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Parent Perspectives on Their Mobile Technology Use: The Excitement and Exhaustion of Parenting While Connected

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ABSTRACT *Objective:* Parent use of mobile devices (e.g., smartphones, tablets) while around their young children may be associated with fewer or more negative parent-child interactions, but parent perspectives regarding this issue have not been explored. We aimed to understand parent views regarding their mobile device use to identify actionable targets of potential intervention. *Method:* We conducted 35 in-depth semi-structured group and individual interviews with English-speaking caregivers of children 0 to 8 years old, purposively sampled from diverse ethnic backgrounds, educational levels, and employment statuses. Following thematic saturation, results were validated through expert triangulation and member checking. *Results:* Participants included 22 mothers, 9 fathers, and 4 grandmothers; 31% were single parents, 43% nonwhite race/ethnicity, and 40% completed high school or less. Participants consistently expressed a high degree of internal tension regarding their own mobile technology use, which centered around 3 themes relevant to intervention planning: (1) Cognitive tensions (multitasking between work and children, leading to information/role overload), (2) emotional tensions (stress-inducing and reducing effects), and (3) tensions around the parent-child dyad (disrupting family routines vs serving as a tool to keep the peace). *Conclusion:* Caregivers of young children describe many internal conflicts regarding their use of mobile technology, which may be windows for intervention. Helping caregivers understand such emotional and cognitive responses may help them balance family time with technology-based demands.
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Parents shape their children's media habits from the time of infancy, through setting limits on amount and content of media use, helping children understand what they encounter on screens, and role modeling technology use.[1] Parent media use has therefore received increasing attention as a possible avenue for intervention, given its strong associations with child media use[2,3] and its potential to interrupt developmentally important parent-child conversation[4] and child play.[5] However, most previous studies of parent media use have examined television viewing only. With the ubiquity of mobile technology use (e.g., smartphones, tablets) by American families,[2,6,7] parents are now estimated to use these devices approximately 3 hours per day,[2] but few studies have examined the role these technologies play in family interactions.

In a naturalistic observational study of caregivers eating with young children in fast food restaurants,[8] Radesky et al observed more parent-child conflict and less conversation when a parent's attention was heavily absorbed in a mobile device. In videotaped parent-child eating episodes, Radesky et al[9] also found that parent mobile device use was associated with fewer verbal and nonverbal interactions with the child. These findings have been reinforced by a study examining parent mobile phone use in playgrounds, showing lower responsiveness to child bids for attention among mobile phone–using caregivers.[10] As healthy social-emotional development in young children depends on sensitive responsive parent-child interactions[11,12] in which caregivers recognize and respond contingently to child cues,[13] a deeper understanding of how parent technology use may influence parent-child dynamics is needed.

However, mobile devices are complex multimodal computers with many applications that have the potential to support the parent-child relationship. Articles in the lay press have highlighted the ability of mobile technology to improve work-life balance,[14] but such benefits have not been studied empirically. Moreover, no studies have described parents' own perspectives on this issue, which is important when planning clinical guidance or interventions aimed at family screen media usage.

Through semi-structured interviews, we explored parental explanations and perceptions about their mobile technology use and its relationship with family interactions. Novel cultural phenomena (such as rapid technological change) benefit from study through qualitative methods so that new ideas and challenges can be explored to raise hypotheses and build novel conceptual frameworks. We aimed to describe dominant themes about parent beliefs regarding their digital technology use around their children and then to distill these findings into actionable first-stage ideas for providers and researchers.

METHODS

Study Design

Using a qualitative approach, we analyzed narrative data collected from interviews with caregivers of young children. Qualitative research is an important technique to identify diverse perspectives about social phenomena and their meaning[15] and to generate relevant hypotheses on which to base further work.[16] The study was approved by the Boston University Medical Center Institutional Review Board.

Participants and Recruitment

We recruited English-speaking caregivers of young children to participate in individual or small group (2–5 participants) semi-structured interviews. As is recommended for qualitative studies,[15] we used a purposive sampling approach to recruit caregivers with diverse backgrounds potentially relevant to mobile technology use and parenting style. We recruited participants through flyers in an urban primary care practice, a local university, parenting groups, and a digital technology company. We also recruited through referral from previous participants (a common qualitative research technique termed "snowballing")[15] to increase sampling of diverse viewpoints. Eligibility criteria included being an English-speaking parent or legal guardian of a child 0 to 8 years with whom the potential participant had at least weekly contact. Informed consent was obtained before interviews commenced.

