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Sequential Associations between Caregiver Talk and Child Play in Autism Spectrum Disorder and Typical Development

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Abstract

This study examined sequential associations between child play and caregiver talk in 98 caregiver-child dyads ($M_{\text{mental age}} = 14$ months). Fifty dyads included a child with autism spectrum disorder (ASD). Analyses revealed sequential associations between child play and caregiver follow-in utterances (utterances related to the child's attentional focus) were stronger in the ASD as compared to the typically developing (TD) group. Follow-in utterances were more likely to elicit functional play than caregiver-focused utterances, and more so in the ASD group. Across groups, follow-in directives were more likely to elicit functional play than follow-in comments. These findings have important implications for research involving caregiver-child play as an early intervention context for children with ASD.

Keywords

autism spectrum disorder; play; caregiver talk; responsivity; sequential analysis

Interactions are often comprised of organized sequences, where turns at talk project and constrain an interaction partner's subsequent turns at talk (Sacks, Schegloff, & Jefferson,

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1974). Interactive moves can make particular next moves relevant; greetings are followed by return greetings and questions are followed by answers (Schegloff, 2007). While these contingencies are well-studied in adult conversation, less is known about interactions involving young children with autism spectrum disorder (ASD). This is especially true for those who have limited language and rely on toy-play to mediate sustained engagement.

The purpose of this project is to compare sequential associations between different types of adult talk-child play sequences, and between children with ASD and typical development (TD). Non-sequential metrics of association, such as Pearson's r , can be used to indicate the extent to which frequencies of two behavior categories rise or fall together. However, these metrics ignore the temporal ordering of behavior as interactions unfold. In contrast, sequential associations can index the probability that a behavior category produced by one individual will occur within a pre-specified time window after a behavior category produced by another individual, controlling for each behavior's base rate (Yoder & Symons, 2010). We use 'elicit' to mean a positive sequential association, i.e., the probability that behavior Y follows behavior X more than expected by chance. Similarly, we use 'inhibit' to mean a negative sequential association, i.e., the probability that behavior Y follows behavior X less than expected by chance.

Responsive Caregiver Talk

Caregivers show responsivity when interacting with their children by adapting their play, attentiveness, and paralinguistic cues to the child's developmental level (Damast, Tamis-LeMonda, & Bornstein, 1996; Fusaro, Vallotton, & Harris, 2014). In children with ASD, talk is a particularly salient modality for displaying responsivity, as adult talk reflecting the child's interests is positively associated with later developmental outcomes (McDuffie & Yoder, 2010; Siller & Sigman, 2002; 2008). We focus on two main types of caregiver talk; *follow-in* utterances which relate to the child's attentional focus, and *caregiver-focused* utterances which relate to the caregiver's--but not the child's--attentional focus. Follow-in utterances can be divided into *follow-in directives*; prompting the child to do something different with a toy the child is already playing with, and *follow-in comments*; simply describing the state of affairs regarding the toy the child is already playing with.

In children with ASD, follow-in utterances better predict later language than other types of caregiver talk (McDuffie, & Yoder, 2010). Possibly, talk about the child's attentional focus better accommodates the difficulties in shifting attention exhibited by many children with ASD. Further, following the child's lead may increase the child's motivation for attending to the caregiver during play (Schriebman et al., 2015). One of few sequential analysis studies on this topic supports this assumption. Caregiver cues consistent with the child's attentional focus were more likely to support attention to toys than caregiver cues attempting to redirect the child (Brigham, Yoder, Jarzynka, & Tapp, 2010). It is not yet known whether responsive caregiver talk can move the child beyond attention to toys, and elicit toy *play*.

Child Play

Play is an important context for early social and cognitive development, and has been incorporated into early intervention programming for children with ASD (Kasari, Freeman, & Paparella, 2006; Lifter & Bloom, 1998). Through play, children develop an understanding of the world, and even minimally-verbal children can express their knowledge and interact with others via object play (Copple & Bredekamp, 2009). We focus on the preschool period in children with ASD who are still developing play skills and exhibit cognitive delays. Young children with ASD, who lag behind TD children in the developmental progression of play, generally engage in play that is exploratory or functional in nature (Belsky & Most, 1981; Chawarska, 2007; Jarrold, 2003; Williams, Reddy, & Costall, 2001). *Exploratory* play involves sensory examination of objects, without regard to the object's canonical use. *Functional* play is developmentally more complex, and involves using toys in socio-culturally conventional ways. Beyond this period children engage in *symbolic* play, where objects are used to stand for other objects, or absent objects are imagined to be present.

