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Sequence organization of autistic children's play with caregivers: Rethinking follow-in directives

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Abstract

This study is a qualitative investigation of caregiver–child interactions, involving 15 autistic children who are in the early stages of language learning. Data consisted of 15-min videos of free-play interactions recorded in a University clinic. We use conversation analysis to examine the sequence organization of proposal episodes, where the caregiver proposes some course of action regarding the child's play activity. Prior work has used a speech act theoretical framework to identify follow-in directives, which are similar to proposals, but identified at the utterance level rather than at the level of social action. According to conversation analysis, social actions are implemented over multiple interactional turns and produced in collaboration between interaction partners. Our analysis showed that caregivers design their talk in ways that enable autistic children's participation in interactional turn-taking by forecasting the upcoming proposal. They also socialize children into expectations around turn-taking, by providing an "interaction envelope" around children's conduct so that it can be construed as completing interactional sequences. Finally, we show how autistic children can display an orientation to turn-taking by timing their interactive moves to occur at transitional moments in the interaction in ways similar to adult conversational turn-taking.

Lay abstract

In this article we use a qualitative method, conversation analysis, to examine videos of caregivers interacting with their young autistic children who are in the early phases of language learning. Conversation analysis involves preparation of detailed transcripts of video data, which are then analyzed together to understand how interactional moves (e.g. talk, gestures, and physical conduct) are linked with prior and subsequent interactional moves. We analyzed data from 15 participants, and focused on instances when caregivers made a proposal about something the child was playing with. In previous research, similar instances have been referred to as "follow-in directives." We found that these proposals were embedded in sequences that had a similar structure, and were prefaced with a 'pre-proposal'; where the caregiver established the child's interest in a joint activity and signaled the upcoming proposal. The caregiver's talk was also provided in such a way that there was a clear "slot" for the child's turn, which made it easy for the child's actions to become part of an interactional sequence. In addition, proposal sequences were very negotiable—the caregivers do not usually insist that the child follow through on the proposal, only that they produce an action that could be taken as a response. Finally, there were some instances where the child's turn was very precisely timed to occur right at the end of a caregiver's proposal; this precise timing could signal the child's understanding of how interactional turn-taking works. We suggest that this method of examining caregiver–child interactions provides new insights into how interactions proceed, which could be useful for future intervention research.

Keywords

autism, caregiver talk, conversation analysis, directives, follow-in talk, interaction, play, proposals

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> "[Language learning] is, rather, a subtle process by which adults artificially arrange the world so that the child can succeed culturally by doing what comes naturally, and with others similarly inclined." Bruner, 1982, p. 9

Introduction

Caregiver's scaffolding of their autistic children's play within joint engagement routines is associated with children's achievement of developmental milestones such as language and social communication (Adamson, Bakeman, Deckner, & Romski, 2009). Caregivers' follow-in talk, which refers to talk that is related to children's ongoing actions and attention, is an important source of scaffolding. In fact, a recent systematic review found that follow-in talk is the most frequently examined variable in studies of language use by caregivers of autistic children (Bottema-Beutel & Kim, 2021). Follow-in talk is linked to children's language learning (Haebig, McDuffie, & Weismer, 2013; McDuffie & Yoder, 2010), especially when it is provided during joint engagement (Bottema-Beutel, Yoder, Hochman, & Watson, 2014; Crandall, Bottema-Beutel, McDaniel, & Watson, 2019). When follow-in talk includes suggestions about how children can play with toys (often referred to as directives), it increases children's propensity to continue playing at their most advanced level and jointly engage with their caregivers, as compared to other forms of caregiver talk (Bottema-Beutel, Lloyd, Watson, & Yoder, 2018; Bottema-Beutel, Malloy, et al., 2018). Traditionally, this research has coded and quantified isolated units of caregiver speech, and computed associations with indicators of children's later development (e.g. language or social communication).

Despite findings from correlational research indicating momentary and developmental advantages of follow-in talk, interventions aimed at increasing caregiver's use of such talk have not yet provided consistent evidence that such changes result in downstream gains for autistic children (Edmunds, Kover, & Stone, 2019). This suggests that additional research, perhaps also from new theoretical and methodological traditions, could be helpful in this area. One reason why this evidence remains weak could be that research has not focused on the specific aspects of caregiver follow-in talk that are important for autistic children's development (Bottema-Beutel & Kim, 2021). A neglected area of research is the sequence organization of caregiver–child interactions that include caregiver's talk about children's activities. Sequence organization refers to a foundational feature of human interaction, whereby a given interactional turn projects and constrains subsequent interactional turns (Schegloff, 2007). Put another way, children's actions (e.g. vocalizations and manipulation of toys) can be made relevant to social interaction by caregivers' prior interactional moves, and construed as relevant to social interaction by caregivers' subsequent interactional moves. While caregivers' attributions of meaning to their children's behavior have long been considered an important aspect of language development (Bruner, 1983), there has been little systematic investigation into how caregiver's attributions are embedded within interactional sequences involving young autistic children.

