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DOI

[10.4324/9781315203713-13](https://doi.org/10.4324/9781315203713-13)

Publication date

2019

Document Version

Final published version

Published in

Toddlers, Parents, and Culture

License

Article 25fa Dutch Copyright Act

[Link to publication](#)

Citation for published version (APA):

Benga, O., Susa-Erdogan, G., Beijers, R., Majdandžić, M., & Casalin, S. (2019). Play/Activities, Temperament and behavior problems. In M. A. Gartstein, & S. P. Putnam (Eds.), *Toddlers, Parents, and Culture: Findings from the Joint Effort Toddler Temperament Consortium* (pp. 125-137). Routledge. <https://doi.org/10.4324/9781315203713-13>

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13

PLAY/ACTIVITIES, TEMPERAMENT, AND BEHAVIOR PROBLEMS

*Oana Benga, Georgiana Susa-Erdogan,
Roseriet Beijers, Mirjana Majdandžić,
and Sara Casalin*

As a critical component of the developmental niche, daily activities reflect the cultural organization of children's lives (Harkness, Mavridis, Liu, & Super, 2015) and are therefore expected to affect child development. The Daily Activities Questionnaire (DAQ) allows for a multifaceted assessment of parental practices with toddlers, of which the domains of play (including intensity and purpose), engagement with parent and media exposure will be considered, along with temperament and emotional/behavior problems, across the 14 JETTC countries (see Figure 13.1).

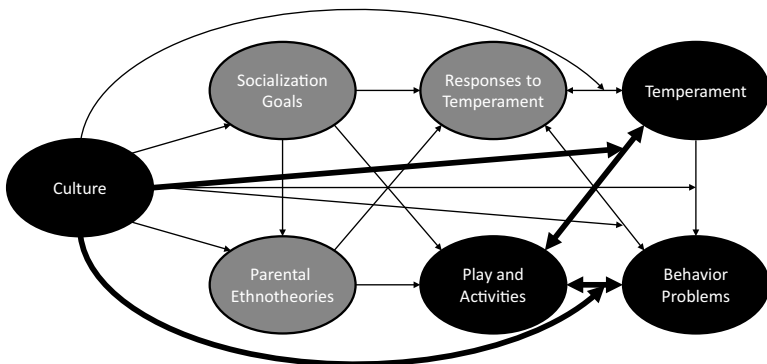


FIGURE 13.1 Activities and child outcomes in the JETTC Conceptual Model

Play is generally considered central for optimal child development in western families, while South American/Asian caregivers prioritize academic training. Additionally, parents from western societies are active play partners, whereas those from other societies often perceive this role as “outside their job description” (Bornstein, 2007). Thus, existing literature, along with evidence from Chapters 7 and 11, suggest that in interdependent cultures, play is not a goal in itself, but an instrument for early instilment of values and responsibilities, including academic success. On the other hand, in independent countries, play—in particular highly stimulating, exploratory play—is encouraged, and the parent is significantly involved. We expect such cultural variations to influence temperament and adjustment.

Relationships of play with temperament were explored in a few studies, mostly from the perspective of child propensities to engage in certain types of play (e.g., with peers, Spinrad et al., 2004). In this book, and elsewhere in the literature, an opposite direction of effects is considered, asking questions regarding play contributing to temperament development. For example, Sharp et al. (2017) showed a negative correlation (for boys only) of outdoor play with Negative Affectivity (NEG) and a positive correlation with Surgency (SUR). Relations between play and Effortful Control (EFF) are less clear, yet there is some evidence that (pretend) play may foster child self-regulation (Lillard, 2017). Findings concerning early parent-child play appear consistent with this pattern of results, with caregiver support of interest in play exerting a longterm positive influence on cognitive and social independence, supported by self-regulation (Landry, Smith, Swank, & Miller-Loncar, 2000). Comparative longitudinal studies show an earlier emergence of self-regulation in toddlers, and superior abilities at age 4, for interdependent rather than independent families, with the former characterized by a more directive, controlling mother-infant interaction style (Lamm et al., 2017). Better performance on self-regulatory tasks by Korean (Oh & Lewis, 2008) and Chinese preschool children (Sabbagh, Xu, Carlson, Moses, & Lee, 2006) aligns with the latter data.

