AN ANALYSIS OF NATURALISTIC INTERACTIONS OF A CHILD WITH DEVELOPMENTAL DELAY

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ABSTRACT

Developmental Delay (DD) is a condition whereby a child fails to meet expected milestones for their actual or adjusted age. Children with DD has been associated with problems such as learning disabilities, intellectual disabilities, and language impairment. The main aim of this study is to explore naturally occurring interactions between an 8 years old female child, Manny with DD and her siblings so as to provide insights into how the child functions in her natural environment while interacting with her siblings. Employing Conversation Analysis (CA), the recurring patterns as well as the deviations in the interaction of Manny and her siblings are identified and analysed. The findings of this study reveal that conflict during routine play at home often leads to physical aggression displayed by Manny towards her siblings. Possibly due to her lack of language resources, Manny's siblings act in a manner that is seen disaffiliating towards her and this resembles as bullying among siblings. Manny often initiates to play with her siblings but disagrees with them and even resorts to aggression when she does not get it her way. Outside the home environment, Manny frequently displays aggression and behaves in a physically threatening manner towards her siblings when they do not comply with her demands. In other routine activities, Manny is able to participate and collaborate with her siblings during interaction. One of the noteworthy findings of this study is that Manny's siblings assist and facilitate her during interaction.

Keywords: Aggression, conversation analysis, developmental delay, play behaviour, sibling interaction.

ANALISIS INTERAKSI NATURALISTIK SEORANG KANAK-KANAK DENGAN KELENGAHAN PERKEMBANGAN

ABSTRAK

Kelengahan perkembangan adalah keadaan di mana seorang kanak-kanak gagal mencapai tahap perkembangan mengikut peringkat umur secara normal. Kanak-kanak tersebut telah dikaitkan dengan masalah seperti ketidakupayaan pembelajaran, ketidakupayaan intelektual, dan kecacatan bahasa. Matlamat utama kajian ini adalah meneroka interaksi secara semulajadi seorang kanak-kanak perempuan berusia 8 tahun Manny, yang mengalami kelengahan perkembangan dan memberikan gambaran tentang bagaimana Manny berinteraksi dalam persekitaran semula jadi dengan adik-beradiknya. Dengan menggunakan analisis perbualan, corak yang berulang serta yang berbeza dalam interaksi Manny dan adik-beradiknya telah dikenal pasti dan dianalisis. Dapatan kajian menunjukkan bahawa Manny memaparkan tingkah laku agresif terhadap adik-beradiknya semasa permainan rutin di rumah. Jika adik-beradiknya tidak bersetuju dengan tuntutannya, Manny akan bertindak dengan cara yang mengancam secara fizikal terhadap adik-beradiknya. Di luar persekitaraan rumah, Manny juga sering memaparkan tingkah laku agresif terhadap adik-beradiknya. Dalam aktiviti rutin yang lain, Manny akan menyertai dan bekerjasama dengan adik-beradiknya semasa interaksi. Salah satu penemuan yang penting dan relevan kajian ini ialah adik-beradiknya didapati membantu dan memudahkan interaksi Manny.

Keywords: Kelakuan agresif, analisis perbualan, interaksi adik-beradik, kelengahan perkembangan, pelakuan bermain.

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LIST OF SYMBOLS AND ABBREVIATIONS

For examples:

ABPQ	:	Atypical Behavior Patterns Questionnaire
ADHD	:	Attention Deficit Hyperactivity Disorder
ASD	:	Autism Spectrum Disorder
AS	:	Asperger Syndrome
BSID-II	:	Bayley Scales of Infant Development II
CA	:	Conversation Analysis
CBCL	:	Child Behaviour Checklist
CD	:	Communication Disorders
CP	:	Celebral Palsy
CPs	:	Conversational Partners
DD	:	Developmental Delay
DS	:	Down Syndrome
DSTs	:	Developmental Screening Tools
EIP	:	Early Intervention Programme
EMCA	:	Ethnomethodology and Conversation Analysis
FAS	:	Fetal Alcohol Syndrome
FIQ	:	Family Impact Questionnaire
GDD	:	Global Developmental Delay
HI	:	Hearing Impairment
HLI	:	History of Language Impairment
HR	:	High-Risk
ID	:	Intellectual Disability
LDD	:	Language Development Disorder

LI	:	Language Impairments
LR	:	Low-Risk
MOE	:	Ministry of Education
MOH	:	Ministry of Health
MR	:	Mental Retardation
MWFCD	:	Ministry of Women, Family and Community Development
NECIC	:	National Early Childhood Intervention Council
NGOs	:	Non-Governmental Organisations
OKU	:	Orang Kurang Upaya
PDD-NOS	:	Pervasive Developmental Disorder- Not Otherwise Specified
PEMANDU	:	Prime Minister's Department and the Performance Management and Delivery Unit
PTR	:	prior turn endings
PWDs	:	Persons With Disabilities
RBPC	:	Revised Behavior Problem Checklist
SEIP	:	Special Education Integrated Programme
SLI	:	Specific Language Impairment
TDC	:	Typically Developing Children
TD	:	Typically Developing
TDS	:	Typically Developing Sibling
WS	:	Williams Syndrome
WTR	:	within-turn repeats

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CHAPTER 1: INTRODUCTION

1.0 Introduction

This section will introduce the current study. Section 1.1 introduces the definition of Developmental Delay (DD) and discusses the causes of DD. Section 1.2 introduces the definition of speech and intellectual impairment and its possible causes. Section 1.3 presents DD in Malaysia. The following subsections will discuss the prevalence of DD in Malaysia, intervention programmes and services supported by government agencies in Malaysia and non-governmental organisations and the private sector in Malaysia. This chapter will also discuss the following, Section 1.4 rational and significance of the present study, Section 1.5 statement of the problem, Section 1.6 objective of the present study, and Section 1.7 research questions. Lastly, Section 1.8 presents the concluding remarks which will briefly revisit all the above.

1.1 Definition of Developmental Delay (DD)

The term Developmental Delay (DD) is used to refer to some children with slow development compared to other children of the same age group. DD is a condition whereby a child fails to meet one or more developmental milestone related to motor, speech and language, social functioning or daily living skills (Merrell & Holland, 1997; Shevell, 1998; Shevell, Ashwal, Donley, Flint, Gingold, Hirtz, Majnemer, Noetzel, & Sheth, 2003; Shevell, Majnemer, Platt, Webster, & Birnbaum, 2005). Children with DD are affected in one or many areas such as physical development, cognitive development, communication, social or emotional development and behavioural development (IDEA, 2017). Children with DD fail to obtain the skills appropriate for their respective ages and may perform poorly on developmental tests. These children exhibit a slower than expected rate of development compared to Typically Developing Children (TDC). The

delay may occur temporarily if the child has the potential to outgrow it or it can persist across the individual's lifespan. There is no consensus on the definition of DD (Petersen, Kube, & Palmer, 1998).

The term DD may be used for a number of different conditions. Besides, the term DD may also be used in different ways by educational personnel, physicians or medical specialists. In some cases, the term Developmental Delay (DD) is used as an-equivalent to Mental Retardation (MR) or Intellectual Disability (ID). However, MR and ID are defined usually as a permanent condition. The term DD may be used to refer to the motor expression of mental retardation. Sometimes, the term DD may be used to refer to a child with low scores on formal developmental or intelligence testing. In the current study, the term "Developmental Delay" is adopted as the participant has been diagnosed with Developmental Delay with speech and intellectual impairment.

The causes of DD are heterogeneous. The classifications of the etiology of DD may be used differently in literature reports. These classifications are based on prenatal, perinatal, postnatal, chromosomal imbalance, monogenic syndromes, inborn errors of metabolism, or a mix of these elements (Moog, 2005). DD may be caused by genetic defect (hereditary or chromosome mutation, e.g. Down Syndrome), pregnancy or birth factors such as drugs or alcohol misuse, Fetal Alcohol Syndrome (FAS), and illness or brain injury (e.g. encephalitis or brain trauma). Some cases of DD are due to environmental factors whereby an absence of appropriate stimulation may lead to social or language developmental delay. Often, the cause of most cases of DD is unknown. Among the various underlying causes of DD include poor birth outcomes, genetics or complications of pregnancy, malnutrition, psychological or familial situations, environmental factors or other medical conditions (World Health Organisation &

Unicef, 2012). DD may be also caused by a short-term issue. For instance, speech delay caused by hearing loss from ear infections.

DD is a descriptive term used for children whose difficulties are apparent earlier in childhood when a cause is not yet established. The term DD is not a diagnosis. However, DD is commonly used when a specific diagnosis is absent. The term Developmental Delay is different from Developmental Disorder or Developmental Disability as the latter "implies a permanent and severe disability that continues indefinitely" (World Health Organization & Unicef, 2012). In Malaysia, the Persons with Disabilities (PWDs Act, 2008) defines "persons with disabilities" as one who has long term physical, mental, intellectual or sensory impairments which in interaction may limit the person from performing tasks and hinder their involvement in the society (Unicef, 2017). The "long-term" mentioned in the PWDs Act (2008) does not exclude the short-term physical, mental, intellectual or sensory impairments (Unicef, 2017). The law applies to the "Persons With Disabilities" either with short-term or long-term impairments. The total number of PWDs, Orang Kurang Upaya (OKU) in Malay registered in Malaysia in year 2017 is 453,258 (Jabatan Statistik Malaysia, 2018). Individuals who are eligible to register with the Social Welfare Department as PWDs would present disabilities in one or more of the following categories: hearing, visual, speech, physical, learning and mental or other disabilities (Unicef, 2013).

Children with learning difficulties have intellectual development that does not match their biological age. This would include those with Global Developmental Delay (GDD), Down Syndrome (DS), Intellectual Disabilities (ID) and Autism (Jabatan Kebajikan Masyarakat, 2018). The diagnosis will have to be done at government hospitals or health care centres (PWDs Act, 2008) but they may receive early intervention in the clinical setting itself while school-aged children with persistent

disabilities are placed in Special Education Schools, Special Education Integrated Programme (SEIP) and Inclusive Education Programme run by the Malaysian Ministry of Education (Unicef, 2013). The Special Education Department in the Ministry of Education implements these programmes by placing children with learning disabilities, autism, Down Syndrome (DS), speech and language impairment, or Cerebral Palsy (CP) in the same environment. Individual variations seem to lack attention although the stakeholders especially the parents of these children recognize the need to do so.

Children with DD may also have speech and intellectual impairment. The speech of these children may be unintelligible and their intellectual development may be affected.

1.2 Speech and intellectual impairment

Speech and intellectual development are vital means in human life which enable people to organize and exchange their knowledge, ideas, express their feelings or other experiences to make sense of the world they live in. Nevertheless, disruptions in speech may not only affect a child or adolescence communication but also academic performance. Speech and intellectual impairment generally tends to emerge at a young age. Children with speech impairment is characterized by difficulty in articulation. The term speech or language impairments is defined as "a communication disorder such as stuttering, impaired articulation, a language impairment, or a voice impairment that can impact a child's academic achievement" (IDEA, 2015). Children with intellectual impairment or intellectual disability often learn at a slower rate compared to TDC. Children with intellectual impairment have problems with learning, memory and thinking (Marrus, & Hall, 2017). Among the possible causes of speech and intellectual impairment are autism, brain injury (e.g. brain trauma), CP, DD, genetic abnormalities (e.g. Down Syndrome), hearing loss, intellectual disability, neurological disorders,

problems during pregnancy (e.g. drug misuse or malnutrition) or during childbirth (e.g. premature), and physical impairments such as cleft lip (Pivalizza & Seema, 2016). In most cases, the cause may be unknown.

Children with speech impairment display problems in controlling the pitch, or loudness of the voice. They have reduced vocabulary, articulation errors including omissions, substitutions, and inaccurate use of words and meanings. These children are also characterized by an unusual rate of speaking, hesitations, prolongations and repetition of syllables, sounds, words, phrases, or sentences that may affect their interaction with others. Children with intellectual impairment display problems in intellectual functioning (e.g. communication and problem solving) and adaptive behavior (e.g. social skills, getting dressed and self feeding). Children with intellectual impairment can also exhibit similar characteristics as children with Autism Spectrum Disorder (ASD) such as restricted interest and repetitive behaviours (Chakrabarti, & Fombonne, 2001).

In any country around the world, there are bound to be children with disabilities. Similarly, in Malaysia, there are children with developmental delay and speech and intellectual impairment. The government of Malaysia provides support for these children.

1.3 Developmental Delay in Malaysia

In Malaysia, the intervention and screening programs and services for PWDs are provided by the Ministry of Education (MOE), Ministry of Health (MOH) and Social Welfare Services. The Government is committed to providing an accessible and affordable health care services to all PWDs. Clinics and general hospitals provide free

care and services for PWDs. Parents of PWDs may also opt for services provided by private clinics or private hospitals due to the lack of specialized care, limited services by government clinics, and other negative experiences (Unicef, 2017). There are also Non-Governmental Organizations (NGOs) that provide such services for PWDs.

Early Intervention Programmes (EIP) in Malaysia run by the Government or private hospitals are designed to support the children's developmental needs and guide their family in handling them. Children with DD benefit from these programmes as it may minimize developmental delays. The early intervention may include various educational programmes and therapeutic services catered for children with DD and their families. Some of the early intervention services provided can include traditional therapies such as occupation therapy, physical therapy and speech and language therapy. These services and programmes are aimed at enhancing the child's development. In addition, interventions may also guide families to understand and cope effectively with daily challenges in the home environment and in the society. Other services that may be provided include counselling and family and parent training.

A multidisciplinary assessment will be performed to identify the child's developmental status before a child is placed under the EIP. Developmental Delay or a disability can be identified during the health screening and surveillance programme (Said, Othman, Ismail, Samah, & Idris, 2011). Developmental surveillance is the process of health care professionals performing skilled observation to identify children who may be at risk of developmental delay (American Academy of Pediatrics, 2006). Developmental surveillance includes eliciting and attending to parental concerns, observing the child's development and obtaining the child's development history. If a problem is identified during developmental surveillance, then developmental screening will be conducted to identify children who should receive intensive diagnosis using standardized tools such as Developmental Screening Tools (DSTs) and other

assessments. If the child has been suspected to be at risk of DD, then a diagnostic assessment is performed on a child involving multidisciplinary teams such as medical professionals, psychologist, geneticist, and developmental paediatrician.

In Malaysia, education for children with disabilities is provided by Ministry of Education (MOE) and Ministry of Women, Family and Community Development (MWFCD). The MWFCD through its Welfare Department provides learning and skills training for children with disabilities. The MOE through its Special Education Department coordinates all the special education programmmes. Children with Developmental Delay, Down Syndrome, and other learning disabilities are placed in self-contained special classes in the Learning Disabilities Programmes in regular schools (Jelas, & Mohd Ali, 2014).