The purpose of this study is to re-examine follow-in talk from a conversation analysis (CA) perspective, using a video corpus of caregiver–child interaction sessions, collected from young autistic children who are in the early phases of language learning. We were motivated to conduct this study because we believe that CA can provide additional insight into the process by which caregivers and autistic children construct interaction during play, which has largely been examined via the application of predefined codes that are then quantitatively analyzed. Leveraging the detailed and theoretically grounded insight into human interaction that CA can provide may in turn lead to improvements in interventions that aim to capitalize on caregiver–child interactions as a means to support development (Green et al., 2010). CA is a qualitative, micro-analytic research tradition that focuses on how social interactions are organized and made sense of by the people participating in them (see the study by Hoey & Kendrick, 2017 for an overview). In adopting a CA perspective, we can determine the action trajectories in which follow-in talk is embedded. Because CA theory and methods are still somewhat rare in autism research, we provide an overview of the concepts central to CA, and describe how this paradigm can be relevant examining interactions between caregivers and autistic children with small expressive language repertoires.

Introduction to sequence organization and social actions

CA research has shown that the most basic interactional sequence is the adjacency pair, composed of two turns at talk that are type-fitted to one another; a first pair part is followed by a second pair part that can be treated as matched in type to the first pair part. For example, questions are followed by answers, summons are followed by displays of attention, and invitations and proposals are followed by acceptances/declinations. If a type-fitted second pair part does not follow a first pair part at the earliest opportunity, it is treated as noticeably absent by participants, and repair may be initiated to remedy its absence. Interaction has a built-in proof procedure, whereby we can see whether interlocutor A's interactive moves are taken as intended by interlocutor B, depending on whether interlocutor A initiates repair following interlocutor B's response (Sacks, Schegloff, & Jefferson, 1974).

In research on caregivers' talk to their autistic children, follow-in utterances are often divided into comments and directives; comments are statements about the child's play, and directives are requests for the child to play in a particular way (Bottema-Beutel, Lloyd, et al., 2018; Bottema-Beutel, Malloy, et al. 2018; McDuffie & Yoder, 2010; Siller &

Sigman, 2002). This taxonomy has its basis in speech act theory, which, like CA, conceptualizes talk as a means to perform social actions, and not exclusively as a referential system (Austin, 1962). Speech act theory has been widely used in research on caregivers' talk to their autistic children, and involves coding single utterances (irrespective of children's responses) according to their perceived functions. In addition to comments and directives, functions could include acts like requests, promises, or apologies (Bottema-Beutel & Kim, 2021).

However, CA extends this framework by acknowledging that social actions are not implemented or even recognizable at the utterance level, but are revealed in the sequential unfolding of talk. Social actions extend across multiple utterances, and are collaboratively built by the various participants involved (Sacks et al., 1974). Therefore, to ascribe social actions to talk, any given utterance must be examined in the context of the interaction in which it occurs. In addition, CA invites exploration of the linguistic resources that are mobilized in interaction to perform various social actions, including but not restricted to talk (e.g. gestures, vocalizations, or bodily postures) (Drew, 2013). As such, speech act and CA frameworks for understanding interaction are quite distinct:

> Put very simply, whilst speech act analysis sought to identify the presuppositions and cognitive states associated with given speech acts, it did not consider how specifically language and linguistic resources are mobilized to 'perform' that action [. . .] Only recently have conversation analysts begun to explore precisely how speakers construct turns-at-talk, through the linguistic resources that a natural language makes available, in such a way as to 'do' requesting, inviting, offering and the like (Drew, 2013, p. 4).

According to CA, actions are what interactional moves accomplish in interaction, which is dependent upon how those moves are formatted (e.g. syntactic, lexical, or semantic features) in addition to where they are sequentially placed (Hoey & Kendrick, 2017; Sacks, 1992; Schegloff, 1995). As such, close analysis of utterance construction and the location of the talk within the sequence of preceding and subsequent interactional conduct will allow for a fuller investigation into what caregivers and children do in interactions.

Sequence organization in caregiver–child talk

Research on pre-verbal children indicates that parents and other caregivers socialize children into normative expectations around sequence organization from the very first months, when caregivers and children regulate one another's vocal interactions in ways that resemble conversation turn-taking (Gratier et al., 2015). In later months, when caregivers summon their children by calling their name, they will persist in eliciting their child's attention until the child looks in the caregiver's direction (Filipi, 2009). When this occurs, the child's look to the caregiver is treated as a second pair part type-fitted to the caregiver's summons. Caregivers' pursuit of their children's attention by repeatedly calling their name is a form of repair, which makes evident for the child the expectation that the caregiver's summons is followed by the child's display of attention.

For their part, children are sensitive to the sequential nature of talk long before they begin to speak. For example, even very young children display an orientation to the expectation that first pair parts are followed by second pair parts (Filipi, 2009; Forrester, 2008; Wootton, 2010). Children will also elicit a caregiver's attention (a rudimentary first pair part) prior to developing spoken language, by pointing to, showing, and giving objects of interest. Children's interactional moves are often provided in transition relevance places, which are temporal locations in talk that immediately follow turn constructional units (Kidwell & Zimmerman, 2007). These units are the smallest bits of talk that can be taken as a complete interactional turn. Humans across cultures (including young children) are adept in timing their turns so that they occur within milliseconds of the completion of a turn constructional unit produced by an interaction partner, therefore, minimizing both gaps and overlaps between turns (De Ruiter, Mitterer, & Enfield, 2006; Stivers et al., 2009).

The interactional dimension of follow-in directives

Several researchers have suggested that caregiver talk focused on what the children are doing or attending to is important for children's word-learning because it allows for efficient mapping between caregivers' words and semantic meanings (Bakeman & Adamson, 1984; Bloom et al., 2001; McDuffie & Yoder, 2010). For example, when caregivers say "push the truck" (a follow-in directive according to speech act theory) as the child manipulates a toy truck, this may provide an opportunity for the child to map the noun "truck" onto the object truck, and the verb "push" onto the act of pushing. Because autistic children may have difficulty following attention bids in interaction (Leekam, López, & Moore, 2000), talking about what they are already attending to or doing may be especially important to facilitate word learning.