Interview Structure

The lead author performed semi-structured in-depth interviews with participants, using an open-ended interviewing structure to elicit parent perceptions of mobile device use in their family, perceived benefits and concerns, and household media rules (Table 1). At the beginning of each interview, participants were informed that the purpose of the study was to understand their experiences with mobile technology to inform pediatric guidance. Interviews were initially conducted with small groups (8 groups of 2–5 participants each), as this approach is useful for capturing interpersonal dynamics regarding novel cultural phenomena.[15] As it became apparent from focus groups that participants had much to say about their personal experiences, we then conducted individual interviews

Table 1. Focus Group and Interview Sample Questions

For each participant:

Please tell me about your family and who lives in your household, including ages and genders of the children.

What types of digital devices—such as smartphones, tablets—or computers do you have in your house? Who owns them? Who uses them?

Family use

Can you tell us about what rules you have for when and how much family members are allowed to use these devices?

Can you tell us about how you came up with those rules?

Tell us about a time that using a mobile device with your child was really helpful.

How do you want your child's doctor to talk to you about media?

Parent use

What do you mostly use your mobile device(s) for when around your children?

What types of apps do you use the most?

Please tell me about your job and whether you ever work from home.

Do you ever notice changes in your child's behavior when you are using a mobile device? If so, what happens?

What do you think about newspaper articles or blogs that criticize parents for getting too "distracted" with their phones?

Some parents have described that mobile devices allow more work-life balance, but also blur work-home boundaries—can you talk about whether you have felt this way?

Interview questions were then adapted based on themes and concerns raised in previous interviews.

with an additional 12 participants to probe more deeply into media use themes within their families. Each interview lasted approximately 1 to 2.5 hours, after which participants completed a brief demographic questionnaire and received $50 for participating.

Analyses

Focus group interviews were audiotaped, transcribed, and analyzed for prominent themes by a group of 4 investigators from different backgrounds (e.g., developmental behavioral pediatrics, medicine-pediatrics, psychology, and health services research) who received training in qualitative methods via coursework or formal instruction from the senior author. Our analysis used a grounded theory approach,[15] a common qualitative analytic method in which investigators read each transcript looking for recurring themes or ideas that naturally arise from the text, as opposed to imposing an existing theoretical framework to the data. Investigators independently coded transcripts using Dedoose qualitative software[17] and then met to compare codes and determine which were recognized by all investigators and therefore required further exploration in subsequent interviews. Disagreements about themes were resolved by discussion with an investigator not involved in initial

transcript analysis. Data collection and analysis continued until thematic saturation was achieved, i.e., when further observations yielded no or minimal new information to further elaborate existing ideas or suggest new themes. To ensure data validity, key findings were then triangulated through meetings with experts in the field (child development experts, health services researchers, technology researchers, and primary care providers) and reviewed with a subset of participants.[15]

RESULTS

We recruited 35 caregivers (22 mothers, 9 fathers, and 4 grandmothers), of which 31% were single parents, 43% were of nonwhite race/ethnicity, and 40% had completed high school or less (Table 2).

Participants consistently described their mobile technology use by invoking internal tensions, which we define as countervailing perspectives on cognitive, emotional, and dyadic processes that highlight both positive and negative aspects of parent media use.

Theme 1: Cognitive Tensions
Work-child Multitasking

With increased connectivity to work through email, videoconferencing, and electronic portals, working parents described increasing use of mobile technology at home with their children. This connectivity allowed them to be home for a greater number of hours with their young children but was accompanied by pressure to stay instantly available to be perceived as "good employees." Other parents reported fear that they would be missing out on something work related that could put them at a professional disadvantage. This had the tendency to blur work-home boundaries:

> It's the fear of being irrelevant within your professional career. I think that's often what drives me to go ahead and look at my phone the first thing I wake up, and the last thing when I go to bed. I don't want to be irrelevant in something I've worked so hard at.

—Father, 30s, technology company

This tension was often described as a discomfort trying to "toggle" between work-brain and home-brain, which require different sets of cognitive and emotional skills.

> I miss that 10 minute drive (home from work) …. Like, I prefer to keep it compartmentalized like this is home, then I go into work mode, and then I come home and then I'm back at home mode. I can't do both I just—I can't—like I'm bad at it you know. I'm irritated, I'm not getting my work done, you know I need to just like focus on what I'm doing.