Ministry of Women, Family and Community Development has stipulated the seven categories of disabilities which are hearing; vision, speech, physical, learning difficulties, mental and various (multiple disabilities) (Abdullah, Hanafi, & Hamdi, 2017). Each of the category will be further explained in Table 1 below:

Table 1: Categories of Disabilities Eligible for Registration as Persons With Disabilities

No.	Category	Explanation
1.	Hearing	Hearing Disability means unable to hear clearly in both ears without the use of a hearing aid or unable to hear at all even with the use of a hearing aid. Hearing disabilities can be divided into four levels, namely:- - Minimum 15 - <30decibels (a child) - 20 - <30decibels (adults) - Moderate 30 - <60/decibels - Severe 60 - <90/decibels - Profound ≥ 90/decibels
2.	Vision	Visual Disability means blind in both eyes OR blind in one eye OR limited vision in both eyes OR any other permanent visual impairment. Visual disabilities can be divided into:- - Low vision means vision that is worse than 6/18 but equal to or better than 3/60 even with the use of visual aids or a visual field that is less than 20 degrees from fixation. - Blindness means vision of less than 3/60 or a visual field of less than 10 degrees from fixation. ** Less than 3/60 means Counting Fingers (CF), Hand Movement (HM), Perception of Light (PL) and No-Light Perception (NPL). Other permanent visual disturbances (must be confirmed by an Ophthalmologist)
3.	Speech	Speech Disability means an inability to speak that impairs proper communication and cannot be understood by those who interact with the person. The condition is permanent or incurable. With regard to children, it must be based on an assessment at age five years and above. In case of doubt, an otorhinolaryngology expert is to be consulted.

4.	Physical	Physical Disability means the permanent inability of parts of the body whether caused by loss OR absence OR the inability of any part of the body that can affect their functions in fully carrying out basic activities. Basic activities refer to self-care, movement and changing the position of the body. The condition can occur as a result of injury (trauma) or disease in either the nervous cardiovascular, respiratory, haematology, immunology, urology, hepatobiliary, musculoskeletal, gynaecology and others systems that cause malfunctions. Examples of causes of malfunctions are: a. Limb defects (congenital / acquired), including loss of thumb b. Spinal Cord Injury c. Stroke d. Traumatic Brain Injury e. Dwarfism (achondroplasia) namely ≤ 142cm for men and ≤ 138cm for women f. Cerebral Palsy Note: Individuals who suffer from impairment without jeopardising their functionality, for example the loss of a finger, additional fingers (polydactyly) and without an earlobe or without a fully-formed earlobe cannot be considered for registration purposes.
5.	Learning difficulties	Learning Difficulties mean intellectual capabilities that do not conform with biological age. Those that fall within this category are Late Global Development, Down Syndrome and intellectual disabilities. This category also includes conditions that affect the learning ability of an individual such as autism (autistic spectrum disorder), Attention Deficit Hyperactivity Disorder (ADHD) and specific learning difficulties such as (dyslexia, dyscalculia and dysgraphia).

6.	Mental	Mental Disability: refers to a state of severe mental illness that causes an inability to function whether partly or fully in matters related to an individual or their relationships within the community. Among the types of mental illness are serious and chronic Organic Mental Disorder, Schizophrenia, Paranoia, Mood Disorder (depression, bipolar) and other Psychotic Disorders such as Schizoaffective Disorder and Persistent Delusional Disorders. Note: a. Clients must have undergone psychiatric treatment for at least two years. b. A psychiatrist will determine if the levels of social, cognitive and behavioural control functions of the patient are significantly or severely affected before (s)he is considered for the purpose of registration as a person with disabilities.
7.	Various (Multiple Disabilities)	Multiple Disabilities means having more than one type of disability and in general is not appropriate to be classified in category I to IV.

(Abdullah, Hanafi, & Hamdi, 2017)

1.3.1 Prevalence of Developmental Delay in Malaysia

In Malaysia, there is a lack of comprehensive and reliable statistics on the prevalence of disabilities amongst the population, specifically amongst children. The actual number of children with delays or disabilities is unavailable. The Department of Social Welfare, Ministry of Health and Ministry of Education keep separate databases on children with disabilities and their data has not been collated into a single source. The lack of comprehensive and reliable data results in a gross underestimate of the total population with disabilities (Amar, 2008). Hence, this may contribute to a large number of children with disabilities who remain undetected.

Generally, about 10 per cent of the world's population live with a disability (Enable, 2008). DD occurs in 2 to 3% of all children. The incidence of Developmental Delay that has been reported occurs in up to 15% of children under the age of five years, with the incidence increasing from 12.84% to 15.04% over the past 12 years (Boyle, Boulet, Schieve, Cohen, Blumberg, Yeargin-Allsopp, & Kogan, 2011).

In Malaysia, the number of children with special needs who are registered and reported from year 2004 to 2012 are a total of 22,089 cases (Ministry of Health Malaysia, 2013). The current figure of children with special needs (OKU) registered in Malaysia in year 2018, is 464,672, probably a fraction of the real figure (Jabatan Kebajikan Masyarakat, 2018). The children with 'special needs' include hearing impairment, visual impairment, physical disabilities, CP, DS, late development, autism, Attention Deficit Hyperactivity Disorder (ADHD), mental disabilities and other learning disabilities (Ministry of Health Malaysia, 2013).

1.3.2 Intervention programmes and services supported by government agencies in Malaysia

The government bodies that formulate and deliver programmmes and services are the MWFCD's Department of Social Welfare, the MOH, the MOE, the Economic Planning Unit in the Prime Minister's Department and the Performance Management and Delivery Unit (PEMANDU) in the Prime Minister's Department. These government bodies provide development, protection, rehabilitation and well being for children with disabilities (Unicef, 2013).

The education policy for children with disabilities are Education Act 1996 (Education Act) and the Education (Special Education) Regulations 1997 (Special Education Regulations) (Tin, 2013).

(a) Section 40 of the Education Act requires the Minister for Education to provide special education in special schools or designated primary and secondary

schools.

(b) The Special Education Regulations specify the children with disabilities who are eligible for special education.

(Tin, 2013)

The National Policy for Persons With Disabilities 2007 sets out the national strategies for the implementation of the provisions in the PWDs Act (Tin, 2013). The objectives of the National Policy for Persons with Disabilities 2007 are to achieve social integrity and stability, national fortitude and well-being for a progressive and established Malaysian society (Islam, 2015). The strategies of the National Policy for PWDs includes advocacy, accessibility to facilities, transport services and information and communications technology, health services, rehabilitation programmes, access to education, employment opportunities, personal safety and social protection, capacity development, participation of society in programmes for persons with disabilities, housing and development, advancement and empowerment of children with disabilities (Tin, 2013). These strategies in the National Policy for PWDs are executed through National Plans of Action.

In addition, the intervention programmes provided for children with disabilities in government schools are carried out by teachers who are trained in Special Education and Inclusive Education. The curriculum includes arts, mathematics, reading, science, social or moral education, writing and living skills in the primary and secondary school. The government has been reviewing and evaluating the past strategies and planning and implementing the current intervention programmes and services to cater for children with disabilities.

Intervention programmes and services are also provided by the Non-Governmental Organisations (NGOs) and the private sector in Malaysia.

1.3.3 Non-Governmental Organisations and the Private Sector in Malaysia

The Non-Governmental Organisations (NGOs) and private sector in Malaysia also plays a crucial role in providing education and protection for children with disabilities. The NGOs are non-profit learning and care centres. These centres also provide Early Intervention Programmes (EIP), counselling, rehabilitation and various programmes for children with disabilities and their parents. Some of the NGOs are Asia Community Services, Kiwanis Centre for Learning Disabilities, Malaysian Care, Selangor and Federal Territory Association for the Mentally Handicapped and United Voice. Besides, the National Early Childhood Intervention Council (NECIC) advocates for effective early childhood intervention methods and refining the special needs education system for children with disabilities. Other programmes that may be conducted by the NGOs include workshops and vocational training.

1.4 Rational and significance of the present study

There are a few considerations that contribute to the rationale of this study. Firstly, any child with DD is unique hence, an investigation is required to understand how such children function in their natural environment. In a country like Malaysia, support services for the disabled do not adequately address the need of such children. Children are under diagnosed and often given a generic label such as Developmental Delay. Most of the services have adopted models from industrialized countries. These adopted models may not be suitable and do not meet the needs of the disabled local population. The variables related to the manifestations of DD and the diversity of the society such children grow up in, necessitate treating them as individuals.

Parents and siblings are the closest persons to children with DD. Studies on interactions of children with DD are crucial to help families understand and learn about behaviours of such children and adopt strategies for interactions. Conversation Analysis

(CA) of children with DD will provide an opportunity to identify and study the interactional strength and weaknesses. Interactions with sibling and others may also provide successful learning environments at home and outside. Studies of interactions of sibling dyads may also suggest strategies that can facilitate interactions with siblings with disabilities.

The significance of the present study is that it is the first attempt at exploring naturally occurring interactions between a Malaysian female child diagnosed as developmentally delayed and her siblings in Malaysia.

This study will contribute deeper insights into DD and manifestations of this condition in a Malaysian child. Although a single-case study is not expected to produce generalizable findings, this study will potentially pave the way to establish a database for comparing other children with developmental disability so that informed decisions can be made about providing support for such children. The advantage of a single-case study is that it investigates a particular case in-depth (Yin, 2009). The qualitative methodology adopted enables the investigation of the child's routine interaction in her natural environment.

1.5 Statement of the problem

Little is known about how children with DD function and cope in their daily life. Specifically, in Malaysia DD is used as a generic term. Upon diagnosis in early childhood, intervention is provided in clinical settings. When the difficulties persist at school age, they are placed in special education programmes. Their development remains an understudied area of research. Hence, investigation of naturally occurring social interactions of children with DD in their homes and outside can provide opportunities to observe characteristics of their development or challenges that they face due to the delay in their development. Insights into issues related to DD can also be

gained from investigations of naturally occurring social interactions involving siblings of such children.

1.6 Objective of the present study

The main objective of the present study is to explore naturally occurring interactions between a child with DD and her siblings to gain insights into how she functions in her natural environment. The current study aims to identify the recurring patterns during play time in the interaction at home and outside between the child with DD and her siblings. Besides, the turns in sequences during other routine interaction between the child with DD and her siblings will be also scrutinized.

1.7 Research questions

The data analysis will ultimately answer the following research questions.

Research Question 1

What do the recurrent patterns of behaviour during play time reveal about interactions involving the child with DD and her siblings in the following environment?

a) home

b) outside

Research Question 2

What do other routine activities in and outside the home environment reveal about interactions involving the child with DD?

1.8 Concluding remarks

Children with DD have a slow development in their communication and social functioning. Children with speech and intellectual impairment may also experience delays in their speech and have communication problems. The number of children with disabilities in Malaysia is unavailable. In Malaysia, the government bodies formulate programmes and provide for children with disabilities. Programmes and services for children with disabilities are also provided by the non-governmental organisations and the private sector in Malaysia. The present study aims to explore the naturally occurring interactions between a child with DD and her siblings. The present study will also contribute insights into interactions of children with DD in Malaysia. This chapter has also stated the research questions of the present study.

The next chapter will discuss the literature relating to the linguistic profile of children with DD. It will also discuss the analysis of conversation of children with DD and TDC, behavioural problems and aggression in children with DD.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

This section will discuss the literature related to the current study. Section 2.1 introduces the concept of linguistic profile and discusses delay in development for some children due to various underlying factors. The following subsections discuss profiles of children with DD due to two common conditions i.e. with Down Syndrome (DS) and Autism Spectrum Disorder (ASD). Section 2.2 introduces conversation analysis and its application in studying the interactions of children with DD and TDC. Section 2.3 introduces behavioural problems and aggression in the interactions of children with DD and TDC. Section 2.4 is the concluding remarks of all the sections and it will also discuss the gap of the present study.

2.1 Linguistic profile of children with Developmental Delay (DD)

All aspects of a child's developments including their physical growth and cognitive levels can be charted from birth to adulthood. Comparison against milestones achieved by age-matched individuals can be indicative of underlying problems that may affect their development. At the age of six years, children would generally present well-developed language skills (Rosselli, Ardila, Matute, & Vélez-Uribe, 2014). However, not all children develop language skills similarly. A child's language may vary from another child.

Language deficits occur in children with Developmental Delay (DD) which include children with Autism Spectrum Disorder (ASD), Asperger Syndrome (AS), Cerebral Palsy (CP), Down Syndrome (DS), Intellectual Disability (ID), Language Impairment (LI), Language Development Disorder (LDD), Specific Language Impairment (SLI),

and Williams Syndrome (WS). In order to understand the language deficits of children with DD, it is important to present the basic subcomponents of language or linguistic system (Scully, as cited in Ypsilanti, & Grouios, 2008). The basic subcomponents of the linguistic system are phonology which deals with the system of sounds, grammar which includes morphology and syntax, vocabulary which includes the set of words used in speech production, and semantics which involves the understanding of the meaning of words and phrases (Ypsilanti, & Grouios, 2008). Code-switching in CA studies has also broadened the understanding of the organization of bilingual interactions by investigating the detailed structures of code alternation (Auer, 2013). Code-switching between the languages commonly used by Malaysian bilinguals and other Malaysian English features have been documented in local studies (Cheng, 2003; Rajadurai, 2004). Researchers have noted the use of the particle "la" or "lah" in the interactions of local Malaysian population (Cheng, 2003; Rajadurai, 2004). This would be additional linguistic elements that need to be focused on in the present study.

Acquisition of languages among children with DD occurs following the same sequence but at a slower pace than Typically Developing Children (TDC) (Wetmore, 2007). These children are characterized by limited language resources and phonological processing deficits, often such children produce structural simplification, syllable deletion and syllable addition in their speech (Bowen, 2014; Grunwell, 1988). Adding on to that, children with DD display difficulties in communication, such as poor articulation and comprehension, problems in constructing multiword utterances, initiating and maintaining interactions with others (Miller, Murray-Branch, Sedey, Miolo, & Rosin, 1991; Yoder, Spruytenburg, Edwards, & Davies, 1995). Therefore, language deficits may affect development in many ways such as academic learning, socialization and social behaviour.

2.1.1 Children with Down Syndrome (DS)

Children with DD due to DS produce simplified phonological processes, unclear or inaccurate pronunciation, with poor speech intelligibility (Dodd & Thompson, 2001; Kumin, 1994; Stoel-Gammon, 2001). These children often fail to provide appropriate responses to questions or comments, they provide insufficient or inadequate information, offer new and relevant contributions less often during interactions. Adolescents with DS also present word production inconsistency in their speech (Wong, Brebner, McCormack, & Butcher, 2015).

The speech of some children with DS may be delayed and sometimes unintelligible throughout their lives. Stoel-Gammon (2001) described that children with DS are delayed in the use of meaningful speech. They also acquire vocabulary at a slower rate compared to TDC. Researchers have examined parents perception of the speech and language skills of their children with DS. These researchers noted that 71%-94% of parents reported that their children with DS had difficulties with articulation (Pueschel & Hopman, as cited in Stoel-Gammon, 2001). Generally, the parents indicated that their children with DS were able of making them understand what they want.