However, follow-in talk may also provide opportunities for children to learn about the sequential nature of interaction. This idea is an extension of Bruner's (1982) concept of formats, in which caregivers scaffold children's participation in conventionalized, predictable interaction rituals such as peek-a-boo. These rituals are asymmetrical, as caregivers provide the overall interactional structure, and will even fill in the child's role until they are able to participate with less scaffolding. Follow-in

directives are one component of a basic conversational routine; they are an instance of a first pair part that requires a type-fitted second pair part (either an acceptance or rejection). Non-lexical features of directives (e.g. intonation and syntactic cues) may make the sequential aspect of talk identifiable to autistic children even if they are in the early phases of receptive vocabulary development. These features, in addition to caregiver's scaffolding of children's replies, may help children understand that second pair parts are expected following first pair parts.

Reconceptualizing follow-in directives as proposal sequences

In this study, we offer a reconceptualization of follow-in directives as proposal episodes, in which the caregiver scaffolds children's joint interaction with toys, by creating a sequentially organized "slot" for the child's participation. In keeping with a CA framework, we conceptualize a proposal as an action trajectory that is an interactional accomplishment between caregiver and child, and is achieved across multiple turns in interaction. In CA research, proposals are defined as offering some future course of action to a recipient that requires mutual agreement (Stevanovic & Peräkylä, 2012; Stivers & Sidnell, 2016). Proposals are a class of social actions that are often grouped with invitations, offers, and requests in terms of the interactional work they do (Houtkoop, 1987, cited in Stivers & Sidnell, 2016). Proposals are unique in that they are designed to confer benefit to both the proposer and the recipient of the proposal, and suggest a joint future action (Couper-Kuhlen, 2014).

Previous CA work on proposals has explored speaker "rights" to offer proposals and co-determine others' future actions (Asmuß & Oshima, 2012; Stevanovic & Peräkylä, 2012), how proposal acceptances can mark joint decision-making (Stevanovic, 2021), and how the grammatical features of proposals are linked to the social contexts in which they occur (Thompson, Fox, & Raymond, 2021). When offered during play, proposals provide "solutions" to a recurring problem of what to do next to allow play to continue (Stivers & Sidnell, 2016). Minor adjustments to proposal formats ("let's do X" vs "how about we do Y") can signal suggestions for beginning a new play activity, or suggestions for making incremental changes to an in-progress activity. Adults can build co-participation in play with very young children by demonstrating play activities using toys of interest, and carefully timing their proposals to align with children's interactive moves (Pursi & Lipponen, 2018).

This study

This study is a qualitative analysis of semi-structured play sessions that included an autistic child and their primary caregiver. We use CA as both a theoretical orientation to our data, and as a set of analysis procedures to examine the ways in which caregiver talk structures children's play (Schegloff, 2007; Ten Have, 2007). As such, we paid special attention to the sequence organization of these interactions. We examined the following research questions (RQs):

1. How were the proposal sequences in our dataset sequentially organized?
2. Within proposal sequences, how do caregivers scaffold children's interactional involvement?
3. Are there any ways autistic children display interactional competence in proposal sequences?

Method

Participants

This study is a secondary analysis of data collected on 15 participants randomly selected from a larger project aiming to identify predictors of autistic children's language development (Yoder, Watson, & Lambert, 2015). Institutional Review Board approval was secured, and caregivers provided informed consent prior to data collection. At study entry, children were between 24 and 48 months of age, had a clinical diagnosis of autism or pervasive developmental disorder not otherwise specified (PDD-NOS) based on *Diagnostic and Statistical Manual of Mental Disorders* (fourth edition, text revision; *DSM*-IV-TR) criteria (the most current version of the *DSM* at the time of data collection) and confirmed by research-reliable administration of the Autism Diagnostic Observation Schedule (DiLavore, Lord, & Rutter, 1995). For this study, we used video data collected 16 months after study entry, at which time the chronological ages of the 15 children selected for this study ranged from 3;1 to 4;10. At this time point, parents were administered a checklist (the MacArthur–Bates Communicative Development Inventory (MCDI); Fenson et al., 2007) consisting of words children are likely to understand and say. Raw scores for receptive vocabulary ranged from 19 to 346 words, and raw scores for expressive vocabulary ranged from 0 to 240 words. Five of the children were reported by caregivers to be female, and 10 were reported to be male. Ten participants reported their race to be White and five reported their race as Black or African American. All families spoke English as their primary language. Demographic data by participant is available in Table 1. Note that we do not have MCDI data for one participant, but chose to retain this participant's data because we did not uncover patterns related to children's scores on these measures and our findings.

Parent–child free-play procedure

Videos used for this study were recorded during a 15-min parent–child free-play session. Caregivers and children were invited into a playroom located at a University clinic, containing a standard set of toys (e.g. baby doll and bottle,

Table 1. Participant demographics.