—Mother, 30s, works from home for technology company

Several mothers specifically described how difficult it is to read and respond to child behavior when their mind was on their device. Given this expressed discomfort, we asked how using a mobile device differed from other types of media parents have historically used around children, such as books, television, or talking on the phone. Responses focused on how much of parents' life was now contained in and organized by their mobile device:

> I bring a magazine at times, read a book sometimes, but I don't think those are as all-encompassing as these new devices are. A book has a finite beginning and an end, where a device is unlimited. When you're reading a book, you're not bringing so much of your personal, emotional life into it ….mostly you're just being entertained, whereas maybe with the mobile thing, it's too much of your life.

—Father, 40s, technology company

Information/Role Overload

Parents described pressure to stay responsive to work and friends (i.e., on social media, texting), but they did not uniformly feel comfortable with these perceived demands or the new social norm of instant accessibility.

> With Facebook and all these other ways to access you, people expect you to be available all the time. I broke my

Table 2. Caregiver Participant Characteristics

Characteristics	n (%) or Mean (Range)
Caregiver age	35.8 (23–55)
Race/ethnicity	
White (non-Latino/Hispanic)	20 (57.1)
Black (non-Latino/Hispanic)	10 (28.6)
Latino/Hispanic	2 (5.7)
Other	3 (8.6)
Single parent	11 (31.4)
Educational attainment	
High school, GED, or less	14 (40)
Associates degree or some college	4 (11.4)
Bachelor's degree	5 (14.3)
Graduate or professional school	10 (28.6)
Occupational status	
Full-time employment	11 (31.4)
Part-time employment	10 (28.6)
Homemaker or looking for work	12 (24.3)
Relationship to child	
Mother	22 (62.9)
Father	9 (25.7)
Grandmother	4 (11.4)
Age of child, years	
0–2	16 (45.7)
3–5	22 (62.9)
6–8	16 (45.7)

phone, and I wasn't able to get one for another week, and it was the best week of my life, because I didn't have any pressure on me, because I didn't feel the need to keep in touch with people. For that week I felt relieved. I'm cooking and that's all I'm doing. We're going here, that's all I'm doing. I'm exhausted all the time, not because I'm physically moving all the time, but my brain is always working.

—Mother, 30s, urban clinic

While caregivers described feeling overloaded with the amount of information, social contact, and bids for attention from their mobile devices (e.g., notifications to check texts, emails, feed their virtual pet, try the next level in a video game, remember something on their to-do list), it was also emphasized that mobile technology is now an absolute necessity for parents, because of this very richness of information access. Thus, such information access was described both as positive and negative.

(If I lost my phone) I'd be lost because I'd have no contact with my doctors, my son's school, my son. The only other person that I have in my family is my father, and he's had a bunch of strokes and heart attacks within the last six months. And I'd just be cut off from the world basically, because I have no other form of communication. Every day, I spend a good 4, 5, maybe 6 hours on it.

—Mother, 20s, urban clinic

The whole world is in your lap, it's in your house all the time.

—Mother, 20s, urban clinic

One father emphasized that even though there are vast amounts of information available through digital technology, this information is highly tailored to our previous technology use patterns, which could make our thinking, as parents and workers, less rich and complex:

(With search engines), those results are tailored to your prior search results. So, you're not even getting an equal representation of what's actually out there. It's representative of your own patterns, increasingly narrow. I just think it's all the more important to be out there in the real world; learning things from real things, coming up with your own original thoughts about them. Even if you come up with something and it's wrong ... the point is the process.

—Father, 30s, suburban parenting group

Theme 2: Emotional Tensions Around Technology
Stress-Reducing Effects
Many working or stay-at-home mothers described enjoying the rewards of contact with work or friends as a needed escape from the stresses or boredom of child-rearing. Checking social media, email, or Internet searches could be done quickly and easily during daily routines, such as cooking or playtime. Participants often could identify which particular apps or games were their greatest stress reliever.

It kind of helps me out sometime, just to get 5 minutes of a break. Just 5 minutes, just to sit for me. Have a peace of mind. I think that's why sometimes the phones are a distraction for us (parents) also. So I think that's why sometimes I am on my phone a lot.

—Mother, 20s, urban clinic

If I've had a couple days or a long day with the kids and it feels so insular and there is that "Oh, there's an outside world." It's that feeling. There's "Oh, I'm needed, or thought of by other people outside these two small minds that might be driving me bananas." I think that's it. That's the reward of "I have a life beyond this."

—Mother, 30s, suburban parenting group

If I'm stressed, I'm more into the video games. Kind of like brings my stress down, calms me down. It gets to the point where I get tired and I want to go to sleep. It's kind of like soothing.

