Wang, X., Xie, X., Wang, Y., Wang, P., & Lei, L. (2017). Partner phubbing and depression among married Chinese adults: The roles of relationship satisfaction and relationship length. *Personality and Individual Differences, 110*, 12–17.
- Xie, X., Chen, W., Zhu, X., & He, D. (2019). Parents' phubbing increases adolescents' mobile phone addiction: Roles of parent-child attachment, deviant peers, and gender. *Children and Youth Services Review, 105*, 104426.
- Xie, X., & Xie, J. (2020). Parental phubbing accelerates depression in late childhood and adolescence: A two-path model. *Journal of Adolescence, 78*, 43–52.
- Xu, H., Wen, L. M., & Rissel, C. (2015). Associations of parental influences with physical activity and screen time among young children: A systematic review. *Journal of Obesity, Article 546925*. <https://doi.org/10.1155/2015/546925>