

# Effects of Conversational Context on Turn-Timing in (Non-)Autistic Dyads

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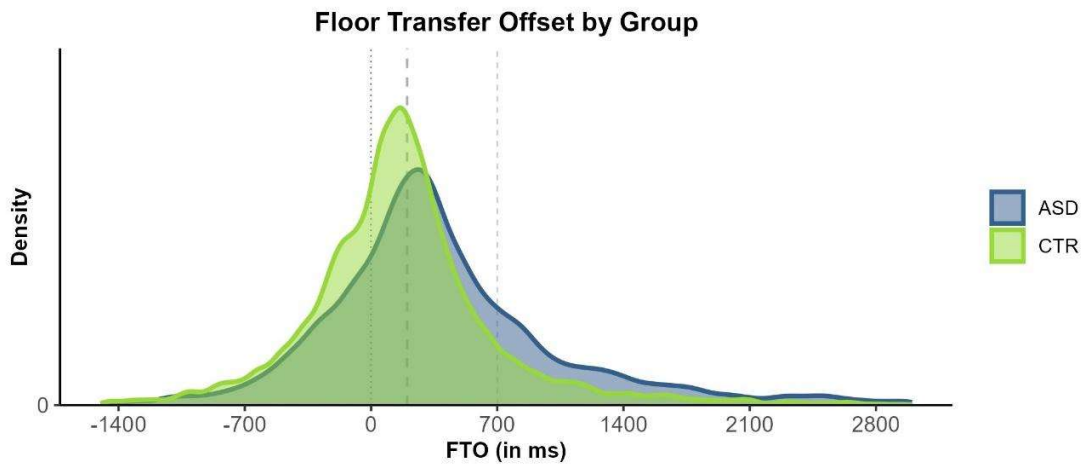
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The rapid exchange of speaker turns is a foundational element of conversational interaction, with interlocutors optimising the speed of exchanges to maximize efficiency, and doing so despite the great cognitive demands on processing and prediction that this entails for each speaker–hearer. Rapid turn-timing, characterized by a preference for very short silent gaps between speakers—typically around 200 milliseconds—appears to be a near-universal phenomenon, although subtle differences in turn-timing have been observed for e.g. non-native [1] and autistic speakers [2,3], as well as patients on the schizophrenia spectrum [4], all of whom may face particular challenges in conversational interaction. Interestingly, the influence of conversational context on turn-taking remains understudied, and, to our awareness, no relevant systematic quantitative analysis has been published. Moreover, most quantitative analyses of conversational turn-timing, such as the highly influential work of [5, 6], have been restricted to specific kinds of interactions like question–answer pairs or telephone calls. In-depth analysis of turn-timing in naturalistic, multi-modal, face-to-face interaction remains scarce.

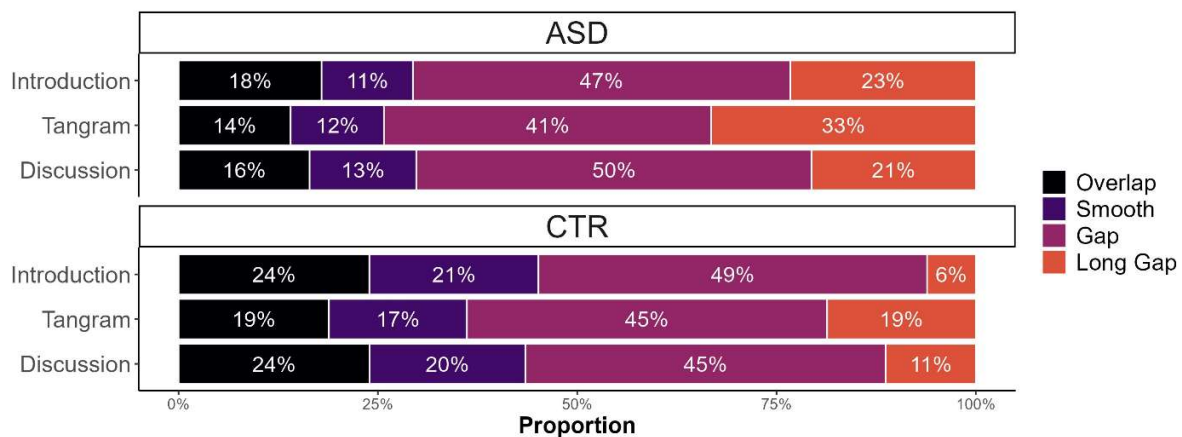
For the current work, we analysed a corpus composed of three distinct conversational contexts: small talk (Introduction), a cooperative task (Tangram), and an exchange about this same task (Discussion) (for details see [7]). We analysed data from 46 adults, 18 of whom had been diagnosed with autism spectrum disorder (ASD). The corpus has a total duration of over 11 hours. Dyads were grouped according to diagnostic status (e.g. ASD–ASD). Our primary focus was to examine differences in turn-timing based on context and diagnostic status. As in related work, we used the measure of floor transfer offset (FTO) to quantify turn-timing behaviour [3, 6]. Data and scripts are available on [OSF](#). Bayesian inferential modelling was used for statistical analysis.

We found that turn-timing varied according to conversational context, with the Tangram context featuring more long silences, across groups ( $\geq 700$  ms; [8]). Furthermore, autistic dyads consistently exhibited slower turn-timing across contexts, partly contradicting previous findings [3]; see Fig. 1. The non-ASD participants showed particularly fast turn-timing and a high proportion of overlaps in the introductory small talk (FTO mean = 91 ms; SD = 459) as compared to both the Tangram context (FTO mean = 316 ms; SD = 706) and to typical results in the previous literature, while autistic dyads were noteworthy for a generally higher proportion of long gaps; see Fig. 2.

In related work on the same data, we have observed that ASD participants engaged in less mutual gaze. Mutual gaze was less relevant in the Tangram context, as it was minimal across groups [9]. In this light, it is intriguing that turn-timing differences between groups were also less evident for the Tangram context, hinting at the important role of visual signals in the coordination of turn-timing in spontaneous interaction. Conversely, results from the Introduction (with strong group differences and many long gaps in ASD) recall the well-attested dispreference for small-talk situations in ASD. Overall, higher cognitive load seems to result in longer gap durations, thereby ultimately affecting communicative efficiency in more demanding conversational contexts.



**Figure 1:** Floor Transfer Offset (FTO) values by group (across contexts). Positive values represent gaps; negative values represent overlaps. The dotted line indicates the value of 0 ms FTO. Dashed lines indicate the values of 200 ms (expected typical transitions) and 700 ms (threshold for long gaps).



**Figure 2:** Stacked bar charts by group and context, showing proportions of different transition types: overlaps (FTO  $\leq -100$  ms) in black, very short (smooth) transitions (FTO -99 – 99 ms) in dark purple, gaps (FTO 100 – 699 ms) in magenta, and long gaps (FTO  $\geq 700$  ms) in orange.

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