Caregiver Talk and Child Play as Contingent Interactional Resources

Understanding how caregiver talk and child play sequentially unfold within play interactions for children with ASD as compared to TD children could inform research on maximizing play as a means to support development. In the early phases of development, caregiver-child play often includes caregiver talk about play activities, which may prompt and scaffold children to play at their developmentally highest level (Bruner, 1978; McDuffie & Yoder, 2010; Siller & Sigman, 2008; Vygotsky, 1978). Likewise, developmentally advanced play may elicit yet more caregiver talk related to the play experience, in a mutually reinforcing manner (Alessandri, 1992). In contrast, if the child does not often interact with objects, the caregiver may have difficulty formulating topics for talk. This reduces opportunities for providing scaffolding that may contribute to higher-level play.

Difficulties in toy play may contribute to social-communication deficits inherent in ASD by limiting language-rich aspects of caregiver-child play interactions (Carter, Davis, Klin, & Volkmar, 2005; Toth, Munson, Meltzoff, & Dawson, 2006). Children with ASD are less likely than TD children to jointly engage with caregivers and toys, wherein they shift attention between the toy and the caregiver in order to manage the interaction (Adamson, Bakeman, Deckner, & Ronski, 2009). This is concerning, as joint engagement that includes responsive caregiver talk is developmentally important for children with ASD and TD children alike (Adamson et al, 2009; Bakeman & Adamson, 1984; Bottema-Beutel, Yoder, Hochman, & Watson, 2014). For example, joint engagement episodes that include follow-in utterances are predictive of later receptive language in children with ASD (Bottema-Beutel et al., 2014). Contingencies between caregiver talk and child play may allow for extended stretches of joint engagement, and language supporting children's focus on toys may be the mechanism by which this occurs.

Research Questions and Hypotheses

Each of our three research questions (RQs) addresses theoretically motivated comparisons between sequential associations involving different sets of behaviors. First, we examined whether functional play was more likely to elicit caregiver follow-in utterances than exploratory play. Because functional play involves shared meanings around the affordances of toys, it may signal to the caregiver that there is an opportunity for interaction around the play experience. Conversely, exploratory play may appear idiosyncratic and may not indicate an opportunity for interaction.

Second, we examined whether follow-in utterances were more likely to elicit functional play than caregiver-focused utterances. Caregivers' talk about what the child is doing may scaffold play by facilitating their sustained attention to toys. This sequential association may be more pronounced in children with ASD, who may be more dependent on caregiver scaffolding of attention than TD children.

Because directives explicitly give children information about possible ways they might play with toys, follow-in directives might facilitate functional play more than follow-in comments. This may be more pronounced in children with ASD as compared to TD, since they may need more specific input on what to do with toys to play at their highest level. In contrast, TD children may engage in higher-level play regardless of whether they receive input on how to play with toys.

Method

Participants

We used a subset of data from a larger project examining language development in children with ASD (Bottema-Beutel et al., 2014; Bottema-Beutel et al., in review; Woynaroski, Yoder, & Watson, 2016; Woynaroski et al., 2016; Yoder, Watson, & Lambert, 2015). Children in the ASD group had a clinical diagnosis of autism or pervasive developmental delay-not otherwise specified (PDD-NOS). All diagnoses were confirmed via research-reliable administration of the Autism Diagnostic Observation Schedule (ADOS; Lord et al., 2000). Children with co-morbid conditions were excluded. We also used data collected later from a group of TD toddlers screened for prior evidence or parental suspicion of developmental delay and matched on mental age to the ASD sample. All data were collected between August 2008 and November 2015.

Ninety-eight children participated; 50 children with ASD (7 girls) and 48 children with TD (22 girls). Mean chronological age (CA) was 39.6 months ($SD = 7.21$) and 14.22 months ($SD = 4.71$) in the ASD group and TD group, respectively. At study entry, the mean mental age (MA) was 13.54 months ($SD = 4.33$) in the ASD group, and 13.86 months ($SD = 4.30$) in the TD group. Participants were recruited from the northeastern and southern United States between 2009 and 2015. All reported English as their home language, and the sample was 73% White/Caucasian, 12% Black/African American, 4% Asian, 1% American Indian/Alaska Native, and 6% Mixed Race. For primary caregivers, 3% did not have a high school diploma, 14% had a high school diploma, 16% had 1–2 years of college, 33% had 3–4 years

of college, and 31% had a graduate degree. Prior to assessments, caregivers provided informed consent.