ID	Parent-reported gender	Age (Y; M)	Race	MCDI expressive	MCDI receptive	# of proposal segments
109	Male	3;7	White	20	70	3
113	Male	3;2	White	0	197	2
114	Male	4;1	White	0	291	1
122	Male	4;10	Black/African American	11	28	4
137	Female	3;1	White	240	291	1
138	Male	4;4	Black/African American	0	19	1
143	Male	3;3	White	22	64	1
149	Male	4;2	White	345	346	4
155	Female	N/A	White	N/A	N/A	2
174	Female	4;7	White	224	264	2
317	Female	4;3	Black/African American	83	150	3
321	Male	4;0	Black/African American	125	283	3
322	Male	3;11	White	199	256	2
346	Female	4;9	White	225	230	2
353	Male	3;9	Black/African American	9	22	4

Birthday and MCDI data were not available for participant 155. Y: years; M: months; MCDI: MacArthur–Bates Communicative Development Inventory—Words and Gestures Form.

stacking blocks, beads, and a container). Prior to the session, caregivers were told to play with children as they normally would at home.

Transcription

All 225 minutes of video recordings were subject to three layers of transcription. The first involved basic transcription of caregiver's talk and the play activities in which the talk was embedded. In a second pass, we applied Jeffersonian transcription conventions to the talk, which includes details such as intonation, emphasis, speed, and overlaps (Hepburn & Bolden, 2017; Jefferson, 2004). The third and final layer involved annotating embodied conduct such as gaze, actions on toys, and gestures (Mondada, 2018). The second and third authors conducted these three rounds of transcriptions, and any disagreements in annotation were discussed and resolved in data sessions between all three authors. Transcriptions were first made in Word documents, and detail was added after transporting them to Transana 3.32 (2020) software, in which transcript annotation is time-locked with video recordings. Transcription conventions are available in appendices A and B (we encourage readers new to CA to refer to these to aid in deciphering examples from the transcripts).

Analysis

Our study was initially guided by an interest in caregiver follow-in talk. After a period of reviewing the transcripts and videos with this focus in mind, we became further interested in proposal episodes, in which the caregiver made some suggestions to the child about what they might do during the play activity. Specifically, we were interested in proposals that were designed to be responsive to actions the child was already performing, as opposed to proposals that were "discrete" from a prior activity (Stivers & Sidnell, 2016). Proposal episodes do bear similarities to follow-in directives, in terms of their conceptualization (McDuffie & Yoder, 2010), but they differ in that follow-in directives are composed of a single utterance while proposal episodes are not. As such, our collection included episodes that were sometimes composed of multiple caregiver proposals, plus other kinds of caregiver talk and child conduct. Proposal episodes were bounded by introductory talk that "set up" the proposal turns and some move from the child that was taken by the caregiver as a sufficient response to the proposal, such that the caregiver no longer provided iterations of the same proposal (more on this in the "Findings" section). Our decision to bound proposal episodes in this way was arrived at inductively after multiple passes through the data.

Proposal episodes were demarcated in Transana, which allows sorting of transcript sections to build a collection of data extracts for each phenomenon of interest. Once identified independently by the second and third authors, proposal episodes were corroborated by all three authors in group "data sessions," where all disagreements were resolved via consensus (see the studies by Heath, Hindmarsh, & Luff (2010) and Ten Have (2007) for descriptions of this practice). Proposal episodes were then further analyzed on a turn-by-turn basis. This layer of analysis was both inductive, where we allowed relevant phenomena to emerge from the data, and guided by our existing knowledge of CA concepts (e.g. pre-sequences, preference organization and turn-taking; Schegloff, 2007).

We focused on participants' talk and other aspects of their conduct such as gaze, gestures, vocalizations, and actions on the toys. Initial findings were presented to a larger CA data analysis group held at our University to gather feedback on our interpretations of the data. The phenomena we discuss below occurred in all selected videos, but representative examples were chosen to illustrate key findings.

Community involvement

Autistic children and their caregivers were participants in this study, but autistic people were not directly involved in the study design. We do, however, believe that the goals of this study align with community priorities to better understand autistic social interaction in service of designing more efficacious supports (Pellicano, Dinsmore, & Charman, 2014).

Findings

We isolated 35 proposal episodes from our dataset. Below, we discuss findings related to the sequence organization of these episodes (RQ1), beginning with the components that were included in the majority of sequences, followed by a detailed examination of the pre-proposal sequence that prefaced many caregiver proposals. We then provide evidence that caregivers generally prioritized the child's participation in interaction over the child's compliance with the proposal, and show how they constructed "interaction envelopes" around the child's actions to demarcate the child's contribution to the sequence (RQ2). Finally, we close by showing how autistic children can display an orientation to normative expectations around turn-taking through the timing of their play actions (RQ3).

Components of proposal sequences

Thirty of the 35 proposal episodes in our dataset[1] were comprised of four basic components: (a) the setting; constituted by the child's solitary play with toys, (b) a pre-proposal sequence, where the caregiver interjected into the child's play and forecasted the upcoming proposal in some way, followed by (c) the proposal(s) proffered by the caregiver, and ending with (d) some move made by the child that could be taken as an acceptance, declination, or an alternative proposal. An example of this trajectory can be found below (note that "s." denotes a toy slinky in Examples 1, 3, and 7, and recall that all transcription conventions can be found in Appendix A). We also present additional examples of proposal sequences and label the components in Appendix C.

