

## Investigating Patterns of Repair during Neuro-Typical-Neuro-Divergent Dyads: Focusing on Repair in Conversation Interactional Loops

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### Abstract

*This study investigates the patterns of repair in conversations between children with autism and their family members/speech therapists. This study, by keeping in view the characteristics of autism, defines such children as neurodivergents and their co-interlocutors are named as neurotypicals. The central argument of the thesis is that communication breakdowns, which occur during neurotypicals-neurodivergents conversations, are repaired in distinctive ways and this calls for the need of a unique methodology for carrying out such sort of studies. The data for the present study are gathered through audio-recording conversations between neurotypicals and neurodivergents. The data are recorded in both home and clinical settings. The collected data is analyzed by methods of conversation analysis. The results of the study show that children who suffer from autism have impairment in social communication and interaction. The neurotypicals when indulge in conversation with such children seem to repair this impairment by (may be unconsciously) constructing conversation interactional loops. The study introduces different categories of loop each of which reciprocates to the amount of exertion required to repair it. Finally, the study concludes that this new proposed methodology can help in improving our current level of understanding regarding the mechanism of repair, which occurs during conversations involving atypical population.*

**Key Words:** Autism, Conversation analysis, Repair, Interactional loops, Neuro-Divergent Dyads

### Introduction

Man being a social animal, cannot inhabit in isolation. His social activities are mostly accomplished through face-to-face interaction. Such sorts of interactions are primarily carried through language. Thus, much about the nature of social world and language can be learnt through the study of organizational features of interaction (Svalberg, 2007). These organizational features include: turn taking, overlap, sequencing, repair etc. These features are best studied in the field of conversation analysis (Sacks, Schegloff, & Jefferson, 1974). Conversation analysis (CA) aims at empirically investigating the

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patterns present in human day-to-day interaction (Sacks, 1992). CA collaborates with different fields of knowledge and renders useful results. The previous studies which were carried out by following methods of conversation analysis have brought forth new theories and resulted in radical changes in multifarious professional contexts, like in pedagogy, andragogy, psychology, special education, medicine, speech and language pathology, Linguistics etc. In Linguistics, CA has contributed much by showing how semantics, morph- syntax, supra segmental and paralinguistic features of language aid in carrying out social activities (Kasper & Wagner, 2014). Many linguists, working in the field of CA, are trying to unearth patterns of social interaction in different social contexts. They are also trying to explore the interactional difficulties faced by interlocutors suffering from communication disabilities. There are many disorders, which may result in communication problems, and autism is one of them.

### Research Problem

Autism is a neurodevelopment disorder whose sufferers have impairment in social communication and social interaction (American Psychological Association [APA], 2010). The previous studies in conversation analysis have shown that children suffering from autism (CWA) face huge difficulties in initiation, continuation and proper closure of a turn (Leighton, Stollak & Ferguson, 1971; Wiklund, 2016), in handling overlap (Boorse et al., 2019), and in maintaining a proper sequencing of the talk (Fine, Bartolucci, Szatmari, & Ginsberg, 1994 ; O'Reilly, Lester, & Muskett, 2016). It will thus be interesting to see if CWA have any ability to repair a talk by self/other initiation/repair or the act of repairing a talk is solely carried out by their non-impaired co-participants.

This study aims to find out the way communicational breakdowns, if emerge during NT-CWA talk, repaired. The study will also help to find out the major reasons of communicational breakdowns, the most frequent strategies employed to repair and the link between topic of conversation and the deployment of a particular type of repair.

### Literature Review

There are many language and speech disorders that result in communication problems, for example, fragile x syndrome, aphasia, hearing impairment, down syndrome, and autism (Bray, 2015). Psychiatrists in most part of the world consider the Diagnostic Statistic Manual (DSM) as an authentic and authoritative book to diagnose all neurodevelopment disorders including autism. According to new criteria devised by DSM, autisms characterized by (a) persistent deficits in social communication and social interaction

across multiple contexts and (b) restricted, repetitive patterns of behavior, interests, or activities (APA, 2013). These symptoms of autism appear in an affected child by the age of three and the disorder may persist throughout his/her life (World Health Organization [WHO], 2013).

There is a great variability in CWA's linguistic ability but they surely face difficulties in social interaction. This ability to engage oneself in social interaction is of vital importance as according to Wittgenstein "the measure of a person's social and cognitive development is likely to be the degree to which she or he engages in the institutionalized language-games of the culture" (Wittgenstein, 1958, p. 15). He again asserts that and any study investigating the role played by human language in social interactions should focus upon the "public and conventional nature of language use" (Wittgenstein, 1958). A few disciplines study the role of language in social interaction from the same perspective as was put forward by Wittgenstein and some of these disciplines include rhetoric, discursive psychology, Ethno methodology & conversation analysis (Potter, 2001). The researcher shall employ techniques informed by conversation analysis for investigating CWA's language.