Procedures

Parent-child Free Play Session (PCFP)—Children were invited to play in a 3 m × 3 m room with a standard set of toys. The set included toys that afforded exploratory, functional, and symbolic play (e.g., nesting blocks, toy knife and fruit, and a doll and bottle). After a brief warm-up period, caregivers and children were asked to play as they normally would. The researcher left the room, offering no further input. The session lasted 15 min, and was video recorded. Caregiver talk and child play behaviors were coded from these videos.

Mullen Scales of Early Learning (MSEL)—The MSEL is a researcher administered test of MA, which is derived by averaging across four subscales; fine motor, visual perception, receptive language, and expressive language. The MSEL was administered four months prior to the PCFP in the ASD group, due to the study design from which this dataset was drawn. However, the MSEL procedure and PCFP were administered concurrently in the TD group. Because of this difference, two *t*-tests were conducted to determine whether the two groups were adequately matched on MA. The first used MSEL scores without any correction. The second used an ‘adjusted MA’ to account for growth during the 4 month lag, calculated as follows: $(MA/CA)*4 + MA$. This yielded an adjusted MA of 15.06 months. Both *t*-tests failed to detect significant differences between groups ($p = .71$ and $.25$, respectively).

Coding and Reliability

Videos of PCFP sessions were coded using partial-interval sampling with 5s intervals. Coding was completed in two rounds; one for parent talk and one for child play. Definitions and examples of codes can be found in the Supporting Information. When an interval did not contain an instance of any of the six coded behavior types, it was left empty but was included in the analysis. Coders overlapped on 20% of videos to calculate inter-rater reliability. Individual ICCs from two-way random effects models ranged from .73 to .95 for play and talk codes, and from .62 to .90 for indices of sequential association used in this study (i.e., the risk difference, explained below), for the behavior sequences of interest (see Supporting Information for full list of ICCs).

Statistical Analysis Plan

Group Differences between Single Child Play and Caregiver Talk Codes—

Group differences in proportions of child play and caregiver talk categories were first analyzed with MANOVAs. When group effects were significant, each play and talk category was analyzed with separate one-way ANOVAs.

Computing Risk Differences—To quantify sequential associations, we used the *risk difference* index (Higgins & Green, 2011) which has been shown to quantify contingencies between two behaviors independent of the chance sequencing of events. See Lloyd, Kennedy, & Yoder (2013) for rationale for selecting the risk difference over other options. Risk differences were computed for each behavior sequence of interest coded from the PCFP

session using an interval lag-1 method. In this approach, adjacent intervals from 2 behavior streams represent the tallied unit. Each pair of intervals was tallied into one of four cells in a 2×2 contingency table, depending on the presence or absence of the target behaviors and their sequencing (see Supporting Information for illustrations of this process). Risk differences range from -1 to 1 , with positive values indicating Behavior Y was more likely given Behavior X (relative to its absence), and negative values indicating Behavior Y was less likely given Behavior X (relative to its absence).

Effects of Group and Sequence Type on the Index of Sequential Association (Risk Difference)—To test differences in the strength of sequential associations, we used mixed-effects models with the risk difference as the outcome variable, individuals modeled as a random effect, and group, sequence type, and CA modeled as fixed effects. Mixed-effects models account for the nesting of sequence types within individuals, and are generally preferred over the more widely-used within-subjects ANOVA as they rely on fewer assumptions about the data structure (Wang & Goonewardene, 2004). CA was entered as a control variable in each model to rule out this potential confound.

Results

Preliminary Analyses: Base Rates of Child Play and Caregiver Talk Variables

MANOVAs for each set of play and talk codes indicated a significant effect of group, $F(3, 94) = 5.64, p < .001$, Wilks' $\Lambda = 0.85$ for child play, and $F(3, 94) = 4.37, p < .001$, Wilks' $\Lambda = 0.88$ for caregiver talk. Follow-up one-way ANOVAs indicated that the proportion of intervals with exploratory play was higher in the TD group ($F[1, 96] = 10.86, p = .001$) with a medium effect size, and the proportion of intervals with functional play was higher in the ASD group with a large effect size ($F[1, 96] = 16.55, p = .0001$). Symbolic play was infrequent ($M_{\text{symbolic}} < 2$ intervals/session), and did not differ across groups ($F[1, 96] = .18, p = .68$). The proportion of intervals with follow-in comments was higher in the TD group, and the proportion of intervals with follow-in directives was higher in the ASD group, both with medium effect sizes. The proportion of intervals with caregiver-focused utterances did not differ between groups. The Holm procedure was used to protect against family-wise error, computed on each group of tests. Significant differences maintained after this correction. See Supporting Information for descriptive statistics and figures depicting ANOVA results.