Example 1, 109

```
1    chi:   & extending s. in and out →
2    chi:   %gz at s. →
3    Dad:   You got the &↓slin↑ky*
4    chi:            → &lets go of s. -->
5    Dad:                          * moves hand toward s.-->
6    Dad:   (1.0)           *&
7    dad:               -->*
8    chi:               --> &moves s. toward dad -->
9    Dad:   (. . .)*& (.) * (2.0)
10   chi:      → & lets go of s. →
11   Dad:           *grabs s. *puts s. in palm in front of child →
12   Dad:   Wanna do it?& (1.0) ^ (1.0) ^ &
13   chi:                & reaches for s.
14   dad:                        ^ grabs s.^ flips s. off palm →
15   chi:                                    & moves hand away →
16   Dad:   (3.0)*^ &       (.)           &^          (.)
17   dad:     → *
18   dad:       → ^                         ^grabs s. flips off palm →
19   chi:        → & reaches for s.      & moves hand away from s. →
20   Dad:   ↑That wasn't a good one, was it (1.0) ^
21   dad:                                      → ^
22   Dad:   (2.0) & (.) & (16.0)
23   chi:          & reaches for s.---------& plays w. s. ->>
```

The example begins with the child playing with the slinky while dad looks on (the "setting"). In line 3, dad begins the pre-proposal sequence by interjecting into the child's play with a declarative ("You got the slinky") followed by a reach toward the slinky, which the child construes as a request; the child complies with the request by giving the slinky to dad. In lines 11 and 12, dad places the slinky in his palm, presenting it as an offer to the child and saying "wanna do it?" This is an initial proposal, which the child responds to by reaching for the slinky.

However, dad revokes the offer momentarily, so that he can demonstrate flipping the slinky from his hand and onto the table (resuming the pre-proposal sequence). Following his second flip, he comments on his poor execution of the maneuver, but does not make a move to retrieve it; the child construes the slinky flipped onto the table in his direction as an offer (the second proposal), and takes the slinky to begin playing with it.

Proposals were sometimes repeated multiple times, or the caregiver repeated cycles of pre-proposal and proposal sequences before the child formulated a response. However, proposal episodes were almost always bracketed by children's solitary play at the beginning of the sequence, and by some move made by the child that was taken as a response by the caregiver at the end of the sequence. Proposal sequences that proceed with a predictable patterning of these components may scaffold autistic children's play, by providing conventionalized, repeated "slots" for children's participation (Bottema-Beutel and Kim, 2021; Bruner, 1982; Sterponi & Fasulo, 2010).

Pre-proposals

After observing children's play (the "setting"), caregivers initiated pre-proposal sequences with an interactional turn or series of turns usually formatted as interrogatives ("are you playing with the beads?") or declaratives ("that's the doll"); talk that previous research has labeled follow-in comments (e.g. Bottema-Beutel, Lloyd, et al., 2018; Bottema-Beutel, Malloy, et al., 2018; McDuffie & Yoder, 2010). The pre-proposal sequence served multiple purposes in preparation for launching the eventual proposal. To illustrate these, we first summarize research on pre-invitations, a well-examined phenomenon in CA research. Pre-invitation sequences occur prior to a potential invitation and work to establish the likelihood that the invitation will be accepted, which is a preferred response to an invitation (Drew, 2013; Schegloff, 1988). By preferred, we are referring to the concept of preference organization; a structural property of conversation whereby first pair parts invite second pair parts not only of a particular type, but also of a particular valence. For example, assessments ("nice weather today") invite agreements ("yes, it sure is nice"). Preferred responses are usually readily provided by the interaction partner, whereas dispreferred responses are provided after some delay and/or are accompanied by an account ("oh well actually I, uh, usually like it warmer because I'm sensitive to cold"; Pomerantz, 1984; Schegloff, 2007; Terasaki, 2004). Pre-sequences are launched as a strategy to accommodate preference organization. If the pre-invitation sequence reveals that the invitee is unlikely to accept the invitation, the inviter will formulate their subsequent talk accordingly to enable agreement. This is illustrated in the following example:

Example 2, from Terasaki, 2004, **p. 180**

```
1  Speaker A: Say what'r you doing.
2  Speaker B: Well, we're going out. Why.
3  Speaker A: Oh, I was just gonna say come out and come over here an' talk this evening,
              but if you're going out you can't very well do that.
```

The pre-invitation sequence in lines 1 and 2 reveals that speaker B will likely refuse an upcoming invitation by speaker A. In lieu of extending the invitation in line 3, speaker A reports on his now abandoned plans to extend an invitation to speaker B. Thus, speaker B is not required to decline the invitation, but can instead express agreement with speaker A that he would be unable to accept the (now abandoned) invitation had it been offered. Speaker A's adjustment accommodates the interactional preference for agreement. Pre-proposals in caregiver–child play can work in similar ways; they allow the caregiver to ascertain whether their proposal is likely to be met with agreement or uptake from the child.

Prior research has already shown that formulating proposals so they reflect what the child is already doing increases the likelihood the child will continue engaging with the caregiver (Bottema-Beutel, Lloyd, et al., 2018). The pre-proposal sequence could be another means to establish the child's interest not only in play with a particular object or activity, but in joint play with the caregiver. CA (and other) research with young children has also shown that pre-proposal sequences make this joint interest "observable" to both parties in the interaction, especially when these sequences involve embodied displays of the caregiver's interest through gaze, gestures, and physical manipulation of toys (Brigham, Yoder, Jarzynka, & Tapp, 2010; Kidwell & Zimmerman, 2007; Pursi & Lipponen, 2018). Pre-proposals can, therefore, establish the child's availability for joint interaction around the activity, which is similar to how pre-sequences operate in interactions between adults (Schegloff, 2007). This reduces the interactional "risk" of providing a first pair part that is not followed by a type-fitted second pair part.