Regarding the relation between play and emotional/behavior adjustment, an extensive review on high-intensity outdoor play (including rough-and-tumble play) highlighted its positive effects on social competence (Brussoni et al., 2015). Negative correlations between father-child rough-and-tumble play and child externalizing problems (EXT) were also reported (Anderson, Qiu, & Wheeler, 2017; St George, Fletcher, & Palazzi, 2017). Ahnert et al. (2017) showed that quality of

father-child physical and pretend play negatively correlated with internalizing problems (INT) of young children.

Media exposure (via TV or other electronic devices) is another important aspect of daily activities, yet links between media and temperament have been largely unexplored. Longitudinal positive correlations between TV watching and NEG and SUR were recently reported throughout the first 18 months (Thompson, Adair, & Bentley, 2017). Poor self-regulation and executive functioning were correlated with media use, and more detrimental effects were noted for infancy exposure (Kostyrka-Allchorne, Cooper, & Simpson, 2017). Similarly, relations between TV and emotional/behavior adjustment suggest withdrawn behavior, inattention, and EXT are consequences of increased TV exposure, particularly in early childhood (Özmert, Toyran, & Yurdakök, 2002; Tremblay et al., 2011; Verlinden et al., 2012). On the other hand, limited research concerning other media (e.g., computer) exposure suggests positive relations with self-regulation (Huber, Yeates, Meyer, Fleckhammer, & Kaufman, 2018).

We hypothesized relations between play and temperament: play with high-intensity toys and play for entertainment to be related with higher SUR; play with purpose (that reduces child's degrees of freedom) to be associated with NEG, at least in individualist countries; low-intensity toy play (via books, role-playing, learning and cuddly toys) to be related to high EFF. We also anticipated all types of play would be associated with low INT and EXT. Second, negative associations were anticipated for TV exposure and EFF, along with positive relations for NEG, SUR, INT, and EXT. The relations were expected to be stronger in more collectivist cultures, given evidence from Chapter 7. All other analyses should be considered exploratory.

Results

Initial correlations calculated using the entire sample of individual families, which conflate within-country and between-country differences, are shown in Table 13.1. Play with low-intensity toys was linked to high EFF and low behavior problems of all types. Play with high-intensity toys was associated with high SUR, high EFF, and low INT. Play with Purpose was linked to high NEG, high EFF, and low EXT. Play for entertainment only was associated with high NEG and SUR. Engagement with Parent was associated with high SUR and EFF; and low NEG, INT and total problems. More time watching TV was associated with high

TABLE 13.1 Correlations between temperament/behavior problems and daily activities for the entire sample

	<i>Low-Int. Toy Play</i>	<i>High-Int. Toy Play</i>	<i>Play with Purp.</i>	<i>Play for Ent.</i>	<i>Activities with Parent</i>	<i>TV</i>	<i>Elec.</i>
Negative Affectivity	-0.04	-0.05	0.09**	0.10**	-0.12**	0.16**	0.06
Surgency	0.04	0.14**	0.04	0.08*	0.24**	0.05	0.07#
Effortful Control	0.25**	0.09**	0.20**	0.01	0.22**	-0.06#	0.01
Internalizing	-0.10**	-0.11**	0.01	-0.03	-0.14**	0.20**	0.04
Externalizing	-0.14**	-0.04	-0.09**	-0.03	-0.04	0.16**	0.09*
Total problems	-0.13**	-0.07#	-0.05	-0.02	-0.11**	0.20**	0.07#

Note: Low-Int. Toy Play = play with Low-Intensity toys; High-Int. Toy Play = Play with High-Intensity toys; Play with Purp. = Play with Purpose; Play for Ent. = Play solely for Entertainment; Activities with Parent = Activities with Parent; TV = time watching television; Elec. = time with computer or other electronics. $n_s = 841$ for temperament, 836 for behavior problems. ** $p < 0.01$, * $p < 0.05$, # $p < 0.10$