The speech intelligibility of children with DS was also analyzed by Kumin (1994). The data was collected from 937 parent questionnaires. The researcher found that about 60% of the parents reported that their children with DS "frequently" had difficulties being understood in conversations (Kumin, as cited in Stoel-Gammon, 2001). The parents also noted that their children with DS had difficulties in articulation, which was ranked the highest with 80%. Besides, the parents reported that their children had difficulty in sequencing sounds and they made sound errors. Kumin (1994) concluded that children with DS had more difficulty constructing sentences compared to using single words.

Children with DS have significant speech problems (Chapman & Hesketh, 2000; Kumin, 1996). Their spontaneous speech is more unintelligible than control children (Abbeduto & Murphy, 2004). Due to their limited language resources and poor speech intelligibility, children with DS are unable to communicate with those around them. Like children with DS, children with ASD also have problems in social interaction.

2.1.2 Children with Autism Spectrum Disorder (ASD)

Children with DD due to ASD display disjointedness, limited involvement in social interaction, odd interests, or strange responses to people and the environment (Capps, Kehres, & Sigman, 1998; Lewis & Bodfish, 1998). Evidence from numerous sources have indicated that children and adolescents with ASD have slow and unusual speech production, limited nature of linguistic and social opportunities (Norbury & Bishop, 2002; Schopler & Mesibov, 1985; Tager-Flusberg, Paul, & Lord, 2005). Children with ASD may lack the ability of understanding other people's perspective, unable to comprehend or predict other people's responses towards their own action which leads them to lose interest in the interaction (Smith, 2004). It is also due to the lack of social interaction that affects their acquisition of speech and language skills (Stone & Yoder, 2001).

Some children with ASD are nonverbal and their language skills are usually limited (Lord & Rutter, 1994; Lord, Risi, & Pickles, 2004). Researchers indicated that 14–20% of children with ASD could be labelled as nonverbal (Lord, Risi & Pickels, as cited in Rice, Warren, & Betz, 2005). Children with ASD generally use fewer words in their daily interactions. Children with ASD also have a deviant pattern of language development due to their lack of language resources and lack of verbal communication skills (Rice, Warren, & Betz, 2005).

The acquisition and grammatical morphology based on data from spontaneous speech have also been studied by researchers. Bartolucci, Pierce and Streiner (1980) found that children with ASD omitted certain morphemes, specifically the articles (a, the), auxiliary, past tense and present progressive. Morphological and syntactic skills in the language of preschool-aged 3-6 years old, diagnosed with autism were investigated by Park, Yelland, Taffe, and Gray (2012). These researchers suggested that children with autism had unevenly developed morphological and syntactic sub-skills. Children with autism had some speech features which were atypical such as the use of verb phrases and some were delayed such as the use of past tense and sentence structure.

The studies of linguistic profiles of children with DS and ASD may provide statistical analysis such as percentages of speech features of such children. However, a methodology like Conversation Analysis (CA) enables researchers to examine single case and case series of interactions involving children with DD that can provide detailed insights into the interactions of such children with others.

2.2 Conversation Analysis and children with Developmental Delay (DD)

Conversation Analysis (CA) was developed in the late 1960s principally by sociologist Harvey Sacks and his close associates Emanual Schegloff (Schegloff, 2007) and Gail Jefferson. The work of conversation analysis was inspired by Harold Garfinkel's (Garfinkel, 1967, 1991) ethnomethodology and Erving Goffman's conception of the interaction order (Garfinkel, 1967, Goffman, 1983). The foundation of CA began with the collaboration of Sacks, Schgeloff, and Jefferson to study the order, organization and orderliness of social action, specifically in everyday interactions (Schegloff, 2007). CA is the study of recorded, naturally occurring talk-in-interaction (Hutchby & Wooffitt, 2008).

The theoretical framework of Ethnomethodology and Conversation Analysis (EMCA) provides a comprehensive means for investigating the interactions of children with developmental communication disorders including DD. While ethnomethodology establishes the framework for exploring the cultural aspect of the community within which the individual child with DD grows and experiences everyday life, the CA framework enables researchers to scrutinize the turn-by-turn construction of the interactions. Communication disorders that occur during early childhood lasting throughout the lifespan are referred to with the generic term developmental disorders. Children with developmental disorders may be delayed in a specific area or encompassing all the areas. The latter is referred to as Developmental Delay (DD).

2.2.1 Conversation Analysis as a methodology for investigating social interactions

To date, CA is a methodology employed to study the human social interaction across the discipline of sociology, linguistics and communication (Sidnell, & Stivers, 2012). CA has made significant contributions in exploring real-life interactions (McCabe, 2006). CA among the qualitative methodologies has been used to investigate naturally occurring interactions of children with communication disorders. CA adds the missing dimension which is the description of the consequences of language delay or language impairment on everyday interaction for children with communication disorders. Analyses of naturally occurring interactions have proven that clinical assessments of disorders that tend to focus on deficits in their language profiles do not give us a holistic understanding about their disabilities.

CA holds conversation as a collaborative achievement (Lynch 1997, Schegloff, 1991). Hence, the CA approach enables researchers to look at how the conversation

partners (CPs) are able to effectively support the individual with communication disorders in their interactions. It is believed that although this methodology only allows for studying a small number of individuals, it has the potential to provide an in-depth understanding about different aspects of particular impairments (Wilkinson, 2013). Clarke and Wilkinson (2008) identified the use of resources such as eye gaze and gestures to compensate for speech production difficulties of children with Cerebral Palsy (CP). In the naturally occurring interactions of children with communication disorders, both vocal (talk) and non-vocal (gaze, gesture, body orientation), are documented from the video recorded data to scrutinize how they are used by these children to systematically carry out sequentially organized activities (Korkiakangas, & Rae, 2014).

CA enables researchers to investigate the interactions of children with developmental communication disorders as well as children with Developmental Delay. A person with intellectual impairment may not have 'normal' interaction resources but the deviation from what is normal does not necessarily equate failure or communicative effectiveness (Perkins, 1995).

2.2.2 Conversation Analysis of children with Developmental Delay (DD)

Researchers have employed CA to study the interactions of children with DD due to ASD and children with DD due to syndromic conditions such as DS, Asperger Syndrome (AS) and Williams Syndrome (WS). Gardner (1998) explained that CA methodology in the studies of developmental delay and communication disorders respectively enables the identification and analysis of complexity that other methods might view as deficient. With the use of CA, interactions of children with DD which

appear to be incompetent can be analyzed in terms of the turn-taking sequences in their everyday interactions.

2.2.2.1 Conversation Analysis of children with DD due to Autism Spectrum Disorder (ASD)

Children with DD due to ASD are known to have deficits in social interaction with restricted and repetitive patterns of behaviours (American Speech-Language-Hearing Association, 1997). CA's data-driven approach allows the identification of interactional strength and weaknesses which provides a holistic understanding of children with ASD. Damico and Nelson (2005) undertook CA to analyze the conversations of a 13 years old individual diagnosed with autism and a clinician. This study focused on the recurrent behaviour of the participant and two problematic behaviours were revealed. The first behaviour was the high piercing creaking sound that occurred 42 times over five sessions. According to the clinician, the individual with autism often used this behaviour to display unhappiness. The second behaviour was termed "sparkle hands" (a pointing-like gesture) and this gesture was noted to occur 74 times during the sessions. The pointing-like gesture employed by the individual with autism appeared to be a requesting behaviour to request for objects or a new activity. These behaviours were found problematic because the individual lacked linguistic resources and was seen as a deficient speaker. However, the researchers viewed these problematic behaviours as emergent phenomena known as compensatory strategies used by the individual with autism (e.g., gestural signalling) to achieve desired communication.

Similarly, Stribling, Rae, and Dickerson's (2007) study noted repetitive behaviour of an adolescent girl, Helen, diagnosed with ASD which may be seen as a compensatory strategy used by the girl to achieve desired communication. The findings revealed two

forms of repetition that occurred regularly in Helen's talk. The first is the repeats of elements from another speaker's immediately before the talk or prior turn endings (PTR) (a form of immediate echolalia). The second is the repeats of the first lexical item within a turn or within-turn repeats (WTR). The latter is known as palilalia. Stribling and researchers noted that Helen presented limited verbal resources. The repetitive behaviour displayed by Helen may be irrelevant in the interaction when considered in isolation, but it may be seen as a compensatory strategy used by Helen to communicate. These researchers also noted the significance of the application of CA in understanding autistic children's pragmatic competence.

The analysis of conversations of a 6-year old child, Barney, diagnosed with autism and his CPs also led Geils and Knoetze (2008) to uncover the interactive styles and communicative behaviours. A feature of Barney's talk is that he frequently used the single word "yes" to fulfil turn obligations and repetitions in negotiation of meaning during the family interactions. He also used words from his co-participants to help him construct his turn in the interaction. Sometimes Barney responded in an unusual manner, with an "idiosyncratic" response. Barney also actively positioned himself, using the personal pronoun "*I*" within the interaction. Barney's family members appeared to be employing strategies such as the use of questions to initiate and sustain the interaction. However, the repetitive questioning by Barney's family members resulted in Barney's withdrawal from the interaction. Some of the other interactive styles used by the CPs while interacting with Barney were the combination of verbal and nonverbal communication, short and simple utterances, slower rate of speech and many repetitions. This study makes a significant contribution suggesting how findings from CA studies can be used to plan intervention. The co-participants and child with DD review and reflect on improving interaction involving the child with DD through mutual adaptation.

Children with ASD display catastrophic reactions when they are unable to interact and express themselves. Catastrophic reactions are also known as acting-out behaviours such as aggression and tantrums. These behaviours are associated with social interaction. Abendroth and Damico (2009) presented analysis of the catastrophic reactions of a child, named Patrick diagnosed with Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS). Observation was conducted in the natural settings of the participant. The three themes which emerged from the study were collaboration, negotiation and control. Firstly, Patrick and his mother were seen actively collaborating in their social interaction. Patrick appeared to be not interrupting when his mother was speaking and only took his turn when his mother had completed hers. Another way Patrick collaborated with his mother was when he cognitively processed what she spoke. An example from the conversation sample, was when Patrick's mother spoke, Patrick paused his crying and movement to process what his mother said. His mother also collaborated by asking leading questions during the interaction. Patrick was seen collaborating when he actively took cues from his mother. The cues given by Patrick's mother helped produce his verbal utterance. Despite the emotional outburst by Patrick, the data showed collaborative social interaction between the participant and his mother. Secondly, Patrick and his mother negotiated using social conventions, threats and verbal modification. Patrick used social conventions such as "please" to negotiate with his mother. The data showed that Patrick used "please" 14 times and approximately once every 31 seconds. The data analysis revealed how Patrick used discourse strategies to negotiate with his mother and how he produced catastrophic reactions as the outcome throughout the interaction. In the conversation sample, Patrick produced 36 declarative statements, 23 imperative statements and 1 interrogative statement. He screamed loudly and used nonverbal behaviour such as banging his head to express his unhappiness. Patrick's mother negotiated with him in a gentle manner

such as by using his nickname "*Paddy"*. His mother also used threats to negotiate with him when he refused to listen to her. Thirdly, Patrick had the desire to control his social partners and the situation. Due to Patrick's limited semiotic meditational capacity, Patrick sought to control the interaction. Semiotic meditational capacity can be described as the inability to understand or make meaning of the world (Damico & Nelson, 2005). Patrick's response to situations by raising his voice, screaming and stomping is a reaction to his social partners. However, Patrick's catastrophic reaction is seen as social interaction as he displayed turns in sequence. The data analysis evidently shows that Patrick was capable of interacting verbally and non-verbally with his CP. This study suggests that the catastrophic reactions of a child were not necessarily inappropriate but they may contribute to the interaction.

CA has been employed not only to study interactions between children with autism and their family in the home environment but also to study interactions of children with autism in the school environment. Yeo (2016) adopted CA to study the organization of lesson beginnings in the classroom interaction involving a group of children with ASD. The participants involved were three Year 5/6 students aged 11-12 years and two of their teachers in a special education centre. The findings revealed how these children and teachers collaborated in the interaction and noted recurrent courses such as greetings, topic talk and occasion task incipiency. Firstly, findings showed that greetings were frequently initiated by the teachers and directed to the students. The greeting sequence may also be abandoned if it caused problems such as student disalignment in the classroom. Students were also seen resisting to greet in the classroom which caused delays in the greeting sequence and progression towards the lesson tasks. Secondly, topic talk provided opportunity for students to participate in lessons, as well as sharing their ideas in the classroom interaction. In the course of topic talk, students employed techniques such as beginning with a preliminary action, using

single action turn constructional units and various response-mobilising resources. Students also produced inappropriate, problematic lexical and grammatical turns. However, teachers offered muted alignments such as muted and abrupt withdrawals at points of possible closure and dismissed topic talk to move to lesson tasks. Thirdly, teachers built task incipiency using different organisations such as various task materials. The teachers employed a combination of change of activity tokens ("so" and "now") as prefaces, interrogative turn formats, and imperatives. Students displayed multimodal compliance in response to the teacher's juncture-initiating turn and arrangements of lesson artefacts. The analysis of this study has shown that greetings and topic talk may interrupt task incipiency and how teacher's juncture-initiating turns obligate students to respond to initiations. Teachers also display deontic authority such as abandonment and rejections of problematic turns to ensure continuity of the lesson. Therefore, CA provides useful information about the interaction involving children with ASD, their communicative strengths and weaknesses which may be used to improve teaching practices.

2.2.2.2 Conversation Analysis of children with DD due to syndromic conditions

CA and the ethnomethodology approach allows researchers to focus on the examination of the methods of sense-making of children with DD due to syndromic conditions as they produce the reality of their everyday existence. Harry, Day and Quist (1998) employed ethnomethodology to investigate sibling interaction between a 12-year-old with Down Syndrome (DS) and his three brothers. The findings indicate a range of siblings roles within the family context. One of the themes that emerge from the data is big brothering, whereby the two older brothers of the child with DS were seen protecting, advising and helping the child with DS during interactions at home.

The peers of the child with DS also attempted to supervise the child with DS during classroom interactions. The researchers conclude that there is a need for peer facilitation for the child with DS to participate successfully in school.

Besides, children with DD due to Asperger Syndrome (AS) and Williams Syndrome (WS) also have impaired social interaction skills. Asperger Syndrome (AS) is known as a less severe form of autism. The American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM-5) in 2013 replaced Autistic disorder, Asperger's Syndrome, childhood disintegrative disorder and Pervasive Developmental Disorder- Not Otherwise Specified (PDD-NOS) with the umbrella diagnosis of Autism Spectrum Disorder (ASD) (American Psychiatric Association, 2013). Several individuals with Williams Syndrome (WS) are also diagnosed with autism (Klein-Tasman, Phillips, Lord, Mervis, & Gallo, 2009).