Finally, pre-proposals can also forecast for the child that a proposal for a new activity may be forthcoming. For example, some pre-proposal sequences included the lexical item "look" followed by caregivers demonstrating some play activity. Despite the semantic meaning of

Figure 1. "Look" to signal upcoming action.
Mom demonstrates slinky (occluded behind the book). In this screenshot, mom says "look" while the child's gaze to the slinky is already secured.

"look," and its usual function as a directive for joint attention, in our data, this lexical item was often not geared toward securing the child's visual attention. This was evident to us because in many cases the child was already looking at the caregiver when the caregiver's "look" was produced. When embedded within a pre-proposal sequence, "look" has been shown to signal some new, upcoming activity (Sidnell, 2007). In our data, these new activities were consequential for the child's subsequent action. Example 3 illustrates this:

Example 3, 321

```
1   Mom:  *can i see the slinky? &        (1.0) &
2   mom:  *holds hand out →
3   chi:                          & steps back &
4   Mom:  (1.0) *% (1.0)     *       (1.0)  *
5   mom:      → *
6   chi:       → % s. on table →
7   mom:                      *reaches for s.* grabs s. →
8   Mom:    % & fig #* °look (.)
9   chi:  → % releases s. →
10  chi:      & gazing at s. mom plays with    →
11  mom:          → * moving s. in hands →
12  Mom:  go like ↓th↑is° *(.)
13  chi:                → *moves s. closer to her →
14  Mom:  look. & (2.0)* &
15  chi:      → & moves head to see &
16  mom:            → * tries to flip s. ->>
```

In line 8, mom prefaces her proposal "go like this" with "look." However, the child is already looking at the slinky mom holds when this utterance is produced (see Figure 1; the timing of the screenshot is denoted by a # in line 8 of the transcript). In this case, "look" is not a request for joint attention, which is already established. Instead, it signals to the child that the caregiver will demonstrate a trick with the slinky, which will then be proposed as something the child might do with the toy in a subsequent interactional turn.

Another important feature of pre-proposal sequences is that they allow the caregiver to construe the child's interactional moves, or lack of moves, following proposals as relevant second pair parts. Because work has already been done to establish an interaction, even if the child simply

continues playing as before, the caregiver can take this as an acceptance of the proposal (if the proposal was quite close to what the child was already doing) or as a rejection of the proposal (if the proposal was a suggestion for a new action that the child did not perform). We return to this phenomenon in our section below on children's responses.

The negotiability of proposals: caregiver prioritization of interaction over compliance

Proposal turns were generally formulated as interrogatives ("wanna do it?" In line 12, Example 1) or as imperatives ("go like this" in line 12, Example 3), but could also be constructed as gestural offers of a toy following a pre-proposal sequence (line 11, Example 1). Regardless of how proposals were constructed, they were highly negotiable in terms of whether children accepted, declined, or countered them. Even in instances where the caregiver formatted the proposal as an imperative, or repeated the proposal over multiple turns, caregivers prioritized children's production of any action that could be taken as a response over their acceptance of the proposal (i.e. their compliance with the caregiver's suggestion). This is illustrated in Example 4, in which the caregiver proposes the child look at a book depicting a mouse:

Example 4, 122

```
1   chi:  → %runs to the table →
2   Mom: Haha:::*haha (1.0) %& (1.0) ^
3   mom:          *gz at child →
4   chi:                    → % touches book on table →
5   chi:                       &gz at book →
6   mom:                              ^ moves to table →
7   Mom: Do& you want to <look%^ at the book>? (2.0)
8   chi: → &
9   chi:                     → %hand off book, runs off screen →
10  mom:                      → ^ touches book →
11  Mom: ↑<Shall we look at the ↑book>? (1.0) ^ (0.5)
12  mom:                                  → ^picks up book →
13  Mom:   ^Look (2.0)
14  mom: → ^ shows child book →
15  Mom:     ^Ooo::oh wanna see a mous::se?
16  mom: → ^points to book →
17  Mom: (1.0) ^& Sabie   (.)     &   ^
18  mom:    → ^ move closer to child ^
19  chi:        &turns to mom-----& moves closer/gz to mom →
20  Mom: ^↑D'you see a mouse? (1.0) ^
21  mom: ^points to book -----------^ moves to child with book→
22  Mom: (1.0) & (1.0)
23  chi:  --> &sits on floor and plays with beads →
24  Mom: A ↑mouse* (2.0)
25  mom:      → *
26  Mom:   ^oo::oh we're movin on to^ beads okay
27  mom: → ^ puts book down---------^
```

Mom proposes looking at the book four different times (lines 7, 11, 15, and 20), but when the child begins to play with a different toy in line 23, mom construes the child's actions as a counter-proposal; a second pair part appropriately type-fitted to her repeated proposals.

Throughout our dataset, there was evidence that caregivers prioritized the sequential function of proposals (soliciting a next action) over the semantic and speech act functions (directing the child to produce a particular action specified by the utterance). As such, repeated proposals were in pursuit of response, not compliance (Stivers & Rossano, 2010), which is consistent with the playful and improvisational context in which they were provided (Pursi & Lipponen, 2018). This is in contrast to other types of caregiver–child interactions where caregivers do prioritize control of the child's actions—such as bedtime routines where compliance is perceived as necessary for children's well-being (see Goodwin & Cekaite, 2018 for an extensive description).