This discipline of conversation analysis has links with different fields of study including sociology, social psychology, ethnography, ethno methodology and linguistics. It is in fact a qualitative methodology which provides ways to gain an in depth analysis of any talk in interaction. Sack, pioneer of conversation analysis, who himself was a sociologist and had a great interest in ethno methodology founded this discipline with the aim of transforming sociology into a naturalistic and observational science (Hutchby & Wooffitt, 2008). Later on Schegloff and Jefferson contributed immensely to make conversation analysis a good methodology for systematically studying structural organization in talk. In 1974 a seminal work authored by Sack, Schegloff, and Jefferson was published in *Language*, the journal of the Linguistic Society of America and thus established the relationship between conversation analysis and linguistics (Barbara, Sandra, Thompson, & Couper-Kuhlen, 2012).

Currently, the researchers are using methodology of conversation analysis to study ordinary conversations where the focus of researcher is not the topic of conversation rather he is more interested in finding out social rules of conversation. For instance, he is interested in knowing the implicit social knowledge possessed by interlocutors regarding rules for construction of turns and methods to repair them.

**Methods and Materials**

This work adopted qualitative research methodology to study the dyadic interactions between neuro-typicals and the children with autism. The researcher selected this particular research paradigm by keeping in view the fact that qualitative inquiry process is more suitable, than quantitative methodology, for studying any phenomenon in all of its complexities (Creswell, 1994). There are different traditions of inquiry in qualitative study namely biography, case study, ethnography, phenomenology, conversation analysis and grounded theory; the researcher adopted methods of conversation analysis for carrying out this study. Sacks (1984) one of the pioneers of conversation analysis, believes conversation analysis to be the best methodology for studying any talks in interaction. In recent studies, Hoey & Kendrick (2017) and Stivers (2015) also second Sack's viewpoint by saying that the strength of conversation analysis lies in its focus on naturalistic data. They further asserted that conversation analysis provides well-developed descriptive apparatus to explore patterns prevailing in any talk in interaction. It also helps researchers to support their analyses through empirical procedures. All of these aforementioned points motivated the researcher to opt for conversation analysis.

Seven male children of 3-13 years of age, with normal IQ level and ability to articulate (not mute), were selected for the study. Further, none of the participants were suffering from any physical or natural deformity e.g. apraxia, Dysarthria, voice disorders etc. The data for the investigation occurred from audio-recordings of both institutional and naturally occurring conversations between individuals with typical language development (neuro-typicals) and the children with autism (CWA).

**Data Analysis**

The analysis of the data show that at any given time, children with autism were having normal like contribution in certain part of conversation yet were finding difficulties in some others. The neuro-typicals were there to help them out, sometimes CWA were willing to overcome these difficulties by practicing with the adults but there were also occasions when CWA refused to try overcoming their conversational difficulties. The researcher by adopting the framework proposed by Walla (2019) divided the entire sets of conversation in different loops.

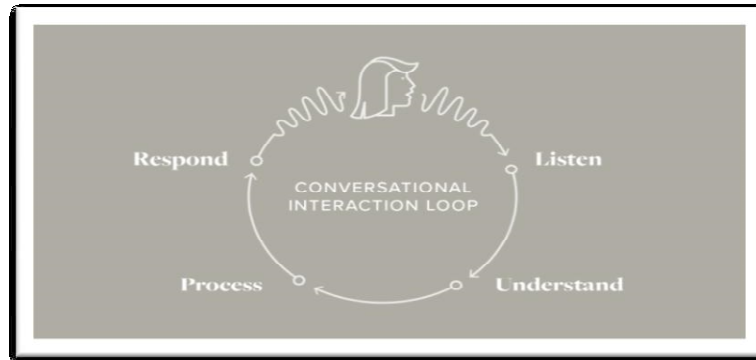


Figure 1: Conversational Interactional Loops

These were as under

1. Unimpaired loops
2. Repaired Loops
  - a. Major
  - b. Economic
  - c. Normal
3. Un-repaired loops

Each of the Major, economic and normal repair was divided in sub categories. Following are examples from each of the main categories of repair.

Example One (Un-impaired loop)

**M:** *Namaz parhni hai?*

Do you want to offer prayer?

**B:** *Han parhni hai.*

Yes, I do want to offer prayer.

In the example one Bhawal was asked a question if he wanted to offer a prayer and he replied in affirmation. Thus, the loop was completed successfully and is an example of un-impaired loop. It is pertinent to mention here that if a CWA was able to comply with the instructions of the NTs even that was considered an un-impaired loop.

Example Two (Repaired Loop)

**C:** What do you want?

((Tries to snatch the mobile))

No first tell, what do you want?

((Azan utters idiosyncratic sound))

What do you want?

I want...

**A:** I want baba's mobile please

**C:** Good boy! Take it

The above is an example of repaired loops. The example shows that child was unable to provide desired response and the appropriate

response was only generated when NT provides initial two words to the child.