—Father, 30s, urban clinic

However, participants also expressed uneasiness regarding using technology as an escape or stress reliever. These conflicted feelings were not usually due to feeling judged by others about using technology around their children but rather were described as an internal "pull" felt by parents toward the expanse of possibilities or obligations they felt through their online lives.

I do feel like for me, it is my escape, but I'm not sure it's the healthiest escape, so I have conflict around that. I feel like I'm always in the process of getting back to people and they're getting back to me. It's totally exhausting, but there's a little seed of exciting in there, which is why I do it. But it's really ultimately exhausting.

—Mother, 30s, academic institution

Stress-Inducing Effects
Some parents described strong negative emotional reactions to their feelings of information overload and the tendency for them to be "sucked into" the news, social media, or whatever app they felt was most "addictive." Some low-income participants described preferring "Obama phones" (i.e., free phones provided by government agencies), which have no Internet access.

Now I try to like keep my phone away from me, because first of all, I get headaches. I'm squinting all day, and then I just—I don't know. I get like anxious by just—I feel like

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my body is like hyper or something like—like my body feel weird from just being on it playing my games.

—Mother, 20s, urban clinic

How in the world do I have six messages, 17 notifications, text messages of people who are saying, "why aren't you answering the phone?" There's just days that it builds up so much, you just want to throw your phone at a wall and let it break so you have that break.

—Mother, 20s, urban clinic

These games got me. These games, they're addictive.

—Mother, 30s, urban clinic

Social media and multiplayer games were described as a welcomed source of social support, particularly as a safer way to communicate with members of their family who they did not fully trust and wanted to keep a "filtered" view of their life. In this way, it was clear that both emotional reward and emotional strain could co-exist in parent technology use.

It keeps me in contact with my aunt and my cousins that I haven't seen since I was younger, and I finally found them on Facebook. I talk to my family members through it. Because neither one of us trusts each other enough, because of past experiences, to give our phone numbers to each other yet.

—Mother 40s, urban clinic

Me and my mom, we're not super close, but we share the common of a game on our phone … and she'll be like "Oh, I'm on this level now." I'm like "Okay, I'm on this level," so we kind of share that common interest, me and my mother, so I need that game.

—Mother, 30s, urban clinic

Theme 3: Dyadic Tensions: Technology Use and Parent-Child Relationships

When it came to technology's role in family dynamics, it was rare for participants to talk about how they used mobile devices together with their children; rather, mobile technology use was mostly described on an individual basis.

Disruption of Family Routines Versus Keeping the Peace

Because of perceptions of information overload and multitasking described above, participants described feeling more "present" with their children if they proactively put the phone away (I know that I'm a happier person if I check it less because I'm more focused, I'm more in the moment—Mother, 30s, suburban parenting group). This "presence" was more comfortable both because it was easier to focus on child needs when one's attention was not pulled in

other directions and because the child (or spouse) seemed to sense it as well.

The dynamic (when I was checking emails at dinner) was, I was half-in. If I felt the vibrate in my pocket, or I heard a chime on my phone, I was always concerned about, what is that? Finally my wife gave me a stern talking to and said this is how it makes us feel, and you need to be able to divide your work life and your personal life, and don't make that phone the thing that blurs both of those things together.

—Father, 30s, technology company

I notice with my newborn, when I don't have my phone, it's more bonding. If I'm like this (holds phone and looks at it), he's more (shows squirming motions) Like he's not as relaxed if I'm trying to be on Facebook, I'm trying to post pictures or post something on it, he's a little more upset that I'm not giving him the one-on-one attention.

—Mother, 20s, urban clinic

We're all sitting together, but I'm looking at the phone, they're not satisfied with that, because you're not actually there.

—Father, 40s, urban clinic

They see that we're treating this object as something really sacred and special. They see "Oh, mom and dad carry it everywhere. Whenever it rings or does beeps or vibrates they grab it. So, clearly it's really important."

—Mother, 30s, suburban parenting group

Parents described more attention-seeking behaviors from children when they were heavily attentive to their mobile device and sometimes noted that they would react more strongly when this occurred.

I notice my temper, I get a temper. I'm like, "Can you friggin wait?" I get mad and then I actually guilt for a minute and I'm like, Whoa, I'm getting pissed off at him because I want to make a post, like is it really that important?