TABLE 13.2 Between-country correlations between countries' marginal means of temperament/behavior problems and daily activities

	<i>Low-Int. Toy Play</i>	<i>High-Int. Toy Play</i>	<i>Play with Purp.</i>	<i>Play for Ent.</i>	<i>Activities with Parent</i>	<i>TV</i>	<i>Elec.</i>
Negative Affectivity	-0.39	-0.11	0.27	0.24	-0.45	0.17	-0.11
Surgency	0.40	0.07	-0.38	-0.12	0.49#	-0.23	0.31
Effortful Control	0.48#	0.32	0.07	-0.13	0.33	0.02	0.49#

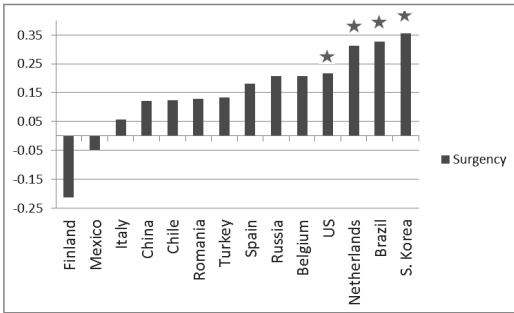
Internalizing	-0.36	0.05	0.57*	0.03	-0.15	0.49 [#]	-0.13
Externalizing	0.04	0.14	0.01	-0.29	0.32	0.43	0.23
Total problems	-0.19	0.10	0.35	-0.12	0.04	0.55*	0.07

Note: Low-Int. Toy Play = Play with Low-Intensity toys; High-Int. Toy Play = Play with High-Intensity toys; Play with Purp. = Play with Purpose; Play for Ent. = Play solely for Entertainment; Activities with Parent = Activities with Parent; TV = time watching television; Elec. = time with computer or other electronics. $N = 14$, $\star p < 0.05$, $\# p < 0.10$

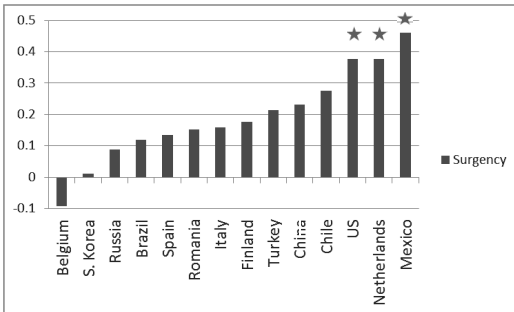
TABLE 13.3 Average within-country correlations between temperament/behavior problems and daily activities

	Low-Int. Toy Play	High-Int. Toy Play	Play with Purp.	Play for Ent.	Activities with Parent	TV	Elec.
Negative Affectivity	0.00 ¹	-0.03 ¹	0.05 ⁰	0.06 ⁰	-0.05 ¹	0.14 ²	0.09 ²
Surgency	0.00 ⁰	0.15 ⁴	0.08 ²	0.12 ¹	0.19 ³	0.07 ²	0.06 ²
Effortful Control	0.22 ⁷	0.09 ¹	0.21 ⁶	0.04 ⁴	0.21 ⁶	-0.06 ⁰	-0.03 ³
Internalizing	-0.06 ¹	-0.08 ³	-0.08 ¹	-0.03 ¹	-0.11 ¹	0.16 ⁵	0.09 ²
Externalizing	-0.14 ³	-0.04 ⁰	-0.11 ³	-0.01 ¹	-0.08 ²	0.13 ²	0.10 ²
Total problems	-0.11 ¹	-0.05 ¹	-0.12 ³	-0.01 ¹	-0.10 ³	0.17 ³	0.09 ²

Note: Low-Int. Toy Play = Play with Low-Intensity toys; High-Int. Toy Play = Play with High-Intensity toys; Play with Purp. = Play with Purpose; Play for Ent. = Play solely for Entertainment; Activities with Parent = Activities with Parent; TV = time watching television; Elec. = time with computer or other electronics. Superscripts indicate the number of countries (out of 14) for which the correlation was significant to $p < 0.05$