Interaction envelopes

We found that proposal episodes served as opportunities to create an interaction envelope around children's actions (Bruner, 1982). This occurred when caregivers provided first pair parts in such a way that the child's ongoing actions, or slightly adjusted actions, could provide a rudimentary second pair part. The caregiver can then provide a third turn that displays their orientation to the child's activities as a sufficient

response, thus completing the envelope. In CA, these turns are referred to as sequence closing thirds (Schegloff, 2007).

These types of interactions bear some similarities to constraint sequences (Bottema-Beutel, Oliveira, Cohen, & Miguel, 2020; Sterponi, de Kirby, & Shankey, 2015), which are launched by first pair parts that constrain the possible responses from the interlocutor. An example is question–response–evaluation (QRE) sequences shown in Example 5. Often, the answers to the questions that launch QRE sequences are already known by the asker, which means that the child's response can be evaluated for appropriateness in a subsequent turn (turn 3 below).

Example 5 (Mehan, 1979)

```
1  Teacher: What time is it, Denise?
2  Student: Two thirty.
3  Teacher: Very good, Denise
```

These sequences follow a regular pattern, constrain the child's response turn in predictable ways, and envelope the response turn to clearly mark it as a second pair part. The consistency inherent to these types of sequences may make autistic children's participation easier than more open-ended forms of interaction, while also making explicit how adjacency pairs are expected to operate (i.e. that questions should be followed by type-fitted responses, and that the interaction partner can assess the response in terms of its type-fittedness to the question). The upshot is that children are drawn into interactions constructed by caregivers that require only minimal interactive work from the child.

We see this already in Example 4 above. Mom's construal of the child's actions as a rudimentary counter-proposal that is relevant to the interaction is made evident in line 26, when she says "oh we're movin' on to beads okay." "Oh" is a change of state token indicating that Mom has learned something new from the child's prior actions, "we're movin' on to beads" maps mom's interpretation of the child's actions onto words, and "okay" is a response token marking the child's counter-proposal as acceptable (Beach, 1993; Shiffrin, 1988; Yoder & Warren, 2002). We also see an orientation to preference organization; mom provides an account for the child's counter-proposal (we have moved on to a different play activity) because counter-proposals, like declinations, are marked responses that require elaboration.

Example 6 is another instance of an interaction envelope, this time embedded in a proposal episode within which the child's ongoing actions are close enough to mom's proposal that they can be taken as an acceptance.

Example 6, 353

```
1   chi: ->> & puts jar down & gathers beads into pile →
2   mom:                                    *reaches for jar →
3   Mom: *Miles    *
4   mom: *grabs jar* brings jar closer →
5   MOM: put em ↑i↓n. *   (.)     *
6   mom:             → * jar down * removes hand →
7   MOM: (1.0) *(1.0)&    (1.9) * (0.9)
8   mom:     → *
9   chi:               → & put beads in jar →
10  mom:                          *helps put beads in jar →
11  MOM: Goo::d j↑o::b Mi↓les
```

In line 1, Miles initiates play with the beads after dumping them out of the jar. He gathers the beads together, and mom takes this as an opportunity to retrieve the jar and propose that he "put em in" in line 5 (Miles' gathering activity suggests that this may also have been his intended next action). Miles then puts the beads in the jar while mom assists (lines 9 and 10). In line 11, mom provides the sequence closing third "Good job Miles."

Children's timing as a display of interactional competence

An interesting aspect of proposals for play is that they do not require verbal responses. As we have touched on briefly above, children's conduct—and in many instances, the conduct they are already engaged in—can be taken by caregivers as type-fitted second pair parts. However, there are some aspects of children's behavior that more clearly mark them as responsive to caregiver's talk, and not as randomly produced actions that are not sequentially organized. In their conversation analytic study of pre-verbal toddlers, Lerner and colleagues (2011) showed that very young children performed interactional moves at moments of opportunity created by caregivers, with precise timing so that moves were initiated at transition relevance places. We found several similar instances in our data; children's actions were often time-locked to caregivers' talk in ways that demonstrated an orientation

Figure 2. Children's turn timing.
Mom says "You do it," with the child's grasp of the slinky precisely timed to the end of her turn, and followed by her release of the slinky.

to turn-taking. Conversational turn-taking is governed by several norms, including that one speaker speaks at a time, speaker change recurs (i.e. I speak, then you speak, then I speak, and so on), and both gaps and overlaps in speech should be minimized. There were many instances in our data where children's non-verbal turns revealed an emerging orientation to these norms, such as the example below:

Example 7, 321

```
1  MOM:  ↑you ↓do ↑it & (1.0)*(2.0)& (5.0)
2  chi:            fig# & grabs s. --&
3  mom:                              → * releases s.
4  chi:                              & extends one side to ceiling->>
5  MOM:  ↑ya:↓a (3.5) ↑there you ↓go*
6  mom:                            → *
```

After demonstrating a shaking maneuver with the slinky while the child looks on (not shown), mom extends the slinky forward toward the child. Precisely at the end of her turn in line 1, the child grasps the top of the slinky near where mom holds it, prompting her release and his receipt of this slinky (the moment immediately following the end of mom's turn is depicted in Figure 2). These actions are precisely time-locked to her conversational turn; the child's grasp occurs within milliseconds of the end of her turn, and Mom's release happens only milliseconds later. The child extends the slinky toward the ceiling in a vertical motion, stretching the coils. This is a different maneuver than the horizontal snake-like motion demonstrated by Mom. However, mom responds "ya there you go," affirming that the child's actions are a suitable response to her proposal. Taken together, the three-sequence interaction is sequentially and temporally organized with type-fitted and well-timed transitions between each turn. Here again, the caregiver prioritizes and affirms the child's provision of a next action that can be taken as a response over the child's precise compliance with her directives.