—Mother, 20s, urban clinic

Technology as Peacekeeper

In contrast to these perceived intrusions onto family time, caregivers described how effective digital technology was at keeping the peace in their home. By calming down their children and creating quiet time, caregivers could use media to respond to or prevent family conflict:

Just, it's so easy to put your feet up. Just plug it in and it's over with—he's watching a DVD and I'm on my phone. It's quiet and peaceful—It's like no conflict.

—Mother, 30s, urban clinic

Sometimes what if you're broke or something and you can't have fun with them all the time and you have to stay in the house and you have to entertain them at home, you know what I mean. When we're broke, they're nagging me and I feel bad because we don't have nothing to do. So I let her be in her phone.

—Mother, 20s, urban clinic

DISCUSSION

Through qualitative analysis of in-depth interviews with a diverse group of caregivers of young children, we described the internal tensions they expressed about their own mobile technology use and how this relates to interactions with their children. Through iterative analysis, several themes around caregiver cognitive, emotional, and dyadic tensions arose, which illustrate novel perspectives on contemporary technology use in these families. Parents consistently described what one mother termed the "excitement" and "exhaustion" of trying to balance parenting and the aspects of their lives embedded in technology.

A small literature suggests that heavy parent digital technology use is associated with a decrease in verbal and nonverbal interactions with children,[8] lower parent responsiveness,[9] and possibly more parent affect dysregulation.[7] To understand the mechanisms underlying these research findings to identify actionable cognitions and behaviors, we aimed to deeply explore parent conceptions of their experiences balancing technology use with parenting. Cognitively, they described the act of multitasking between technology and children as stressful or less effective; specifically, they described how the cognitive load of doing work or accessing information via technology often makes it difficult to read and respond to children's social cues in the moment. This is consistent with laboratory-based work showing that mobile phone interruptions impair cognitive efficiency[18] and that media multitasking leads to more errors in concurrent tasks.[19] A recent study found that parents were less effective at teaching their child new words through a standardized laboratory-based task when they were interrupted by mobile phone calls (Reed, Hirsh-Pasek, and Golinkoff, in press), which suggests that such multitasking translates into less effective parenting interactions.

Participants' emotional responses to technology were another dominant theme in our study. Caregivers not only described using technology to relieve stress and "escape" the negative or boring aspects of child-rearing but also cited technology use itself as a source of stress and information overload. Compared with books, telephone calls, and other traditional distractions, mobile technology was described as much more commanding of attention due to its expansive content, parent emotional investment in this content, and its unpredictable notifications. A considerable human-computer interaction literature has examined individuals' emotional responses to technology,[20] as has a literature on the concept of "information overload" due to digital media,[21,22] but neither have been studied specifically with regard to parenting.

A primary objective of this work was to understand parents' experiences to translate these findings into actionable concepts for clinical work and future research. While a small qualitative study such as this has limitations to generalizability, it does provide a potentially useful framework by which pediatric providers can encourage parents to be self-aware of their relationships with technology, their usage patterns, and how its use affects them cognitively and emotionally. For parents who are already self-aware, providers can support them to alter their technology habits during family routines, which are important in child health and development.[23] Although technology-based self-regulation may be an important tool for many stressed parents —via social support[24] or through many novel mobile health platforms[25]—the ideal balance between this method of parent stress relief versus displacement of parent-child interaction is unknown. However, given how commonly it was described by our participants, it could be a focal point for parent-provider discussion about healthy ways to relieve stress.

As has been suggested by other publications, mobile technology developers might consider the relevance of disengagement-based design,[9] making it easier for parents to create boundaries between their digital lives and their time with children. The "attention economy" has been a strong driver of digital product development,[26,27] but many of our participants expressed discomfort with this pull of their attention into their devices and felt they wanted to be the locus of control of any engagement or disengagement. However, volitional disengagement is difficult due to the tendency of such technologies to speed up the pace and expectations for their usage to work from home[28] and adults' own ambiguous feelings about the decision to unplug.[29,30] Therefore, more collaboration is needed between technology developers and parenting researchers and advocates, so that good design can help make this balance easier for parents.

This study has several implications for future research. Future laboratory-based and observational studies will need to consider many aspects of parent interaction with digital media, including attention, cognitive load, emotion regulation, and physiologic arousal. For example, videotaped parent-child interactions during media use can be coded for parent affective changes, either positive or negative, and how these relate to changes in the parent-child cascade. It will be important to examine how such responses vary by media content (i.e., as measured through app-logging software) and participant characteristics such as personality, stress level, employment demands, and social support. Finally, promising digital supports for parents to create more technology-life balance are under development[31] and should be tested in randomized trials.