Play with High-Intensity Toys predicting Surgency



Activities with Parent predicting Surgency

FIGURE 13.2 Activities-Surgency correlations for JETTC countries

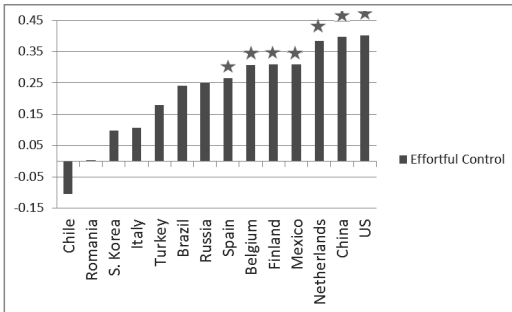
* indicates significant correlation

NEG and all behavior problems variables. Time on computers and other electronics was associated with high EXT.

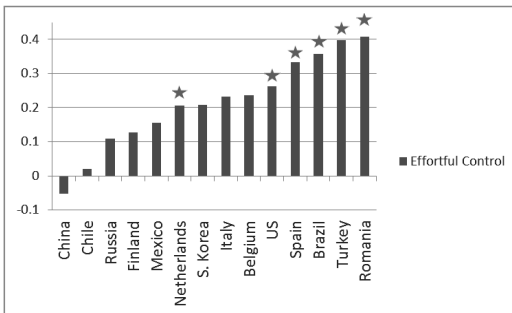
No significant relations between daily activities and child temperament were noted in between-country analyses (Table 13.2). Marginal associations emerged, such that countries in which children scored higher on SUR had mothers who engaged their child in activities more, and countries in which children scored higher on EFF reported more low-intensity toy play and time on electronic devices. Countries reporting that their children’s play was intended to be purposeful had higher toddler INT, and children showed higher total problems in cultures with more extensive TV exposure.

The average within-culture correlations are shown in Table 13.3. In the interest of brevity, we only describe relations that were significant in three or more countries. Regarding temperament, high SUR was associated with high levels of High-Intensity Toy Play and Engagement with Parent in multiple countries (Figure 13.2). EFF was consistently

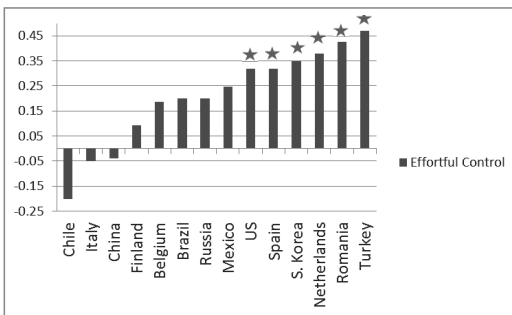
associated with more Low-Intensity Toy Play, Play with Purpose, and Engagement with Parent (Figure 13.3). Inconsistent findings were reported with respect to play being solely for entertainment, which was negatively correlated with EFF in Russia and Chile ($r_s = -0.35$ and -0.31), and positively correlated with EFF in Brazil and Turkey ($r_s = 0.34$ and 0.30). Findings for computer use were also inconsistent, demonstrating