Discussion

In this article, we offer a conversation analytic investigation of caregiver–child interaction episodes in which the caregiver proposes some course of action related to what the child is already doing. We argue that analyzing proposals in this way offers nuance to prior research on caregiver's use of follow-in directives, in ways that may be consequential

for supporting parents in interacting with their autistic children who are in the early phases of language learning. Whereas directives are defined according to speech act theory as utterances that commit the hearer to performing some action (Searle, 1975), our CA analysis of proposal episodes (which include utterances that would be classified as follow-in directives) shows that proposing is a phenomenon characterized by several features that are not adequately explained using this theoretical framework.

Proposing is an action trajectory performed over multiple interactional turns and in collaboration with the child. We describe a variety of components that make up proposal episodes, including the setting, pre-proposal, proposal, and child response (which is sometimes followed by a caregiver appraisal). Examining this full trajectory allows us to see how caregivers sensitively organize their talk so that it provides children with clues as to what type of social action will come next, and with clearly demarcated opportunities to provide their own contributions. In addition, caregivers orchestrate proposals in a way that mitigates interactional risk and displays an orientation to preference organization, when children's already in progress conduct (or slightly adjusted conduct) can be taken as a second pair part.

Even when children do not provide an obvious response to a proposal, caregivers envelope children's actions so that they are made visible as a relevant and expected component of the interaction. Caregivers can, therefore, socialize children into the flexible regularities that comprise social interactions, including sequence organization and conversational turn-taking, even if children are only beginning to develop interactional competence. Our analysis also reveals how caregivers capitalize on the existing interactional capabilities of autistic children, as caregivers' talk and interactional moves enable precise timing of children's actions so they occur in transition relevance places. Importantly, caregiver's proposals are not always in pursuit of children's compliance; oftentimes caregivers prioritize the interactional dimension over children's uptake of their suggestions for how to play with the toys. As such, proposal episodes are a means for scaffolding joint, cooperative play, and not a context for exerting parental control on children's play behavior.

This analysis augments our prior work comparing the interactional implications of follow-in directives and follow-in comments. We have shown that follow-in directives were more likely to be followed by children's joint engagement with caregivers than follow-in comments, and speculated that this was due to the "response pressure" that accompanies the provision of any first pair part (which includes directives; Bottema-Beutel, Lloyd, et al., 2018; Stivers & Rossano, 2010). While this interpretation is partially supported by our CA analysis of proposal episodes, we now show that follow-in comments can also be critical components of pre-proposal sequences, as they do interactive work in forecasting the upcoming proposal and displaying for the child the specific actions that may be entailed in the proposal (e.g. when a caregiver comments "I'm shaking it" while demonstrating a shaking motion with a slinky). Indeed, the pre-proposal sequence, and not the proposal turn, was often where demonstrations of what the child should do with the toys were located.

We hope that this analysis will invite new ways of conceptualizing caregiver's talk to their young autistic children during play, especially in ways that foreground the interactional possibilities of talk (Bottema-Beutel, 2017). Indeed, others have already reflected on how analyzing interactions from a CA perspective holds promise for reconceptualizing interactional phenomena in ways that better reflect "actual social behavior 'in the wild'" (De Ruiter & Albert, 2017, p. 97). Along these lines, quantitative coding procedures that have traditionally drawn on speech act theory could be augmented to incorporate this and other work using a CA approach to understanding caregiver–child interactions. Our findings also suggest new ways of identifying autistic children's interactional competences, such as the extent to which they time their interactive moves in close proximity to the completion of caregiver's conversational turns. Future quantitative work that relies on this, and other qualitative examinations of autistic children's social interaction, could operationalize and quantify relevant constructs to determine group (e.g. autistic and non-autistic) and contextual differences in frequencies of occurrence.

In addition, our study provides suggestions for future research on intervention for young autistic children. When interactions are analyzed as episodes consisting of action trajectories, it becomes clear that encouraging parents to provide particular kinds of talk (e.g. follow-in directives) while avoiding other kinds of talk (e.g. follow-in comments and descriptions) may not be sufficient to scaffold their autistic children's participation in social interactions in general, and joint engagement with toys in particular (as implicated in Bottema-Beutel, Malloy, et al., 2018). These forms of talk appear to serve different purposes in scaffolding interaction depending on how they are sequentially placed, and build on one another to elicit children's involvement. As such, caregivers and intervention providers may need to better understand the sequence organization of interactions, and attend to how they can construct episodes in which autistic children's social conduct can be incorporated into completed interaction sequences.

More generally, providing caregivers with insights from CA on the mechanics of how interactions with young children unfold (e.g. how interactional envelopes work, the importance of timing, preference organization, and unique ways that autistic children may display interactional competence) would be a novel strategy for caregiver-implemented interventions. Such insights could help them further engage their children in complex and engaging play sequences that scaffold development. Indeed, this strategy is already being

implemented in other sectors; for example, Stokoe's (2014) work with Conversation Analytic Role-Play Method to facilitate interactions during service encounters. Operationalizing child outcomes based on our findings (e.g. children's turn-timing) could also be used to determine if this type of intervention influences children's capacity for interaction in meaningful ways.

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Supplemental material

Supplemental material for this article is available online.

Note

1. The five episodes that did not contain all four elements were launched by the child directing the caregiver's attention to the toys, and so did not contain the setting component.

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