A conversation analytic approach was employed by Rendle-Short (2003) to investigate the interaction difficulties of an 8-year-old girl with AS. Rendle-Short (2003) analyzed a single telephone conversation of the child with AS with an adult and a peer. The findings reveal that the 8-year-old girl took unusually long pauses which created breakdowns during the conversation via telephone. The CPs that were engaged in the phone conversation with the child with AS were confused by such atypical pause lengths. However, the child with AS was fairly able to manage conversations with the CPs. Other trouble sources in interaction may also include the child's slow formulation or inappropriate intonation of the next turn. The adult or typically developing child tends to assume that the child had completed the utterance (Adams & Bishop, 1989). The trouble is usually resolved when the adult or sibling completes the child's turn or shifts the topic of conversation. Even if these children make any attempts to formulate the next turn or respond to initiations, they only produce "empty turns" such as "ah…",

"er…", "hmm…", or "uhm…" (Adams & Bishop, 1989). The child with DD does not make his or her relevant contribution to the discourse. In addition, an ethnographic study by Kremer-Sadlik (2004) analyse question and answer sequences during dinner time interaction in families which included a child with AS or autism. The findings of Kremer-Sadlik's (2004) study unfolded that the children with autism were able to comprehend their CPs communicative intentions, turn-taking conventions and could engage in joint-attention whereas the children with AS were able to participate in the question-answer adjacency pair sequences relatively competently. The children with autism also provided relevant responses which were marked by their CPs as acceptable. Kremer-Sadlik's (2004) study proposed that children with AS and children with autism may perform well in supportive environments such as with family.

A study by Stojanovik (2006) investigated the social abilities of a group of children with WS and compared them to a group of children with SLI and a group of TDC. The researcher conducted semi-structured conversations and selected utterances were analyzed for aspects such as conversational inadequacy and turn-taking sequences. The study found that children with WS had pragmatic difficulties and they responded inappropriately to the interlocutor's requests for clarification and information. Children with WS failed to interpret either literal or inferential meaning of the interlocutor's utterance compared to TDC. The children with SLI also provided little information and inadequate responses to their CPs.

Hence, CA studies of children with DD due to syndromic conditions have demonstrated how these children interact with their CPs and the researchers have highlighted the important role family members play to encourage them in their interactions. CA has also been applied as a methodology to examine the everyday interactions of typically developing children with their family members and peers.

2.2.3 Analysis of typically developing children's interaction

Researchers have applied CA to investigate the interactions of typically developing children (TDC), particularly to understand the sequential detail of children's interaction on a turn-by-turn basis (Gardner, & Forrester, 2009). Like CA studies of children DD, CA studies of TDC examines how TDC use talk to accomplish social action and how these children make sense of their worlds (Lamont-Mills, & Christensen, 2018).

TDC are seen displaying affiliative or disaffiliative behaviour during the turns at talk in their daily life (Goodwin, 2006). Researchers have addressed children's dominance, their conflict and disputes in interactions (Goodwin, 1980, 1990, 1995; Dandy & Theobald, 2012). Goodwin (1995) employed CA to analyse the co-construction in girls hopscotch in terms of the turn-taking throughout the course of the game and the pattern of interaction displayed by the girls were negotiation. The girls were seen very interested in negotiating features of the game. The girls signalled opposition through an expression of polarity such as "No" and displayed disagreement through raised voice. They also exhibited opposition through response cry terms such as "EY!" or "Ah:!". The girls indicated violation by yelling the word "out" when one of the player's foot or token lands outside of the square. These children also broke the rules of the game such as stepping on a line or throwing one's bean bag into an inappropriate square. Consequently, the girls who broke the rule during play caused conflict in the game. These girls used a negative person descriptor "Chillona" which means "Cheater". Although the conflict arose during the play, the girls were seen collaborating with one another throughout the course of the game.

Interestingly, a male child's talk during play time can be contrasted with a female child's talk during play. A male child uses directives which demonstrate how boys operate within a hierarchical structure whereas a female child participates jointly in

decision making (Goodwin 1990). The pattern of dominance is relevant among boy's interaction during play as Goodwin's (1980) elaborates on the patterns of boy's play in Philadelphia such as verbally asserting one's dominance and challenging the dominant claims of others. Other patterns may include, giving verbal commands such as "Get up", or "Give it to me", name-calling or verbal threats (Savin-Williams, 1976). Besides, girls were also seen bragging about their successful play, e.g. during hopscotch in Pico Union, these girls used the local language to announce their victory (Voy ganando! Voy ganando! EY:::::::::!) (I'm winning! I'm winning! Yeah!) (Goodwin 1990).

Danby and Theobald (2012) presented a collection of papers that discussed children's disputes in various contexts of their everyday life. Busch's (2012) study is one of the papers in the volume. Busch (2012) employed EMCA to explore how disputes between family are accomplished during family mealtime and how the actions of the family members contribute to the unfolding dispute. The analysis revealed how the mother and elder sibling intervene through directions, topic shift and physical interventions to resolve the dispute in interactions with the child. Bateman (2012) analyzed the disputes of 4 years old children during their morning playtime at a primary school and found that these children used gestures to support their verbal actions. Besides, Davidson (2012) examined disputes of two young children in the course of computer activity which showed how children turn agreement into disagreement over time. These researchers have not only shown interest in examining children's disputes in various settings and social worlds but also contributed to research in the field of children's disputes.

Researchers claimed that institutions such as schools play an important role in children's peer interactions. Cederborg (2018) investigated how children negotiate participation rights during peer play in preschool. The researcher analyzed how these children include and exclude each other during the activity. CA was employed to sequentially study the verbal and non-verbal interaction of these children. The

researcher concluded that these children were capable of advanced social acts when playing with their peers. Jensen's (2018) study also contributed to research in the field of children's social life in institutions. Jensen's (2018) study found that the children were more occupied with differences marked by their experience and possessions. These children did not relate sameness or differences to their peer relations or to gender or ethnicity.

Thus, CA employed in studies of children with DD and TDC have analysed children's everyday interactions and their disputes during play. Researchers have also proposed that CPs provide opportunities for these children. However, studies on behavioural problems and aggression in children with DD and TDC are only available quantitatively.

2.3 Behavioural problems and aggression in children with Developmental Delay (DD)

Researches have shown interest in studying behavioural problems, aggression and interaction issues of children with DD especially children with Communication Disorders (CD) and Language Impairments (LI) (Rogers-Adkinson & Griffith, 1999; Van Daal, Verhoeven, & Van Balkom, 2007). Children with DD tend to have numerous behavioural, emotional and social problems (Baker, McIntyre, Blacher, Crnic, Edelbrock, & Low, 2003) which causes poor academic outcomes (Baker & Cantwell, 1982) and literacy difficulties later in life (Preston, Frost, Menc, Fulbright, Landi, Grigorenko, Jacobsen, & Pugh, 2010). Behaviour problems and aggression are often associated with children with communication disorders, namely those diagnosed with genetic like Down Syndrome (DS) (Bhatia, Kabra, & Sapra, 2005) and those with

Autism Spectrum Disorder (ASD) (Dominick, Davis, Lainhart, Tager-Flusberg, & Folstein, 2007).

Children with ASD display maladaptive behaviours (Hartley, Sikora, & McCoy, 2008) and abnormal behaviours (Dominick et al., 2007). Maladaptive behaviours include aggression, self-injurious behaviour, uncooperative behaviour and withdrawal whereas abnormal behaviours include aggression to self and others and temper tantrums. A meta-analysis of 86 studies, evidently indicated that individuals with autism and Intellectual Disability (ID) were likely to display aggression and self-injury (McClintock, Hall, & Oliver, 2003). However, these behaviours, in the context of autism, depend on the severity of the individuals' symptoms and other aspects such as intelligence and language.

2.3.1 Studies on behavioural problems and aggression

Behaviour problems can be categorized into externalizing behaviour problems, internalizing behaviour problems, cognitive problems and social problems (Van Daal, Verhoeven, & Van Balkom, 2007). Externalizing behaviour problems include aggression. Speech-language pathologists have reported that children with communication disorders display aggression (Sanger, Moore-Brown, Montgomery, & Hellerich, 2004). Internalizing behaviour problems include anxiety, and withdrawn behaviour (Van Daal, Verhoeven, & Van Balkom, 2007). Cognitive problems are related to problems with attention and information processing whereas social problems include difficulties in interaction with peers which lead to a lack of positive social interactions (van Daal, 2008).

There are also many sub-types of aggression that have been studied in children and two of the most commonly used sub-types are reactive aggression and proactive aggression. Researchers have carried out studies on these sub-types of aggression in children and adolescents (Connor, 2002). Reactive aggression is a hostile act displayed in response to a perceived threat whereas proactive aggression is a non-provoked aversive act aimed to influence others (Dodge & Coie, as cited in Poulin, & Boivin, 2000).

Behavioural problems and aggression of children with DD and TDC have been studied quantitatively with tools such as the [Atypical Behaviour Patterns Questionnaire (ABPQ), the Child Behaviour Checklist (CBCL), the Revised Behavior Problem Checklist (RBPC)], parent reports, interview and questionnaires.

2.3.2 Behavioural problems and aggression in interactions of children with DD

The behavioural problems of children with ASD and History of Language Impairment (HLI) have led Dominick et al. (2007) to uncover the frequency, course and inter-relationships of atypical eating, abnormal sleep, self-injurious behaviour, aggression and tantrums of these children. These researchers used the Atypical Behavior Patterns Questionnaire (ABPQ), and surveyed behaviours such as abnormal sleep, self-injurious behaviour, aggression (included hitting, kicking, biting, and pinching), and tantrums (included crying, flailing, and yelling). The results revealed that behaviours such as self-injurious behaviours and temper tantrums were more common in children with ASD than HLI. The children with ASD were engaged in aggression most of the time. Their aggression was most often displayed towards their parents (88%) and siblings (75%) at home and teachers (70%) at school.

Behaviour problems of children with DS were also investigated by Coe, Matson, Russell, Slifer, Capone, Baglio, & Stallings, (1999) using the Revised Behavior Problem Checklist (RBPC). The researchers found that children with DS had more behaviour problems compared to the control group, specifically problems such as non-compliant behaviour and withdrawn behaviour. The mothers of these children rated that "approximately one in three children with DS was identified with significant behaviour problem which exceeded the controlled group by almost a three to one margin" (pg 153). The teacher rated that almost 60% of children with DS have behavioural problems. The teachers were more concerned with the social withdrawal and psychotic behaviours (e.g. repetitive speech) of children with DS. These findings are similar to Bhatia, Kabra and Sapra's (2005) study of behavioural problems in children with DS. Bhatia and his colleagues found that 55% of children with DS displayed behavioural problems as compared to 12.5% in the control group.

Additionally, researchers have also conformed the role asymmetries of the sibling of disabled children as "leaders" of the interaction (Knott, Lewis & Williams, 1995; 2007; Pelletier, Pepler, Crozier, Stanhope, Corter, & Abramovitch, 1986; Stoneman, Brody, Davis & Crapps, 1987). Knott and researchers presented two contrasting hypotheses which were partially supported. The first is that research on siblings would predict that disabled children adopt responsive roles and the second is that research on children with autism would predict impoverished interaction (Knott, Lewis & Williams, 1995). The first hypothesis conformed the role asymmetries of the sibling of disabled children as "leaders" of the interaction. The "Autistic Dyads" made about 30 prosocial initiations as well as responding positively to each other about 40% - 50% of the time. The data also supported the second hypothesis as the rates of interactions of children with DS with their siblings were higher than the rates of interaction of children with autism and their siblings. The findings of this study are similar to those reported by previous studies that

children DS were found to be more imitative and less initiative than TDC (Abramovitch, Stanhope, Pepler, & Corter, 1987; Dallas, Stevenson & McGurk, 1993).

Knott and researchers (2007) found that siblings with autism exhibited prosocial communicative behaviours such as laughing, sharing an object, and requesting. Other behaviours exhibited by the siblings with autism were antagonistic communicative behaviours such as commanding, physical aggression, object struggle, and threatening. The siblings with autism imitated their Typically Developing Sibling (TDS) less often and responded positively to their initiation. However, the siblings with DS imitated their TDS and responded positively to their initiation with a greater frequency than the sibling with autism did. The analysis also concluded that TDS led and managed interactions with their siblings with autism.

Communicative behaviours exhibited by sibling pairs of one TDC and their sibling with ASD were also documented by Hodge (2015). The researcher adopted 70 communicative codes which comprised 47 subordinate categories and 23 superordinate categories to define the communicative behaviours of both the siblings. Some of the 47 subordinate categories included crying, grabbing, disapproval, hitting, kicking, laughing, pinching, pushing, pointing, rejection and threats. Some of the 23 superordinate categories included commands, gestures, initiations, questions, response, signs of affection, sharing, and verbal imitation. The TDC exhibited a total of 586 communicative behaviours whereas the siblings with ASD exhibited a greater grand total of 618 communicative behaviours. TDC also offered guidance, explanation of instructions and advice for their siblings with ASD when they displayed inappropriate behaviour during an activity. The siblings with ASD sometimes appeared to be displaying disinterest during play. It was also reported that siblings with ASD exhibited a greater total frequency of occurrence of several nonverbal communicative behaviours

utilized to express emotions and respond during interactions with TDC. The siblings with ASD also displayed annoyance when they were forced to do something and hit TDC.

Research has suggested that sibling interaction play a significant role in children's development, it has been very rarely studied in younger children with an older brother or older sister with ASD (Bontinck, Warreyn, Van der Paelt, Demurie, & Roeyers, 2018). Bountinck and colleagues (2018) compared and evaluated the characteristics of interaction between 18-month-old infants and their older siblings with ASD with a control group of 18-month-old infants and their typically developing (TD) older sibling. These researchers observed that during play time children with ASD displayed higher levels of negative behaviour. High-Risk (HR) siblings and children with ASD displayed a high level of negative behaviour than Low-Risk (LR) siblings and TD older children, particularly negative initiations by ASD siblings and negative responses by ASD siblings and HR siblings. ASD siblings exhibited negative initiations such as taking a toy from the sibling or giving a command. The negative responses exhibited by ASD siblings and HR siblings included refusing to comply with a request such as giving a toy and counterattacks such as being aggressive when the sibling took a toy away. The researchers also noted that older children initiated interaction most of the time in a negative manner possibly displaying dominance whereas the younger sibling followed and responded in a positive manner.

Children with Language Development Disorder (LDD) also showed behavioural problems. Willinger, Brunner, Diendorfer-Radner, Sams, Sirsch, & Eisenwort, (2003) assessed and compared 94 children with LDD between ages of 4 and 6 years and 94 children matched by age and sex without LDD for behavioural problems via administration of Child Behaviour Checklist (CBCL). The study revealed that 34% of

children with LDD exhibited behavioural problems in the clinical range. Van Daal, Verhoeven, and Van Balkom's (2007) assessed 71 five-year-old children with Language Impairment (LI) for their language abilities via an extensive battery of language test and investigated the children's behaviour via administration of CBCL. The findings revealed that 40% of the children with LI had serious behavioural problem. The parent of these children indicated that the most frequent occurrence of behaviour was "aggressive behaviour and withdrawn behaviour".