The following example contains an instance of unrepaired loops when the child is unable to complete the loop as was desired by his father.

Example Three (Unrepaired loop)

**F:** Ok, how old are you Azan?

**A:** I am fine.

**F:** How old are you?

**A:** ((idiosyncratic sounds self-talk))

**F:** Azan how old are you.

No crocodile

**F:** Azan tell me you rage.

((But azan doesn't reply rather remains busy in his own activity))

### Results

Following is the accumulative performance of all the research participants

Table 1 Summary of total performance results

Names	Unimpaired loops	Repaired Loops			Unrepaired loops
	%	Maj or	Econo mic	Normal	%
Usmah	27	31	26	13	13
Azan	33	22	15	23	23
Raffy	16	25	17	37	37
AREhman	27	11	50	9	9
Goher	24	14	11	46	46
Bhawal	36	40	15	6	6
Arman	50	24	11	8	8

Where UI: Unimpaired REP: Repaired Loops UR: Unrepaired Loops

Following inferences may be drawn from the results:

a. The data gathered from the participants showed the above are the major reasons for communicational breakdowns and the deployment of repair techniques.

1. Behavioral problems (idiosyncratic sounds, cries, refusal to sit and listen)
2. Lack of attention( unresponsive, irrelevant information)
3. Lack of linguistic knowledge or problems in expressing knowledge adequately (lack of vocabulary, syntactic and phonological errors)

b. The second sub-question asked for finding out most

frequently employed strategy to repair conversation. It can be inferred, from all the examples which have been discussed so far, that repetition was the most frequent strategy employed by the therapists to repair a talk. The next most frequent strategy was modification where same question was repeated with some alternations.

c. The third part of second question required to highlight any link between the types of communicational breakdowns and the repair typed deployed to address those breakdowns. As was evident from the data and also pointed out in the discussion above, the major repair was commonly used to address the behavioral issues and the issue of lack of attention whereas the lack of linguistic knowledge was mostly repaired through economic repair. However, it should be pointed out that sometimes behavioral issues or the issue of lack of attention make it harder for the therapist to impart the intended linguistic knowledge and the loops remain unrepaired. Secondly, if the child had great difficulty in grasping a particular linguistic concept then again the neuro-typicals had to deploy major repair type to get the loop repaired.

### Discussion

The present study tried to investigate CWA's ability to carry on conversation successfully. The main focus of the study was on CWA's ability to repair any breakdowns during talk. The researcher employed methods of conversation analysis to carry out this study. The use of methods of conversation analysis for exploring communicational abilities of a target population has already been well established by many researchers (e.g. (Barbara, Sandra, Thompson, & Couper-Kuhlen, 2012). However, the methodologies employed for analyzing mechanism of repair in previous studies (e.g. Bauminger-Zviely et al., 2014; Meadan, Ostrosky, Triplett, Michna, & Fettig, 2011) didn't help to have in-depth analysis of data gathered through this study. Thus, the researcher devised a new methodology which was much helpful in having thorough analysis of the data.

The present study also deviated from the hitherto held notion of focusing on turn construction while doing any analysis of conversation (Magyari & DeRuiter, 2012; Sacks, Schegloff & Jefferson, 1974; Stivers et al., 2009) as this study by following the frame work proposed by Walla (2019) took loops as the central focus of analysis. This change in focus was prompted by the heterogeneity and richness of the collected data. The breaking down of loops in different main and sub types also help to have a succinct analysis of the data.

The feedback from the speech therapists and family members of CWA established the validity of the methodology adopted for the study. Furthermore, the results of the study are aligned with the

diagnostic criteria introduced by DSM (2015) and ICD (2013). The findings of the study show that communicational difficulties faced by the CWA are mainly due behavioral problems. However, this study didn't agree with the findings of Bauminger-Zviely et al. (2014) who show CWA's inability to repair any talk. Moreover, the present study didn't find the major influence of other types of communicational problems as were introduced by Philip (2008) and Ohtake et al. (2011). Nonetheless, the observational notes and discussions with the family members or speech therapists did highlight the relevance of family background, lack of attention, topic of conversation, and linguistic competence.

### Conclusion

The present study proposed an entirely new methodology for analyzing conversations between neurotypicals and neuro divergents: The researcher showed patterns of similarities between the way NTs help CWA construct loops with the engineers' method of building up new loops in the machines (e.g. the way loops are constructed in Google). This comparison helped researcher to introduce a new way of looking at NT-CWA talk and to highlight the importance of studying loops rather than turns, while analyzing any speech- in-interaction, involving PWA (people with autism). In addition to this, the researcher has also enumerated different types of loops with all possible sub-divisions. Thus, it seems that this methodology best suits to have in-depth understanding of atypical population's problems in conversation which will ultimately lead towards improvement in their performance during talk.

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