Main Analyses: Sequential Variables

Table 1 gives descriptive statistics for sequential associations of interest.

RQ1: Is functional play → caregiver FI utterances greater than exploratory play → Caregiver FI utterances, and more so for ASD as compared to TD children?—Results did not confirm our prediction. Instead, there was a main effect of group, but no effect of sequence type and no interaction effect. Sequential associations, irrespective of whether functional play or exploratory play appeared first in the sequence, were higher in the ASD as compared to the TD group (Hedges' $g = 0.45$, a medium effect size). The marginal mean risk difference for each sequence type was significantly greater

than zero for the ASD group, but not the TD group. Marginal mean risk differences from the mixed effects model are shown in Figure 1.

RQ2: Is caregiver FI utterances → functional play greater than caregiver-focused utterances → functional play, and more so for ASD as compared to TD children?—Results confirmed our prediction, and showed a main effect of sequence type, but no effect of group. Sequential associations between caregiver follow-in utterances → functional play were higher than for caregiver-focused utterances → functional play, irrespective of group. Additionally, this pattern was strongest for the ASD group. Hedges' $g = 1.10$ for the ASD group and 0.49 for TD group, a large effect size and approaching medium effect, respectively. Both effects favored caregiver follow-in utterances → functional play. In fact, in the ASD group, the risk difference for caregiver-focused → functional play was negative and significantly different from zero, indicating an inhibitory effect. For both groups, the risk difference for caregiver follow-in utterances → functional play was positive and significantly different from zero, indicating a facilitative effect of follow-in utterances on functional play. These findings are depicted in Figure 2.

RQ3: Is follow-in directives → functional play greater than follow-in comments → functional play, and more so for ASD as compared to TD children?—Results confirmed our prediction for sequence type, but not for the sequence by group interaction. The mean risk difference for follow-in directives → functional play was higher than the mean risk difference for follow-in comments → functional play, irrespective of group. Hedges' $g = 0.27$ collapsed across groups, a small effect size favoring follow-in directives. Marginal mean risk differences were positive and significantly different from zero for both sequence types in the ASD group. Only follow-in comments → functional play was significantly different from zero in the TD group. These findings are depicted in Figure 3.

Results from each model can be found in Table 2. Residual diagnostics were conducted at each level and indicated that distributional assumptions were met.

Discussion

This study examined sequential associations between caregiver talk and child play in groups of children with ASD and TD. To our knowledge, this study is the first to demonstrate (a) the sequential effects of caregiver talk on children's play, (b) the sequential effects of children's play on caregiver talk, and (c) differences of these sequential associations in children with ASD as compared to TD. To situate our findings in the proper context, we first describe study limitations.

Limitations

To rule out potential confounds, this study used rigorous procedures including the recruitment of MA-matched groups of children, the use of an index of sequential association that controls for the chance sequencing of key behaviors, and the addition of CA as a control variable. The study also used larger sample sizes than most available studies employing similar methods. Nevertheless, some limitations should be considered when interpreting our

findings. Notably, we cannot definitively establish a causal effect of the first behavior on the second behavior of the sequence. However, because sequential analyses focus on the temporal ordering and pre-specified temporal proximity of behavior pairs, we can make stronger claims than traditional measures of association.

Second, we used an interval lag-1 method which, while sufficient for gaining a general understanding of sequential associations between caregiver utterances and child play, does not give insight into the within-interval turn taking structure between caregivers and children, or the more complex turn taking structure across more than two intervals. While caregiver utterances are likely captured by a single interval, child play episodes extend across several intervals, and we did not track the onset of these episodes or the individual play actions within each interval. Thus, we cannot tease apart which sections of our data are characterized by caregiver talk punctuating extended child play episodes, and caregiver talk and child play that proceeded as more discrete interactive turns.