Behaviour problems of children with and without Developmental Delay (DD) were also investigated by Baker, Blacher and Edelbrock (2002). These researchers examined behaviour problems in 225 three-year-old children with or without DD and the relative impact of cognitive delays and problem behaviours on their parents. The measures used were staff-completed Bayley Behavior Scales and parent-completed Child Behavior Checklist (CBCL). The parents of children with DD reported greater total of CBCL scores and greater broad-band internalizing problem scores compared to parents of children without DD. The children with DD were 3 to 4 times more likely to have a total CBCL score within the clinical range. Baker and colleagues noted that the parents of children with DD had more stress compared to parents of children without DD. The regression analyses showed that the child with DD's behaviour problems was a stronger contributor to their parents' stress than was the child's cognitive delay.

In a longitudinal study, Baker, McIntyre, Blacher, Crnic, Edelbrock, and Low (2003) analyzed the early manifestation and continuity of problem behaviours for two years in 205 children ages 3 to 5 years old with Intellectual Disability (ID). Measures such as Bayley Scales of Infant Development II (BSID-II), Child Behaviour Checklist (CBCL), and Family Impact Questionnaire (FIQ) were used. The findings revealed that the parents of children with ID showed high agreement in their rating of child problems.

The parents of these children rated that children with DD had more behaviour problems compared to their non-delayed peers and about three times more likely to score in the clinical range. The parental stress was also higher due to the behaviour problem of the child rather than the child's DD. The findings were extended and reported by Baker, Blacher and Olsson's (2005) study in two directions. These researchers examined the relationship of developmental delays and behaviour problems to less child-focused indicators of parental well-being, depression and marital adjustment. The researchers also examined the parent's personality trait of optimism-pessimism as a possible moderator of the relationship between challenging child behaviour and parental well-being. The analyses indicated that parents of delayed and non-delayed children did not differ on depression and marital adjustment. However, when the child presented behaviour problems in the clinical range, the parents reported more symptoms of depression and lower marital adjustment. When children displayed more behavioural problems, mothers who were less optimistic reported lower scores on measures of well-being compared to mothers who were more optimistic.

Therefore, language deficits in children with DD affect not only their communication but also interaction. Adding on to that, problematic behaviour and aggression inevitably surface in most of the interaction and it also becomes an issue in routine interactions of children with DD. However, the presence of family and siblings may provide opportunities for interactions of such children. Family are children's primary educators and they have the greatest influence in shaping and improving the child's early learning opportunities, attitudes, behaviours and social development. Research has also indicated that children with DD more often initiated interaction with their typically developing sibling compared to their parents and children spend more time with one another than they do with their parents (Lobato, 1990; Meyers & Vipond, 2005). Siblings play vital roles in the lives of children with disability, such as interpreting for the children when

others do not understand them and protecting them from possible conflict with others and bullying (Barr, McLeod, & Daniel, 2008). The siblings of children with disability have a lifelong impact and they significantly contribute to the child's development, provide opportunities in building the foundations of important social and emotional skills such as sharing and conflict resolution (Parker & Stimpson, 2002; Powell & Gallagher, 1993; Santrock, 2001). Interestingly, TDC may also display behavioural problems and aggression in their everyday interactions with their peers, siblings or others. It is possible that in interactions of the child with DD focused in this study, the TDC siblings may also display such problems.

2.3.3 Behavioural problems and aggression in interactions of typically developing children

Typically developing children competently organize their social worlds through sequences of verbal and physical actions in their everyday life. Researchers have found that TDC tend to display aggression and behavioural problems towards peers. A study by Hubbard, Smithmyer, Ramsden, Parker, Flanagan, Dearing, Relyea, and Simons, (2002) examined the relations between reactive versus proactive aggression to child's anger, which was assessed using observational, physiological and self-report measures. The study involved 272 second-grade boys and girls who participated and lost in a board game to a confederate who cheated. The study hypothesized that the children's anger was positively related to reactive aggression but not to proactive aggression in terms of the measure of anger that were accumulated across the game playing period and the rates of increase in children's anger over the course of the game. The children displayed angry nonverbal behaviours which were aggregated over the game and positively related to reactive aggression. Throughout the game, the rate at which the

children showed increased angry nonverbal behaviour was positively related to reactive aggression. The children who displayed high reactive aggression were engaged in rough behaviours such as hitting during the game while the children with low reactive aggression displayed low rate of such behaviours.

The literature on behavioural problems and aggression of TDC have also been studied quantitatively. Quantitative studies may not provide an in-depth understanding about how such children display behavioural problems and aggression. Contrarily, a Conversation Analysis (CA) study can analyze interactions of children with DD or TDC, specifically noting the initiations of such behaviour and turn-taking organization.

2.4 Concluding remarks

Researchers have concluded that children with DD due to DS and ASD have poor speech intelligibility and communication problems. CA approach has been applied to scrutinize the social interactions of children with DD and TDC. Evidently, studies have reported the children with DD and TDC display aggression and behavioural problems. The available related studies on children with developmental disorders serve as a reference point. Although the behavioural problems reported in these studies could be related to problems specific to conditions such as autism spectrum disorder and Down syndrome, these studies remain relevant. Behavioural problems of children with DD are also reported in the quantitative study reviewed above. However, similar studies reporting on statistical analysis of data obtained through the Atypical Behaviour Patterns Questionnaire (ABPQ), the Child Behaviour Checklist (CBCL), the Revised Behavior Problem Checklist (RBPC), parent and teacher ratings and reports, indicate a common challenge among children with developmental disorders. The limitations of quantitative studies are that these do not provide evidence of the context of behavioural

problems that are displayed. Neither do these studies account for the role of other participants in initiating problematic behaviours. The studies reviewed above are also international studies as local studies are limited and unavailable. Based on this reasoning, it is important to carry out the present qualitative study to investigate how a Malaysian female child diagnosed with Developmental Delay with speech and intellectual impairment, functions in her natural environment inside and outside the home. Quantitative studies may draw samples from large scale data sets, however, the present single case study provides a rich description of the interactional phenomenon of the child with DD and her siblings.

The next chapter will discuss the methodology of the current study, the participants of the study, data collection procedures, recordings and approach to analysis.

CHAPTER 3: METHODOLOGY

3.0 Introduction

This section will discuss the methodology of the current study. Section 3.1 discusses the participants of the study. The following subsections describe the child with Developmental Delay (DD), the siblings, and others. Section 3.2 presents the data collection procedures. Section 3.3 discusses the recordings and section 3.4 discusses the approach to analysis. Section 3.5 will present the concluding remark.

3.1 Participants of the study

The participants of the current study include the child with Developmental Delay (DD) and her siblings. At the stage of participant recruitment itself, permission and consent were obtained from the mother of the child with DD (refer to Appendix A and Appendix B). The aim of the study and procedures involved was explained clearly to the mother of the child with DD. The background information of the child with DD and her siblings was obtained (refer to Appendix C).

3.1.1 The child with Developmental Delay (DD)

The focal participant of the present study is an 8-year-old Malaysian female child, Manny (not her real name), diagnosed with Developmental Delay (DD). The mother of this child with DD stated that Manny has a tendency to show aggression especially when she is around her siblings. The mother has confirmed this to be a recurring issue during interactions. She also shared that Manny is very caring and attentive when interacting with siblings.

Table 3.1: Profile of the child with DD

Name	Manny*
Age	8 years old
Birth order	Secondborn
Gender	Female
Ethnicity	Punjabi
Language spoken	English, Punjabi, Malay

*pseudonym assigned to maintain anonymity

Manny is the second born child in a Punjabi family. Manny speaks in English most of the time and displays limited proficiency in Punjabi and Malay. The language reportedly used in their home is Punjabi. Manny's mother identifies Punjabi to be her first language. Additionally, Malay language is exposed to Manny through the educational system she is enrolled in.

(a) Medical history

Initially, Manny was diagnosed with Russell Silver Syndrome (RSS) based on her facial features and other physical attributes but a recently conducted genetic test proved to be inconclusive. Manny is an 8-year-old Malaysian female child, diagnosed with developmental delay (DD) with speech and intellectual impairment (refer to Appendix D). Manny was noted to have microcephaly (refer to Appendix D). The attending paediatrician's notes documented Manny's physical features including a triangular face shape, with a prominent tongue, left preauricular skin tag, and one cafe au lait spot on the left arm (refer to Appendix D).

Manny's mother reported no pre-natal complications and that her child was born full-term (38 weeks). Manny's mother shared that she is a very cheerful and happy person, "She cheers everyone up, laughs loudly, she is so playful, she loves music and she loves

dancing". Manny was born term spontaneous vaginal delivery (SVD) with BW 2.9 kg with AS 9/10 (refer to Appendix D). Manny's baseline chromosome analysis was normal (refer to Appendix D). Her hearing and eye assessment were also normal (refer to Appendix D). According to the mother, Manny started receiving speech therapy at the age of 2 years and 9 months at the Pediatric Clinic in the Hospital. Manny is unable to read and write (refer to Appendix E). However, she is very responsive to music, will dance and sing to the rhythm (refer to Appendix E). The mother stated that the doctor prescribed multivitamins for Manny's overall health and hormonal balance. At the age of 3 years, Manny spoke for the very first time and she only produced one word, noted by the attending nurse (refer to Appendix F). Manny's head measurement was small (34 cm), noted by the attending nurse (refer to Appendix G). Manny was referred to a specialist for small head growth and follow up appointments (refer to Appendix G).

At present, she is attending special school and activities of daily living (ADL) independent (refer to Appendix E). According to the reporting practitioner, Manny has a significant delay in speech, she imitates more than being self-expressive, there is no concern with receptive and she can only name a few colours (refer Appendix E). Currently, she is under the pediatric clinic follow up as well as occupational therapy and speech therapy follow up (refer Appendix D).

3.1.2 Siblings

Sibling 1 and 2 are the siblings of Manny, with their profiles stated in Table 3.2 below.

Table 3.2: Profile of siblings 1 & 2

	Sibling 1	Sibling 2
Name	Ken*	Galina*
Age	12 years old	7 years old
Birth order	Firstborn	Lastborn
Gender	Male	Female
Ethnicity	Punjabi	Punjabi
Language spoken	English, Punjabi, Malay	English, Punjabi, Malay

*pseudonym assigned to maintain anonymity

Manny's siblings include Ken, the eldest sibling and Galina, the youngest sibling, aged 12 and 7 respectively. Ken and Galina speak English most of the time in the interactions at home and outside the home. They also speak in Punjabi and Malay.

3.1.3 Others present

Others present during the interactions include a child and adults stated in Table 3.3 below.

Table 3.3: Profile of a child and other adults

	Child 1	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5
Name	Roy*	Mom*	Sheila*	Rose*	Honey*	Dadu*
Age	12 years old	35 years old	45 years old	58 years old	24 years old	75 years old
Gender	Male	Female	Female	Female	Male	Male
Ethnicity	Punjabi	Punjabi	Punjabi	Punjabi	Punjabi	Punjabi
Language spoken	Punjabi, English, Malay	Punjabi, English, Malay	Punjabi, English, Malay	Punjabi, English, Malay	Punjabi, English	Punjabi, English, Malay

*pseudonym assigned to maintain anonymity

The others present during the interactions include a child, Roy who is a friend of the three children. Roy participates in the activities outside with the children. The mother of the three children and the 75 years old grandfather also participated in the interactions. These adults live in the same house as the children. Other adult visitors who were present during the home interaction include their aunts, Sheila and Rose, aged 45 and 58 respectively. All the adults present are proficient in Punjabi, English and Malay. Honey, a cousin visiting from India who speaks only Punjabi and English also participates in the activities at home with the children.

Permission was also obtained from the mother, grandfather, the aunts, Sheila and Rose, Roy's mother, and the visiting cousin, Honey (refer to Appendix B). The background information of the mother of the child with DD, the grandfather, Sheila, Rose, Roy and Honey was obtained (refer to Appendix C).

3.2. Data collection procedures

Sacks, Schgeloff, and Jefferson founded the Conversation Analysis (CA) methodology adopted in this study. Sacks pioneered the detailed studies of the way people used language in their natural environment. In this case study, CA methodology employed investigates the natural conversation and social organisation of interactions involving one child with a disability and her family (see participant description in Section 3.1). Jefferson developed the methods and conventions for transcribing talk. This systematic approach to analysis enables the insider perspectives on what is accomplished in turns at talk. Schegloff introduced elements such as adjacency pairs, code-switching, overlapping talk, turn-by-turn construction, turn completion, turn sequence and turn-taking. These elements allow researchers to study how turns at talk

are combined to make actions take place in conversation (Schegloff, 2007). The terminologies of CA will be further explained in Table 3.4 below:

Table 3.4: Terminologies of Conversation Analysis (CA)

Terminologies of Conversation Analysis (CA)	Use
Adjacency pairs	An adjacency pair is composed of two turns/utterances produced by two different speakers in which the second is related to the first in a specific way.
Code-switching	Code-switching is when one speaker alternates between two or more languages or varieties of language in conversation. E.g. Malay language and Punjabi language.
Overlapping talk	An overlapping talk is when more than one speaker is engaging in a conversation, which can cause interruption while both parties are speaking at the same time.
Turn-by-turn construction	A turn-by-turn construction can be described as pieces of conversation which may comprise an entire turn. It also means two or more people take turns/construct turns in interaction.
Turn completion	A turn completion is when one speaker completes his/her turn in interaction or when one speaker possibly completes another speaker's turn in interaction.
Turn sequence	A turn sequence may consist of one speaker asking a question or requesting a certain action, and another speaker's response.
Turn-taking	Turn-taking is when participants speak one at a time in alternating turns.

3.2.1 Pilot study

The initial observations include a pilot study. The pilot study was conducted with the participant over a period of three months enabling the researcher to familiarize with the children and observe the interaction between Manny and her siblings in the natural environment in the home and outside the home.

The preliminary findings suggested that;

i) most of the participant's interactions involved her siblings (i.e. Ken, the elder brother and Galina, the younger sister).

ii) the participant often displayed aggression towards her siblings.

iii) the interactions were not limited to the home (the mother reports that interaction of all her three children takes place at the place of worship and during outdoor activities like swimming).

The preliminary findings from the pilot study also guide the design and data collection procedures for the current study.

This research was carried out using qualitative methods namely ethnographic observations and recordings. Medical documents, medical reports and medical notes were additional supplements. A schedule for conducting the research was planned, such as routine activity with siblings and the mother, types of activities, the place and frequency of the video recordings. All details of the observations such as activity types, events, time, location and duration were identified for every visit to Manny's home. All the notes were documented. The researcher noted aspects such as the time of the day or night, activity type, event and location to determine whether these aspects influenced the on-going activity or occurrence of the conflict between Manny and her siblings. The

observable and note-worthy actions and behaviours of Manny and her siblings were also noted.