Play with Low-Intensity Toys predicting Effortful Control



Play with Purpose predicting Effortful Control



Engagement with Parent predicting Effortful Control

FIGURE 13.3 Activities–Effortful Control correlations for JETTC countries

* indicates significant correlation

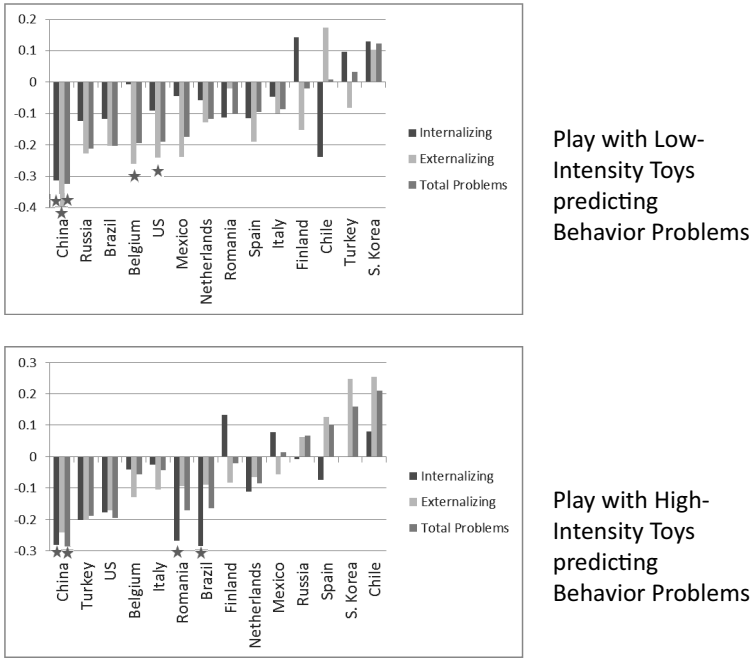


FIGURE 13.4 Intensity play-behavior problem correlations for JETTC countries

* indicates significant correlation

a positive correlation with EFF in Mexico ($r = 0.27$), and negative correlations in Chile and Finland ($r_s = -0.34$ and -0.27).

Regarding behavior problems, findings that were consistent across several countries included Low-Intensity Toy Play predicting low EXT; High-Intensity Toy Play predicting low INT; TV use predicting INT and total behavior problems; and Play with Purpose predicting low total behavior problems (Figures 13.4 and 13.5). Inconsistency was observed for Activities with Parent, which was associated with high behavior problems in Chile ($r = 0.30$), but with low behavior problems in Turkey and the Netherlands ($r_s = -0.31$ and -0.23).

Discussion

Analyses conducted for the entire sample revealed that correlations of play with temperamental reactivity were in line with our predictions, as High-Intensity Toy Play and Play for Entertainment were associated

with higher SUR, whereas Play with Purpose was linked with higher levels of NEG. In addition, Play for Entertainment was also associated with higher levels of NEG, whereas child's Activities with Parent was related to higher SUR and lower NEG. Regarding self-regulation, all types of play (except Play for Entertainment) and Activities with Parent were related to higher EFF. This pattern of results suggests that parents across the JETTC cultures make use of play and other parent-child joint daily activities to support the development of self-regulation in their toddlers.

Between and within-country analyses were informative in their own right. Between-country correlational analyses revealed that countries reporting more frequent child Play with Purpose had children with higher INT. In addition, cultures with greater average duration of TV watching exhibited higher total child behavior problems. The within-country analyses revealed a consistent association between higher levels of Low-Intensity Toy Play with higher levels of EFF (US, China,