Third, we cannot comment on sequential associations between finer-grained aspects of caregiver talk and child play than were coded. For example, we did not track the variety of play actions children produced, the variety of toys children played with, or whether children's functional play that came after caregiver directives actually followed through on the directive. Similarly, we broadly conceptualized play and talk categories. Other research using more nuanced subcategories for play found different strengths and limitations in children with ASD as compared to TD children, depending on the subcategory (Williams et al, 2001). We included both 'bald' directives such as "make the truck go", and more subtle directives such as "can the truck go?" in the follow-in directives category, which may differentially impact play interactions (Landry, Garner, Pirie, & Swank, 1994). Directives may also be accompanied by additional caregiver scaffolding, including paralinguistic gestures and voice prosody, which may not accompany comments. These simultaneous cues are more likely to be followed by child attention to objects (Brigham et al., 2010). Future research will be needed to determine if refinements such as these will provide additional insights. Despite these limitations, we still offer important new findings on contingencies between caregiver talk and child play in ASD and TD.

Caregiver Responsiveness in ASD

Although our first hypothesis was not confirmed, the finding that play (regardless of type) elicits caregiver production of follow-in utterances to a greater extent in caregivers of children with ASD as compared to TD is interesting. Caregivers of children with ASD may be particularly attuned to their children's involvement with toys, and view their child's engagement with objects (whether exploratory or functional) as key moments to provide talk specific to what their child is doing. Caregivers of children with TD may not perceive a need to calibrate the timing of their talk to their child's play, and may provide follow-in utterances whether or not the child is physically manipulating toys. This interpretation is supported by research indicating that, in general, parents of children with ASD and TD tailor their interaction style to meet their children's needs (Meirsschaut, Warreyn, & Roeyers, 2011).

Functional Play Contingent on Caregiver Talk

Children with ASD appeared quite sensitive to the types of talk caregivers provided, and responded in different ways to the two broad talk categories we examined. Follow-in utterances had a facilitative effect on functional play in children with ASD, while caregiver-focused utterances had an inhibitory effect. Notably, the effect size contrasting the facilitative vs. inhibitory effects of follow-in utterances and caregiver-focused utterances was very large ($> 1 SD$ differentiating the effects of each utterance type on the subsequent production of functional play), indicating the distinction children make between these two types of utterance is likely clinically important. For children with TD, follow-in utterances elicited functional play, but caregiver-focused utterances were neither facilitative nor inhibitory. Children with ASD appear less able to maintain their highest level of play when caregivers talk about their own attentional focus instead of their child's. Caregiver-focused utterances may represent a withdrawal of the scaffolding provided by follow-in utterances, and require attentional resources that disrupt the child's higher-level play with toys. In contrast, caregiver-focused utterances do not appear to disrupt the high-level play of TD children.

Follow-in directives were superior to follow-in comments in eliciting functional play, but this did not differ between groups. Siller and Sigman (2008) categorized follow-in directives as asynchronous with the child's play, thereby implying a negative longitudinal effect on child development and/or caregiver-child interaction. We provide evidence to the contrary, albeit at the sequential level of analysis. Follow-in directives were more tightly and positively linked to temporally subsequent functional play than follow-in comments (although the effect size was small). Caregivers who provide high frequencies of directives may be displaying sensitivity to this contingency. This sensitivity may result in more of the type of engagement with toys that elicits follow-in comments, fostering language development (Bottema-Beutel et al., in review; Siller & Sigman, 2002; 2008). Indeed, research suggests that follow-in directives positively impact development (Green, Caplan, & Baker, 2014; Haebig, McDuffie, & Weismer, 2013).

Follow-in directives may scaffold functional play in at least two ways. First, they provide semantic information about what children might do with toys. If functional play skills are just emerging, these may be important clues as to the conventional uses of toys. Second, follow-in directives do the interactive work of making a responding action relevant, while comments do not (Goodwin & Cekaite, 2012). For example, if the caregiver says, "drive the truck!", the relevant next interactional move is to either comply by driving the truck, or explicitly reject the suggestion. If the caregiver says, "that truck is blue", there is less 'response pressure' to provide a next action (Stivers & Rossano, 2010). Children may perceive and respond to the interactive function of directives (indicated by voice quality and facial expressions in addition to lexical and syntactic properties) by providing a follow-up action with the toy even if they do not yet understand the specific action entailed by the directive.