3.2.2 Ethical considerations

Ethical considerations have been strictly taken into account for the present study. At the stage of participant recruitment itself, the aim of the study and procedures involved was explained clearly to the mother of the child with DD. She then signed the informed consent letter. Manny's anonymity and confidentiality have been maintained throughout the research process. Manny and her siblings will not be named unless it becomes essential for the pursuit of the research in question. If and when it does, permission will be explicitly sought to use the participants' real name. Otherwise, all the participants will be referred to with a pseudonym. The video recordings will be used in accordance with the approval of the participant's mother. The ethical consideration is vital to respect the participant's rights.

3.2.3 Video recordings

Each recording was kept for establishing the context. Video recordings of naturally occurring interactions are the primary data collected for the present study. An iPhone was used to record all the interactions between Manny and her siblings. The researcher was standing about one to two meters away from the children when recording. Video recordings of Manny and her siblings were made at a regular interval of once a month for six months. This included family interactions in the home environment and outside their home. Each recording is between 30 and 60 minutes long. Manny and her siblings were aware that their interactions were being recorded. However, the pilot study

familiarized the children with the recordings. The video recording of interactions between Manny and her siblings' enable the researcher to listen to Manny's speech repeatedly and see her gestures to help identify the recurring and deviant patterns in the interactions. The video recordings also enable the researcher to study Manny and her siblings' speech and gestures throughout their interaction. The use of video recording also captured the non-verbal communication of the participants. Screen captures of the recording are also included to identify and study the gestures of the participants. The researcher was present during the video recordings of Manny and her siblings. There were times when the recording had to be stopped because of the physical harm to the children. The safety of the child and others were kept as the priority in this study. The details of the video recordings will be further explained in Table 3.5 below:

Table 3.5: Details of video recordings

Extract number	Month	At home/ Type of activity	Duration of activity	Time of activity
1	February	Play activity (Hide-and-Seek)	33 minutes	Afternoon
2	March	Play activity (Wrestling)	40 minutes	Morning
3	April	Play activity	1 hour	Afternoon
4	May	Play activity (Bedroom play)	38 minutes	Night
8	June	Household chore	33 minutes	Morning
9	July	Getting ready to go out	1 hour	Morning
10	August	Selecting clothes to wear	31 minutes	Night

Extract number	Month	Outside/ Type of activity	Duration of activity	Time of activity
5	February	Play activity	35 minutes	Evening
6	March	Play activity (Swimming)	1 hour	Afternoon
7	April	Play activity (Card game)	30 minutes	Evening
11	June	Shopping at a mall	1 hour	Afternoon
12	July	Shopping at a grocery store	50 minutes	Afternoon

3.2.4 Transcription procedure

The selected sections of the video recording were transcribed following the Jeffersonian system of transcription notation (refer to Appendix H). The sequences were coded according to salient themes. The researcher listened through carefully the selected sections, identified the voices of the participants, the sequential organization e.g. participants' turns at talk and transcribed following the Jeffersonian system of transcription notation.

3.3 Approach to analysis

The researcher examined the extracts of transcripts carefully to gain insights about the interactions and sense of the data. The extracts selected for analysis were based on the salient themes such as aggressive behaviour displayed by Manny. The data was generated from a variety of naturally occurring situations of interaction in the family home, inside the home such as in the children's bedroom and in the kitchen area and outside the home such as in the Gurdwara (place of worship for Sikhs) and at the swimming pool. It consisted of episodes of interaction between Manny and her siblings, Ken and Galina, their mother, grandfather and other family members during a range of everyday situations. It also involved a child and other adults. These included playing games, getting ready for Gurdwara, washing up after a meal, shopping for clothes, and buying a drink at a grocery store.

The research design of the present study is a single case study of a child with DD. The research sites of the present study include the home and outside environment. Conversation Analysis (CA) is employed in the present study as an approach to analyse the talk-in-interaction of the child with DD. The framework of CA provides a comprehensive means for investigating the interactions of Manny. CA methodology

enables the researcher to scrutinize the turn-by-turn construction of the interactions of Manny, her siblings and other family members. CA also enables the researcher to identify and analyse the recurring patterns of behaviour in the interactions between Manny, her siblings and other family members. The CA approach will allow the researcher to study how conversation partners (CPs) can support Manny in her interactions.

3.4 Concluding remarks

The qualitative methodology employed for the current study enabled the researcher to analyse the interactions between Manny and her siblings in the home and outside the home environment. The selected sections of the video recordings of the interactions between Manny and her siblings were transcribed using the Jeffersonian system of transcription notation. The ethical considerations are critical and it is the priority in the present study.

The next chapter will analyse the selected extracts of transcription. It will identify the recurring patterns and scrutinize the turns at talk between the child with DD and her siblings in the home and outside the home environment during play and other routine activities.

CHAPTER 4: ANALYSIS AND DISCUSSIONS

4.0 Introduction

In this section, the interaction between the child with Development Delay (DD) and her siblings will be analyzed, specifically, their turn-by-turn construction of the interaction. Recurring patterns in the home and outside interactions, as well as interactions during routine activities in the home and outside of Manny and her siblings will be also identified and analyzed. The data for the analysis is of naturally occurring interactions of Manny and her siblings. These naturally occurring interactions are recorded and only selected extracts are analysed.

4.1 Recurring patterns during play

4.1.1 With siblings at home

Four video recordings of Manny and her siblings' interaction during play time were made in the home environment. Each video recording is between 30 and 60 minutes long. Only selected sections of the video recordings were transcribed following the Jeffersonian system of transcription notation.

The first extract in the section illustrates a recurring pattern in the interactions of siblings, Manny, Ken, and Galina at home during play time. Observation data reveals that Ken, the eldest of the siblings, often sets the rules for their games and thus takes the role of the decision-maker. In this sequence, "trouble" arises when Manny, the child with DD challenges Ken's decision during the game of Hide-and-Seek. This game involves one player being blindfolded while the others hide. The blindfolded player, referred to as "IT", has the task of seeking out the other players from their hiding places.

Ken's action of nominating himself for the role of "IT" at the beginning of this extract, becomes a trouble source as evident in Manny's next turn expression of dissatisfaction. The conflict that arises from this escalates as Manny resorts to physical aggression.

Extract 1 (Hide-and-Seek).

001	Ken	okay [*I jadi I jadi*] okay I be IT I be IT [((*removing the scarf covering Galina's eyes*))]
002	Galina	I dont want a::ih
003	Manny	I no[p(l)ay [((*lowers her head, holds it with both hands while sitting on the sofa*))]
004	Ken	Galina, you and me only *jadi* ah. Manny don't let Galina, you and me only be "IT" ah. Manny don't let
005	Manny	I,I [a:] [((*getting up from the sofa, raising her left hand, walks towards Ken*))]
006		[I-] [((*standing in front of Ken))]*
007	Ken	◦wait wait◦ [((*tying the scarf to cover his eyes*))]
→008		[((*lowering her left hand, Manny hits Ken on his tummy*))]
009	Ken	[uh ((*crouching in pain*))] [((*Manny walks to the curtain separating the living room & kitchen*))]
010		[(2.0)] [((*Manny walks away, stops at the curtain to turn around to look at Ken*))]
011	Manny	[XXX XXX] [((*mumbling*))]
012	Galina	want I tell mummy ah?
013	Manny	stuPID. [((*pushes the curtain aside and runs into the kitchen*))]
014	Galina	[run run run run run] [run Ken.] [((*Ken running after Manny*))] [((*Galina running after them*))]
015		((*Manny finding a place to hide in the kitchen*))

With a turn beginning "*okay*", in line 001, Ken constructs his turn at talk with "*I*" a reference to himself and inserts the Malay word "*jadi*" which in this instance can be translated as "be IT". Insertions of single words or phrases from another language in

conversations in English referred to as code-switching is a common phenomenon in a multilingual society like Malaysia (Auer, 2013). Here, Ken mixes the code of English and Bahasa Malaysia or also known as Malay, is seen as an alternative possibility for the child with DD to have a better understanding. With this turn, Ken effectively nominates himself to be "IT" in the next stage of the game as he helps to remove the scarf covering Galina's eyes. Galina's next turn "*I don't want a::ih*" in line 002, although lacks reference to any object, can be about the scarf that she no longer wants to cover her eyes with.

Interestingly in line 003 Manny says "*I no play*". She appears to express dissatisfaction which is emphasized gesturally when she lowers her head and holds it with both her hands while sitting down on the sofa. The turn in line 003 constructed with only three words, indicates structural simplification. The missing auxiliary verb (do) is attributable to the linguistic deficit often associated with children with DD. Ken directs his next turn to the younger sibling as he says "*Galina, you and me only jadi ah? Manny don't let*" in line 004. In a display of affiliation with the younger sister, he confirms his decision to restrict "*jadi*" (being IT) to Galina and himself only. Ken expands the turn with "*Manny don't let*", reiterating Manny's restricted participation in the game. In this turn, Ken is seen taking on the role of a decision-maker. Knott, Lewis and Williams (1995) study confirmed the role asymmetries of siblings of the disabled children as "leaders" of the interaction. Similarly, Ken appears to be the "leader" of the interaction with his siblings.

Manny appears to protest Ken's decision to exclude her from being "IT" in line 005 when she begins with the personal pronoun "*I*" repeated twice to nominate herself. Producing the turn holding the filler "*a:*", she gets up from the sofa and raising her left hand, Manny walks towards Ken. The gesture of raising her hand could be an act of

self-nomination. She then stands in front of Ken and repeats "*I,*" once more before abandoning her turn in line 006. Such patterns of interaction where Manny's turns-at-talk do not progress to completion perhaps due to a lack of linguistic resources or her emotional state in dealing with conflicts recurs during play with her siblings. Geils and Knoetze's (2008) analysis of conversation of Barney, a child with autism highlighted the feature "*positioning*" of the child within the discourse in relation to his CPs. Barney uses the personal pronoun "*I*" to actively position himself within the interaction which displays his ability to construct himself as a separate person during conversations with his CPs. Likewise, Manny actively positions and constructs herself as a separate person with the use of the personal pronoun "*I*" during the interaction with her siblings. Manny seems to be displaying an alternative identity other than "child with Developmental Delay". In line 007, Ken is heard saying "*wait wait*" at a lower volume while he ties the scarf over his eyes. In the line of interest (line 008), Manny lowers her left hand and takes a swing, hitting Ken on his tummy. Manny is often seen resorting to physical aggression when she is not able to resolve the conflict. Ken says "*uh*" in line 009 and crouches down possibly in pain. In the 2.0-second pause that follows, Manny is seen walking away from Ken only to stop at the curtain to take a look at him in line 010. She then mumbles what appears to be two words (XXX XXX) (line 011).

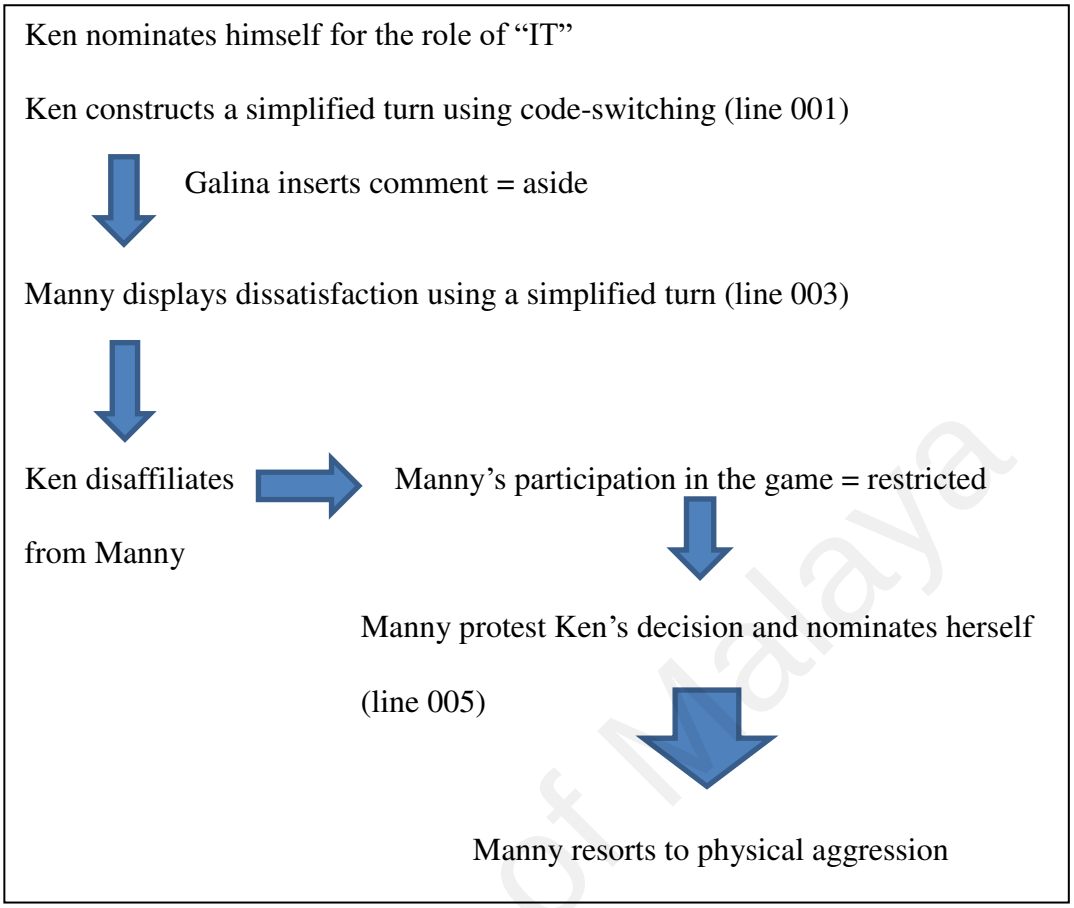
The trajectory of turns that follows shows further affiliation between Galina and Ken. In line 012, Galina threatens Manny with "*want I tell mummy ah?*". This somewhat awkward turn construction is typically seen in the local variety of the English language i.e. Malaysian English (Rajadurai, 2004) can be interpreted as "Do you want me to tell mummy?" This establishes Galina siding with her brother. Manny retorts with an insult delivered with an emphasis on the last syllable, "*stuPID*" in line 013. Manny then pushes the curtain before running away in line 013. Galina continues to display affiliation with her elder brother Ken as she encourages him in line 014 saying "*run run*

run run run run Ken" as he runs after Manny and eventually the two of them run after Manny towards the kitchen. The sequence ends with Manny trying to find a place to hide in the kitchen.

This extract reveals how the conflict of the child with DD and the elder sibling when he sets up the rule of who is being the "IT" during the hide-and-seek game. The conflict arises when Ken nominates himself being the "IT" leading to Manny protesting against her elder sibling which escalates into display of aggression.

The sequence pattern below shows the children are engaged in the game of Hide-and-Seek whereby Ken being the eldest among them takes on the role of decision maker. The interaction pattern shows that Ken uses code-switching as an alternative strategy for Manny to comprehend the context of interaction. The pattern also shows how Ken acts in a manner that is seen to be "affiliating" towards Galina and "disaffiliating" towards Manny. Ken's act may be seen as unfair towards Manny. Manny constructs a simplified turn with only three words (*I no play*) to indicate her dissatisfaction. Consequently, Manny protests against Ken, she repeatedly says "*I*" to nominate herself and then she resorts to physical aggression.