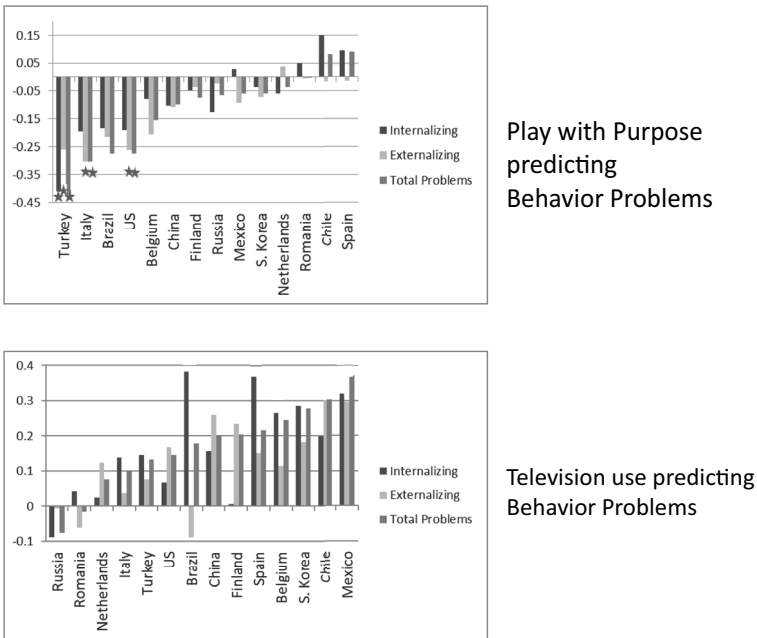


FIGURE 13.5 Activities-behavior problem correlations for JETTC countries

* indicates significant correlation

the Netherlands, Mexico, Finland, Belgium, Spain, and Russia), indicating that the beneficial impact of low-intensity toy play was largely invariant across JETTC cultures. In addition, children high in EFF may enjoy quiet activities of low-intensity toy play that provide a good fit for their advanced attentional abilities.

Inconsistent findings were reported with respect to Play for Entertainment, which was negatively correlated with EFF in Russia and Chile and positively correlated with EFF in Brazil and Turkey. The nature of parent-child interactions during play for entertainment can be different in these countries, due to variability in corresponding socialization values and goals. For example, in more collectivistic cultures such as Chile (in our JETTC Chile scored highest on Collectivism, after China), caregivers tend to be more interested in social harmony and respect for rules, and less likely to encourage strong positive emotions, such as excitement, that typically emerge during play for entertainment elsewhere (Haight, Wang, Fung, Williams, & Mintz, 1999; O'Reilly & Bornstein, 1993). On the other hand, it might be that parents from more collectivistic cultures who perceive their children as lower in EFF, prefer to engage more in play for entertainment, in order to soothe these children, who may be perceived as lower in self-regulation. Positive associations observed between play for entertainment and EFF in Turkey and Brazil require additional research for a conclusive interpretation. It may be, for example, that parents who engage in more entertainment in play with their toddlers in Turkey are more autonomy-oriented, and possibly more actively involved in encouraging child self-expression (Haight, Parke, & Black, 1997).

High levels of Low-Intensity Toy Play, High-Intensity Toy Play, and Play with Purpose were associated with lower INT and EXT, confirming our hypotheses, as was engagement with parent. This pattern of results suggests that, for toddlers around the world, participation in age-appropriate play, along with parental engagement in joint activities, are protective factors for early emotional/behavioral problems. The centrality of play for healthy development has been frequently emphasized, along with its privileged status as an ideal context for parents' full engagement with their children (Ginsburg, 2007). Results for Activities with Parent were more variable, showing an association with high behavior problems in Chile. An increase in child adjustment problems might be explained by the collectivistic orientation of Chilean parents, who likely hold more authoritarian attitudes, emphasizing child obedience, in contrast to

prevalent attitudes of Turkish and Dutch parents, likely fostering agency and autonomy in their children (Schaefer & Edgerton, 1985). More engagement might thus provide Chilean children with more instances of problematic (e.g., intrusive) interactions. This interpretation can be further supported by our data regarding Activities with Parent and EFF, as greater engagement with parent was associated with higher EFF for Turkish and Dutch children, but lower EFF for Chilean children, in contrast to Lamm et al. (2017), indicating the need for further studies.

Relations between TV viewing, INT and EXT, were consistent across between- and within-country analyses, and in line with our predictions. In particular, countries with greater TV exposure showed higher total problems (Brazil, China, Russia, Chile, Mexico, and Turkey), and individual children who watched TV more had higher INT, EXT, and total behavior problems, in Mexico, Chile, South Korea, Belgium, Spain, and Brazil. These results are consistent with previous findings (e.g., Tremblay et al., 2011; Verlinden et al., 2012); however, we did not assess media content (e.g., violent programs, non-educational programs), which should be examined in the future.

Exploratory analyses regarding the use of computer and other electronics produced inconsistent results. In considering EFF, associations were positive for Mexico, and negative in Chile and Finland. Research regarding the impact of screen media has lagged considerably behind its rate of adoption; however, Radesky, Schumacher and Zuckerman (2015) noted the use of screen media as a common behavior regulation tool: what the industry terms a “shut-up toy.” Unfortunately, we did not obtain data on parental intentions regarding screen media use with toddlers, and these should be collected going forward.

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