While our study sampled a diverse population to obtain a variety of views on this novel topic, it was limited by its sampling from distinct organizations, which may have limited the scope of perspectives presented. Based on the sample size, we were not able to use mixed-method approaches to explore whether parent perspectives varied by characteristics such as gender, age, or household composition. To craft relevant guidance, it is important to understand whether mothers and fathers with different levels of education, occupational status, culture, parenting style, or with children of varying developmental behavioral abilities use and perceive mobile technology differently, which our study did not examine. However, the strength of these interviews from a diverse group of parents is that they provide a rich description of parent experiences around digital media, which provide actionable points of potential clinical, research-based, and design-oriented intervention.

CONCLUSION

Rapid changes in technology have transformed the ways parents use digital media in the home and when around their children, with enormous potential for greater work-life balance and parent social connection or displacement of important family time. This study has attempted to examine how parents experience these changes and the tensions they produce, with the goal of informing more relevant clinical guidance and research frameworks. While many of the concepts identified in this study are not novel to the mobile communication field, our findings highlight how established concepts about adults' relationships with technology can be applied to parenting-specific behaviors. As providers working with children and their parents encounter more mobile technology use during clinic visits, it may be worthwhile to ask parents to reflect on their own media use, how they react cognitively and emotionally to different media, and whether they carve out unplugged time for themselves or their children.

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Book Review

Review of Attachment Theory and Research: New Directions and Emerging Themes

Jeffry A. Simpson and W. Steven Rholes, Guilford Press, New York, NY, 2015, 452 pp, $55.25.

Attachment theory and research has come a *very* long way since Bowlby's seminal papers from the 1970s, the Adult Attachment Interview, and Ainsworth's iconic Strange Situation experiment. Readers seeking a "greatest hits" primer or introductory text on these topics will not find them here, except perhaps as the briefest of nods to early history. Instead, Simpson and Rholes have assembled a rich collection of cutting-edge behavioral genetics, emotional neuroscience, and quantitative psychology research, all in the service of answering questions about the mechanisms and trajectories of attachment. These 15 chapters go far beyond the typologies of secure, anxious, and avoidant that one learns in undergraduate psychology courses, and instead describe, for example, how attachment influences HPA axis activity and how the best-fitting structural equation model relating early attachment to adult relationship functioning is a developmental cascade rather than a linear progression.

This is a book first for brain, mind, and behavior researchers seeking to develop innovative hypotheses, but the intrepid scientist-practitioner and clinician-scholar will find much to appreciate. Examples include Ein-Dor and Doron's chapter describing their transdiagnostic model of attachment as a precursor to externalizing and internalizing disorders; Diamond's chapter on the relationship between the stress response and attachment; Karantzas and Simpson's chapter on the application of attachment theory to aged care in conditions such as Alzheimer's Dementia; and Pietromonaco and colleagues' extension of the HPA-attachment relationship into domains reminiscent of research on toxic stress and the Adverse Childhood Experiences study. Mikulincer and Shaver, two of the attachment field's most influential and prolific researchers, offer an inspiring chapter on the topic of "boosting attachment security in adulthood" by priming security-enhancing mental representations.

The attachment field has deep roots in the study of romantic relationships, and 5 of the 15 chapters address this topic from a variety of perspectives. To say the least, their applicability to developmental-behavioral pediatric practice may not be readily apparent. Deeper reading, however, will prove fruitful, especially Zayas, Merrill, and Hazan's chapter on how the seeking of sexual partners seems to be mediated by the dopaminergic reward system (thinking of our adolescent patients with vattention deficit hyperactivity disorder), whereas oxytocin and endogenous opioids mediate whether sexual encounters and other types of social interaction will also lead to deep and enduring relational bonds (thinking, perhaps, of our patients with autism spectrum disorder). With its life-span perspective, this book can help to answer questions about how our neurodevelopmentally challenged pediatric patients might grow up and relate to future life partners.

Less compelling for this reviewer, and for readers seeking to enrich their clinical practice, were 2 theoretical chapters on the application of attachment research, as it has been traditionally performed in the Adult Attachment Interview, to understanding parenting style and performance in organizational settings. That said, the pure academic psychology researcher will admire these chapters' excellent writing and thorough exploration of themes and supporting evidence.

Attachment Theory and Research: New Directions and Emerging Themes is a "must-read" for academic psychologists and neuroscientists at all stages of training, but clinicians working with patients with neurodevelopmental, trauma and stressor related, and personality disorders will also find some "hidden gems" to aid them in their work.

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