Implications for Intervention Research

Currently, some of the most promising early intervention designs for children with ASD involve engagement with caregivers or adult interventionists in the context of toy play (Yoder, Bottema-Beutel, Woynaroski, Chandrasekhar, & Sandbank, 2014; Schreibman et al., 2015). This study attempts to better understand the nature of interactions that comprise episodes of caregiver-child engagement during toy play, which can be leveraged to refine these interventions. Increased toy play could be the mechanism by which play interventions lead to language gains, mediated by increased opportunities for caregivers to talk about the child's attentional focus and establish a mutual 'channel of communication' (Adamson, McArthur, Markov, Dunbar, & Bakeman, 2001). Mediation analyses within intervention studies could determine if follow-in utterances are indeed an 'active ingredient' of play-based treatments.

Assumptions regarding the (lack of) utility of directives within an intervention context may need to be revised, as they appear to promote child play. Follow-in directives may be especially helpful if children are not already producing high levels of functional play, or are less responsive to non-directive caregiver talk. It is premature to recommend against caregiver-focused utterances, as their contribution to development is not yet clear. Still, if children appear to have difficulty engaging in play with toys, decreasing caregiver-focused utterances in favor of follow-in utterances may be a potential source of remediation.

Conclusion

This study offers several novel findings regarding the organization of caregiver-child play interactions in children with ASD as compared to TD children. Additional research should be conducted to further characterize this critical context, and to examine the implications of this study within randomized control trials of play-based interventions.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Figure 1.

Marginal mean risk difference for exploratory play → caregiver follow-in and functional play → caregiver follow-in. Error bars are 95% CIs. Asterisks indicate significant difference from zero; ** $p < .01$, *** $p < .001$.

Figure 2. Marginal mean risk difference for caregiver-focused → functional play and caregiver follow-in → functional play. Error bars are 95% CIs, and asterisks indicate significant difference from zero; * $p < .05$, ** $p < .01$, *** $p < .001$.

Figure 3.

Marginal mean risk difference for caregiver follow-in comments → functional play and caregiver follow-in directives → functional play. Error bars are 95% CIs, and asterisks indicate significant difference from zero; * $p < .05$, ** $p < .01$, *** $p < .001$. FI = Follow-in.

Table 1

Descriptive Statistics for Risk Differences

Sequence	ASD			TD		
	Mean	SD	Range	Mean	SD	Range
Functional Play → Follow-in	.11	.16	-.16, .70	.08	.14	-.29, .41
Exploratory Play → Follow-in	.05	.11	-.23, .24	.07	.10	-.16, .36
Follow-in → Functional Play	.12	.15	-.23, .45	.06	.09	-.14, .30
Caregiver Focused → Functional Play	-.08	.14	-.38, .24	-.03	.12	-.49, .22
FI Comments → Functional Play	.09	.16	-.16, .61	.03	.09	-.12, .23
FI Directives → Functional Play	.11	.22	-.35, .63	.10	.17	-.21, .52

Note: FI = Follow-in

Table 2

Fixed Effects for Risk Differences

RQ1: Exploratory Play→Caregiver FI vs. Functional Play→Caregiver FI[†]			
	Coefficient	S.E.	95% CI
Group *	.10	.05	[-.008, .19]
Sequence	-.01	.03	[-.06, .04]
Group × Sequence	-.05	.04	[-.12, .02]
CA	-.003	.002	[-.006, .0002]
Constant ***	.12	.03	[-.06, .18]
RQ 2: Caregiver-Focused→Functional Play vs. Caregiver FI→Functional Play[†]			
	Coefficient	S.E.	95% CI
Group	.06	.05	[-.02, .15]
Sequence ***	-.09	.03	[-.16, -.04]
Group × Sequence **	-.11	.04	[-.18, -.04]
CA	-.0002	.001	[-.003, .003]
Constant	.07	.03	[-.01, .12]
RQ3: FI Comments→Functional Play vs. FI Directives→Functional Play[†]			
	Coefficient	S.E.	95% CI
Group	-.02	.06	[-.14, .09]
Sequence *	-.07	.03	[-.13, -.004]
Group × Sequence	.05	.04	[-.04, .13]
CA	.001	.002	[-.002, .005]
Constant *	.08	.04	[-.01, .15]

*
 $p < .05$ **
 $p < .01$ ***
 $p < .001$ [†] Sequence serving as the reference group. For all models, the typically developing group is the reference group for the Group variable.

Note: CA = Chronological Age