Diagram 1.



* Down wards arrow indicates a common pattern whereas arrow pointing to the right indicates a deviation of the pattern

* The big arrow indicates the consequence or outcome

* The equal sign "=" indicates the equality or same value

The second extract is also another example of conflict during play in the interactions of Manny and Galina. The sequence begins with Manny initiating to play arm wrestling, i.e. when one child holds and pushes the hand of the other child to the ground. The data show that Manny cheats i. e. breaking the rule of the game by using both her hands to pin down Galina's hand to win the game. Dadu, Manny and Galina's grandfather also takes part in the interaction. He is seen possibly supporting Galina when she accuses Manny of cheating. Manny is also seen displaying dissatisfaction when Galina pushes Manny's hand on the ground.

Extract 2 (Wrestling).

001	Manny	play I start Galina [((*Manny sitting cross-legged, holding her phone in her left hand, spinner in her right hand*))]
002	Galina	hm: [((*looking at Manny, putting a few books in the school bag, zipping the bag up and putting the bag on her back*))]
003	Manny	Mine la Galina *aja a::ja a:::* Mine la Galina come co::me a::: [((*Manny putting the phone and spinner down, grabbing the bag from Galina, putting the bag on the table*))]
004		(0.2) [((*Galina sits cross-legged, opposite Manny*))]
005	Manny	start [((*holding Galina's knees, pulling her nearer*))]
006	Galina	ah [((*sitting nearer to Manny, putting her open fist forward, keeping her elbow on the carpet*))]
007	Manny	see la [((*pointing her index finger on the carpet*))]
008	Galina	no:::
009	Manny	wait la, wait stop. [((*counting with her fingers*))]
010	Galina	three four [((*counting with her fingers*))]
011	Manny	I no play [((*pushing Galina's hand away, resting her chin on her left hand*))]
012	Galina	okay tell [((*looking at Manny*))]
013	Manny	one Galina three four five eight nine two four [((*counting with her fingers, showing her ten fingers to Galina*))]
014	Galina	okay come [((*holding Manny's hand on the carpet*))]

015	Manny	[STOP] [YAY!] [((*spinning the spinner*))] [((*grabbing Galina's hand using both her hands and pushing Galina's hand down on the carpet, Manny raising her right closed fist and then pointing her index finger at the spinner*))]
016	Galina	AH cannot
017	Manny	there:: YAY! [((*grabbing Galina's hand with both her hands, pushing it down on the carpet and raising her right closed fist*))]
018	Galina	o:::: one hand only cheating ah you cheating cheating [((*pointing her index finger at Manny, and tapping Manny's left arm*))]
019		(3.0) [((*Manny spins her spinner*))]
020	Galina	eiy eiy you faster [((*looking at Manny, tapping Manny's left arm*)]
021	Manny	waIT [((*holding Galina's hand*))]
022	Galina	AH: [((*holding Manny's hand*))]
023		(0.05) [((*Galina pushing Manny's hand down on the carpet*))]
→024	Manny	EIH ((*high pitched*)) [((*hitting Galina on her right hand*))]
025	Galina	cheating [((*pointing her index finger at Manny, getting up and sitting on the sofa*))]
026		(0.05) [((*Manny hitting Galina's right hand*))]
027	Dadu	cheating. [((*looking at Manny*))]
028	Galina	yes [((*sitting near Dadu*))]
029	Manny	↑CHEATING [((*pointing her index finger at Galina*))]
030	Dadu	cheating [((*looking at Manny*))]
031	Manny	cheating Galina stupid heck Galina stupid heck I no play I wan(t) [((*taking her phone, pressing the screen and putting the phone close to her ear*))]

Manny initiates to play arm wrestling, she begins with "*play I start Galina*" while sitting cross-legged, holding her phone in her left hand and the spinner in her right hand in line 001. The observation data evidently shows that Manny produces structural

simplification with only four words. In the next turn, Galina says "*hm:*" possibly indicating uncertainty while looking at Manny in line 002. Galina puts a few books in the school bag, zips up the bag and puts the bag on her back in line 002. Interestingly, Manny uses a mix of Malaysian English and Punjabi, she says (*Mine la Galina aja a::ja a:::*) (*Mine la Galina come co::me a:::*) in line 003. The use of the particle "*la*" in Manny's utterance or even "*lah*" is a common practice among the local Malaysian population which is also known to be Malaysian English (Cheng, 2003). Manny puts the phone and the spinner down. Then, Manny grabs the bag from Galina and puts the bag on the table. Interestingly, this gestural signalling shows Manny insisting that Galina play. In the 0.2-second pause that follows, Galina sits crossed-legged opposite Manny in line 004. Manny begins the next turn with one word "*start*" in line 005. Manny holds Galina's knees and pulls her nearer. Galina says "*ah*", sits nearer to Manny, puts her open fist forward and keeps her elbow on the carpet in line 006. Manny takes her next turn with two words "*see la*", possibly inviting Galina to sit closer while she points her index finger on the carpet in line 007. Galina responds with a exaggerated negative "*no:::*" in line 008. Manny constructs the next turn with three words "*wait la, wait stop.*" while counting with her fingers in line 009. Manny is seen using a gesture of finger counting. Galina counts "*three four*" with her fingers in line 010. Here, the typically developing sibling begins counting numbers from the middle which is possibly a natural phenomenon involving children. Manny is seen using structural simplification "*I no play*" in line 011, a similar pattern used by Manny in Extract 1. This is a recurrent interaction pattern in Manny's conversation with her siblings. Manny uses this simplified manner probably threatening not to participate if she does not get her way i.e. to count the numbers. Manny emphasizes the rejection with a gesture of pushing Galina's hand away, and then Manny puts her hand under her chin. Children with DD often display withdrawn behaviour in interactions (Coe et al., 1999; Van Daal,

Verhoevan, & Van Balkom, 2007). Here, Manny appears to be displaying withdrawn behaviour.

The trajectory of turn that follows shows that the younger sibling is being attentive. In line 012, Galina uses two words "*okay tell*" while looking at Manny. In the next turn, Manny starts counting "*one Galina three four five eight nine two four*" in line 013. Manny counts with her fingers and shows Galina her ten fingers. Here, the "error" of counting made by Manny is due to the developmental delay and it is also an example of the manifestation of the delay. In the next turn, in line 014, Galina responds with agreement with two words, "*okay come*" while holding Manny's hand on the carpet. Instantaneously, Manny says "*STOP*", while spinning the spinner on the carpet in line 015. Manny uses the expression "*YAY!*", in a louder volume while grabbing Galina's hand using both her hands and pushing Galina's hand down on the carpet. Manny raises her right closed fist and points her index finger at the spinner. Manny is seen using the spinner possibly as a time keeper. Here, Manny appears to be declaring her victory when she uses the expression "*YAY!*" which can be supported in a similar way, e.g during the hopscotch in Pico Union, girls boast in their local language about their successful play (Voy ganando! Voy ganando! EY:::::::::!) (I'm winning! I'm winning! Yeah!) (Goodwin 1990).

However, Galina displays dissatisfaction and rejects Manny's declaration of winning with "*AH cannot*" in line 016. Goodwin's (1995) study Co-construction in Girls' Hopscotch pointed out some characteristic features of opposition turns, one of it is signaled through response cry "AY:!", "EY!", "Ou:!" or "Ah:!" which is seen similar to Galina's production of "*AH*". In line 017, Manny says two words, "*there:: YAY!*" while grabbing Galina's hand with both her hands, pushing her hand down on the carpet and raising her right closed fist.

Manny appears to be breaking the rule of the game, using both hands to grab and

push Galina's hand down. Galina voices her disagreement with an exaggerated negative "*no::::!"* and further expands with clarification, "*one hand only cheating ah you cheating cheating*" while pointing her index finger at Manny, and tapping Manny's left arm in line 018. The dispute during play in this extract is similar to the dispute during play (e.g. hopscotch) whereby children display opposition through raised volume such as the expression "*No!*" and the use of negative person descriptor "*Chillona*" which means "*Cheater*" (Goodwin, 1995). Here, instead of using the negative person descriptor "*cheater*", Galina uses present participle "*cheating*". However, Manny abandons the turn at talk. In the 3.0-second pause that follows, Manny spins her spinner in line 019. Galina continues the next turn construction with, "*eiy eiy you faster*" in line 020 possibly indicating an initiation to play another round of arm wrestling. Galina looks at Manny and taps Manny's left arm. Manny responses with one word, "*waIT*" and holds Galina's hand in line 021. In line 022, Galina expresses "*AH:*", and holds Manny's hand. In the 0.05-second pause that follows, Galina pushes Manny's hand down on the carpet in line 023. In the line of interest, Manny displays rejection with "*EIH*" in a high pitch and hits Galina on her right hand in line 024. Here, Manny is seen displaying aggressive behaviour towards Galina. In response of dissatisfaction, Galina uses the present participle "*cheating*" in line 025. Galina emphasizes her dissatisfaction with gestural signaling by pointing her index finger at Manny. Galina gets up and sits on the sofa. In the 0.05-second pause that follows, Manny is seen hitting Galina's right hand again in line 026. Dadu, Manny and Galina's grandfather was sitting on the sofa and watching television. Dadu is possibly seen keeping an eye on Manny and Galina while they were playing. Dadu takes a turn and repeats the single word "*cheating.*" in line 027 while looking at Manny. In agreement with Dadu, Galina says "*yes*" while sitting near Dadu on the sofa in line 028. However, Manny is seen repeating the word used by Galina and Dadu, " ↑ CHEATING" in a louder volume and points her index

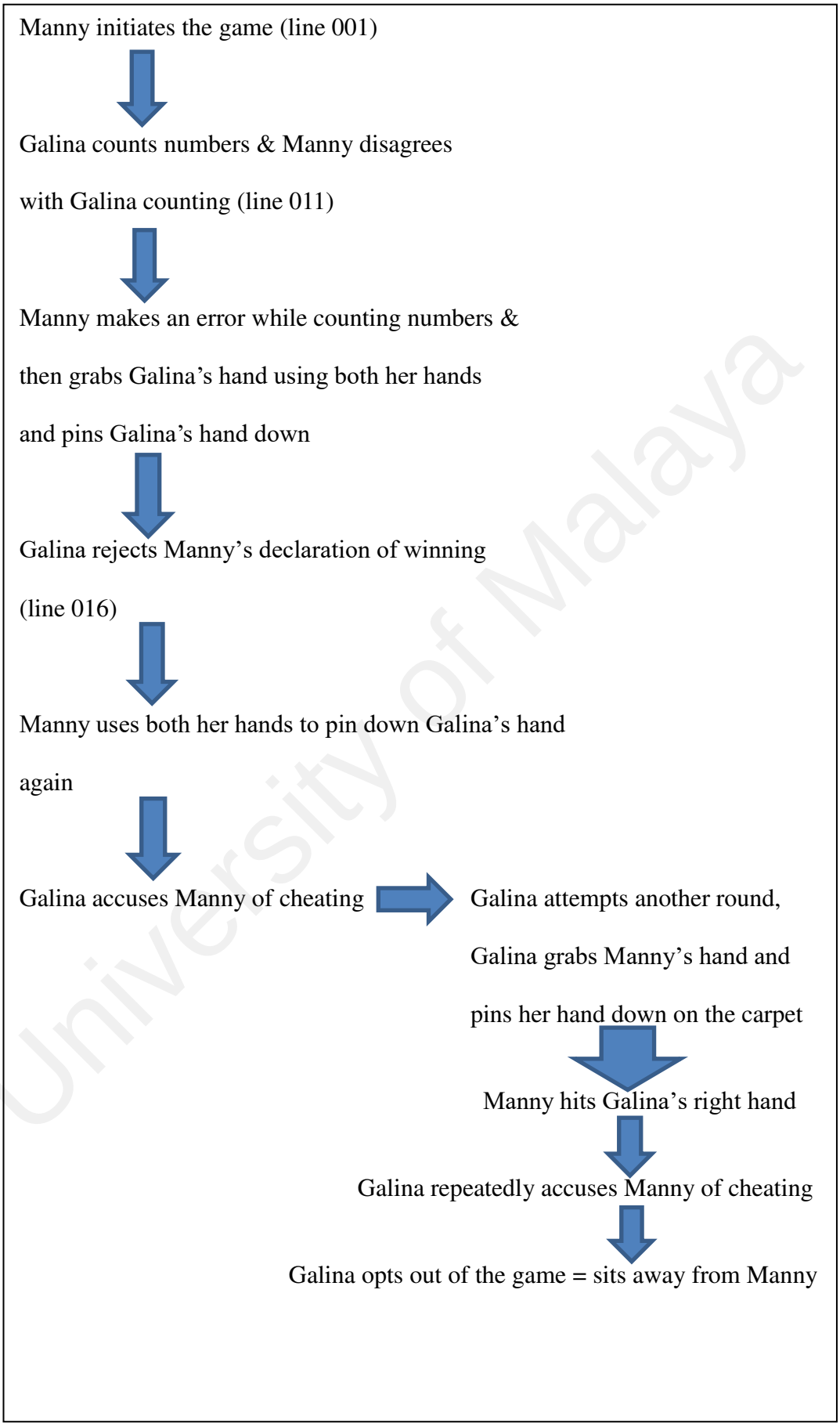
finger at Galina in line 029. In line 030, Dadu takes another turn using the word "*cheating*" again while looking at Manny. Manny constructs a long response "*cheating Galina stupid heck Galina stupid heck I no play I wan(t)*" in line 031. Children with DD produces "idosyncratic" responses which means a strange response due to the lack of language resources (Geils & Knoetze, 2008). Similarly, Manny is seen possibly producing an "idosyncratic" response due to her limited language resources. Manny then takes her phone, presses the screen and puts the phone close to her ear possibly pretending to talk to her dad (reported by the mother) as a gesture of seeking help in line 031. This is also seen as a recurrent pattern of behaviour in her interaction, whereby Manny pretends to talk to her dad on the phone.

The observation shows that the child with DD threatens not to participate if she does not get her way, i.e. when she produces a three-word response "*I no play*" and this is a recurrent interaction pattern. Notably, Manny uses a mix of Malaysian English and Punjabi in the interaction. Manny is also seen acting in a way that is unfair towards Galina. Manny breaks the rule of the game by using both her hands to pin down Galina's hand. The interaction pattern shows that Manny uses the expression "*YAY*" to display her happiness of winning the arm wrestling game. Manny's happiness is also emphasized gesturally when she raises her closed fist. When Galina pins Manny's hand down on the carpet, Manny displays aggressive behaviour by hitting Galina on her hand. However, the sequence closes with Galina getting up and moving away as a gesture of opting out of the game.

The sequence pattern below shows the interactions of the children during the arm wrestling game. The interaction pattern shows Manny initiating with structural simplification (*play I start Galina*). Manny makes an error when she counts numbers

due to her Developmental Delay. Galina is seen accusing Manny of cheating when Manny uses both her hands to pin down Galina's hand. The interaction pattern also shows Galina producing simplification with only two words (*AH cannot*) to reject Manny's victory. Manny displays aggression when Galina grabs and pins her hand down.

Diagram 2.



The next extract takes place at home, in the children's bedroom where Galina keeps annoying Manny. Galina and her brother, Ken is also engaged in a rough play on the bed. Manny is seen threatening to harm Galina because she keeps repeating that it is her birthday not Manny's birthday.

Extract 3 (My birthday, your birthday).

001	Galina	Manny today my birthday [((*pointing her index finger at herself*))]
002	Manny	MY [((*pointing her index finger at herself, pushing Galina*))]
003	Galina	happy birthday ah [((*Manny taking a t-shirt on the bed throwing it at Galina*))]
004		ha [((*closing her eyes*))]
005	Ken	*keh tera birthday aaj* tell that it is her birthday [((*Galina taking the t-shirt, hitting it on Manny*))]
006		((*Manny turning her back against Galina, closing her eyes*))
007	Galina	today your birthday ah? [((*looking at Manny, pointing her index finger at Manny*))]
008	Manny	YES [((*while looking at Galina*))]
009	Ken	*keh tera tera tera tera* tell it is yours yours yours yours [((*looking at Manny and Galina*))]
010	Galina	my birthday today not yours ┌birthday my birthday MY MY ┐ |((*getting on the bed*)) |
011	Manny	|my cake my cake my cake | |MY CA:::::KE ((*screaming*)) | └((*switching off the room light*)) ┘
012	Galina	my is my is my is my is my is my [((*Manny switching on the room light, making zombie noises with her hands out, walking towards Galina*))]
013	Galina	is my is my is my is my is my [((*Galina standing on the bed*))] [((*Manny making zombie noises, trying to catch Galina*))]
014		is my is my is my today is my birthday today is my birthda::y
→015	Manny	no stupid [((*walking away, picking up a wireless headphone from the floor and throwing it at Galina*))]
016	Galina	is not your birthday
017	Manny	stupid heck
018	Galina	is my birthday is not your birthday
019	Manny	my cake [((*pointing her index finger at herself, opening the cupboard and looking for something*))]

020	Galina	my cake my cake my cake my cake [((*looking at Manny*))] [((*Ken jumping on the bed*))]
021		[(1.0)] [((*Manny closes the cupboard, looks at Ken and Galina, walks towards another cupboard, looks around*))]
022	Galina	MY CAKE MY CAKE MY CAKE MY CAKE [((*Ken holding Galina down on the bed*))]
023		((Manny *takes a hammer from the cupboard, swings the hammer at Galina*))
024	Galina	((*screaming*)) ((*high pitched*))
025	Manny	you *chup* [((*pointing her index finger at Galina*))] you quiet
026	Galina	((*screaming*)) ((*high pitched*)) ┌((*Ken holding Galina down tightly*))┐ │((*Manny swinging the hammer at* │ └*Galina*)) ┘

Galina initiates the interaction with "*Manny today my birthday*" while pointing her index finger at herself in line 001. Manny responds with a single possessive pronoun "*MY*" in a louder volume in line 002. Manny emphasizes her disagreement gesturally by pointing her index finger at herself and pushing Galina away. Children with DD due to autism are likely to use gestural signalling such as pointing to convey unhappiness (Damico & Nelson, 2005). In line 003 Galina says "*happy birthday ah*". Manny takes a t-shirt from the bed and throws it at Galina. Galina says "*ha*" and closes her eyes in line 004. Ken constructs the next turn in Punjabi (*keh tera birthday aaj*) (*tell that it is her birthday*) in line 005. Ken appears to take a turn in support of the child with DD. Busch's (2012) study noted how family members particularly the mother and the elder sibling intervenes through directions and topic shift to resolve disputes in interaction with children. Similarly, Ken possibly intervenes as he takes a turn in sequence in support of Manny. However, Galina takes the same t-shirt on the bed and hits Manny with it. Instantly, Manny turns her back and closes her eyes. In line 007, Galina asked "*today your birthday ah?*"while looking at Manny and pointing her index finget at Manny. Manny gives an affirmative response "*YES*" in line 008 while looking at Galina.

It has also been noted that children with DD more often offered no response to a comment or question (Capps, Kehres, & Sigman, 1998). However, here Manny uses an affirmative in responding to Galina's question. Additionally, children with DD due to autism may also respond with the "yes-answer" to simply fulfill turn obligations in conversations due to the absence of linguistic resources to express themselves, such as "*I don't understand*" (Geils & Knoetze, 2008). Manny may seem to be possibly fulfilling her turn obligations with the "yes-answer" Ken constructs another turn in Punjabi (*keh tera tera tera tera*) (*tell that it is yours yours yours yours*) in line 009 while looking at both Manny and Galina.

In the line of interest in line 010, Galina is seen annoying Manny and repeatedly saying that it is her birthday not Manny's. Galina says "*my birthday today not yours birthday my birthday MY MY"* (line 010). Galina gets on the bed. However, Manny constructs a simplified response with two words (*my cake*) and repeatedly says it, ending the turn in a louder volume with an exaggeration "*MY CA:::::KE*" in line 011. The simplified response (*my cake*) is an example of deficit of such children with DD. Manny switches off the room light. Galina appears to be abandoning Manny's talk. Galina keeps repeating the possessive pronoun "*my is my is my is my is my is my*" in line 012. This turn construction produced by Galina could be a natural phenomenon involving children. Manny switches on the room light, making zombie (scary) noises, using her hand gestures possibly trying to scare Galina and catch her. Galina is seen ignoring Manny's gestures of scaring her and continues annoying Manny. In line 013, Galina repeatedly uses the possessive pronoun "*is my is my is my is my is my*" while standing on the bed. Manny continues making zombie noises and tries to catch Galina. Galina repeatedly says "*is my is my is my*" with a turn ending "*today is my birthday today is my birthda::y*" in line 014. In the line of interest, Manny responds with a negative "*no*" in combination with "*stupid*" in line 015. Manny then walks away.

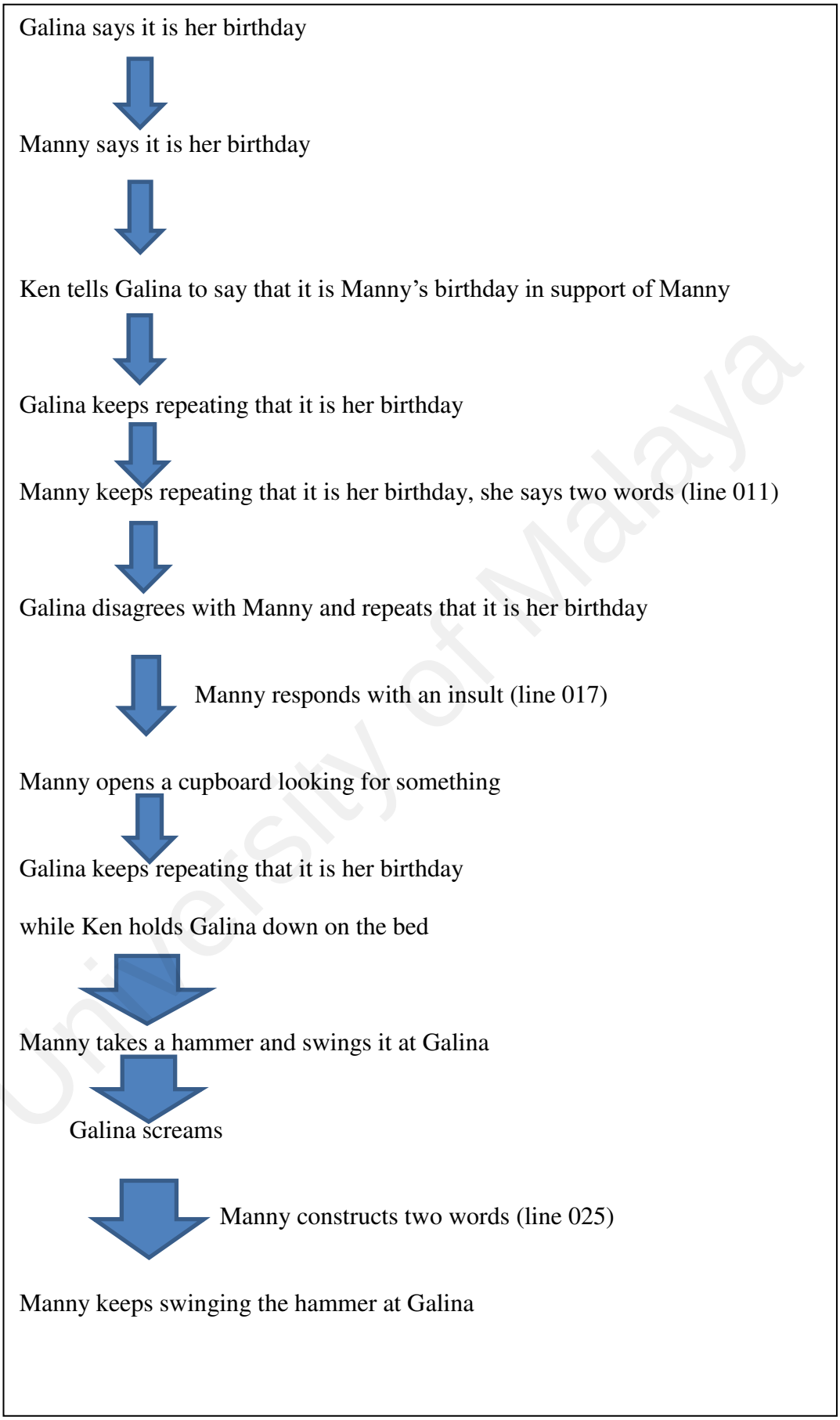
Manny picks up a wireless headphone from the floor and throws it at Galina in line 015. It has been noted that children with DD due to autism display aggressive behaviour (Dominick et al., 2007). Manny displays aggressive behaviour towards Galina by picking up a wireless headphone and throwing it at Galina. Galina voices a protest against Manny in line 016 with "*is not your birthday*". Manny responds with an insult in line 017 "*stupid heck*" possibly indicates her frustration of Galina's annoyance. Galina continues protesting in turn 018 with "*is my birthday is not your birthday*". Manny says "*my cake*" while pointing her index finger at herself in line 019. Manny opens a cupboard and looks for something. In the next turn, Galina repeatedly says "*my cake my cake my cake my cake*" while looking at Manny in line 020. Meanwhile, Galina and Ken were having a rough play on bed. Ken jumps on the bed. In the 1.0-second pause that follows, Manny closes the cupboard, looks at Ken and Galina, walks to another cupboard and looks around in line 021. Galina says out loudly in line 022 "*MY CAKE MY CAKE MY CAKE MY CAKE*". Ken holds Galina down on the bed. Then, Manny takes a hammer from the cupboard, and starts swinging it at Galina (as seen in screen capture 3.1 below) while Ken is holding Galina down on the bed. Galina is screaming and crying with a high pitch. Manny points her index finger at Galina, and says in a mix of English and Punjabi (*you chup*) (*you quiet*) in line 025 as seen in screen capture 3.2 below. Manny swings the hammer again at Galina as seen in screen capture 3.3 below. This extract evidently shows that the child with DD is engaged in rough behaviour with her younger sibling. Hubbard et al. (2002) concluded that children's anger was positively related to reactive aggression and that children who displayed high reactive aggression were engaged in rough behaviours. Similarly, Manny's anger can be related to reactive aggression as she picked up a tool, threatening to harm her younger sibling.

Screen capture: 3.1 3.2 3.3

This extract shows the threatening to harm behaviour displayed by the child with DD. Manny was reacting towards her younger sister's annoyance. The child with DD displays intentional physical aggression with the use of a tool. This would not be the cause if Galina did not annoy Manny. This extract reveals the aggressive behaviour displayed by the child with Developmental Delay in response towards the annoyance by her younger sibling.

The sequence pattern below shows the interaction of the children in the bedroom where Galina keeps annoying Manny. The interaction pattern shows that Galina keeps repeating that it is her birthday not Manny's birthday. Manny uses the single possessive pronoun "*MY*" to indicate that it is her birthday. Manny also produces two words "*MY CAKE*" possibly referring to her birthday. Galina disagrees with Manny and Manny responds with an insult "*stupid heck*". Consequently, Manny threatens to harm Galina with a hammer. The interaction pattern also shows Manny using two words in a mix of English and Punjabi (*you chup*) (*you quiet*).

Diagram 3.



Contrastingly, evidence from the extract below shows that the child with DD displays protective behaviour towards her younger sibling.

The extract below is from the interactions of Manny, Ken and Galina that takes place in the bedroom. The sequence shows exchanges between the elder brother and younger sister in a play whereby Manny appears to be displaying protective behaviour towards her younger sister.

Extract 4 (Bedroom play).

001	Ken	((*standing close to Galina, teasing her*))
002	Galina	((*sitting on the bed*)) ((*sobbing*)) ((*high pitched*))
→003	Manny	KEN [((*hitting Ken on his back, pointing her index finger at Ken*))]
004	Ken	(0.05) ((*falling on the bed and lying downwards*))
005	Manny	KEN
006	Ken	((*taking the cushion, trying to hit Galina*))
007	Galina	((*screaming*)) ((*high pitched*))
008	Ken	((*falling on the bed and lying downwards*))
009	Manny	((*laughing*)) yeyoh Ken [((*hitting Ken on his right leg*))]
010	Ken	AHHH [((*getting up from the bed, taking the cushion, trying to hit Galina*))]
011	Manny	GALINA:::: [((*standing in between Ken and Galina, looking at Galina*))]
012	Galina	((*crying*)) ((*high pitched*))

Ken begins by teasing Galina while standing near her. Galina sobs loudly while sitting on the bed. In the line of interest (line 003), Manny calls out "*KEN*" in a louder volume and hits Ken on his back as seen in screen capture 4.1 below. Manny also uses

hand gestures, she points her index finger at him as seen in screen capture 4.2 below. In the 0.05 second pause that follows, Ken falls on the bed and lies face down in line 004. Manny calls out "*KEN*" in a higher volume in line 005. Ken makes an attempt to hit Galina with a cushion but Galina screams loudly, and this can be seen in screen capture 4.3 below. Ken falls on the bed and lies face down again. Manny laughs and says "*yeyoh Ken*" in line 009 and then hits Ken on his right leg as seen in screen capture 4.4 below. Ken says "*AHHH*" loudly in line 010 possibly to indicate his pain. Ken makes a second attempt to hit Galina but fails to do so when Manny screams "*GALINA*::::" in a louder volume and Manny stands in between both of them in line 011 as seen in screen capture 4.5 below. The sequence closes with Galina crying loudly and Ken moving on to another activity.

Screen capture 4.1 4.2 4.3 4.4 4.5

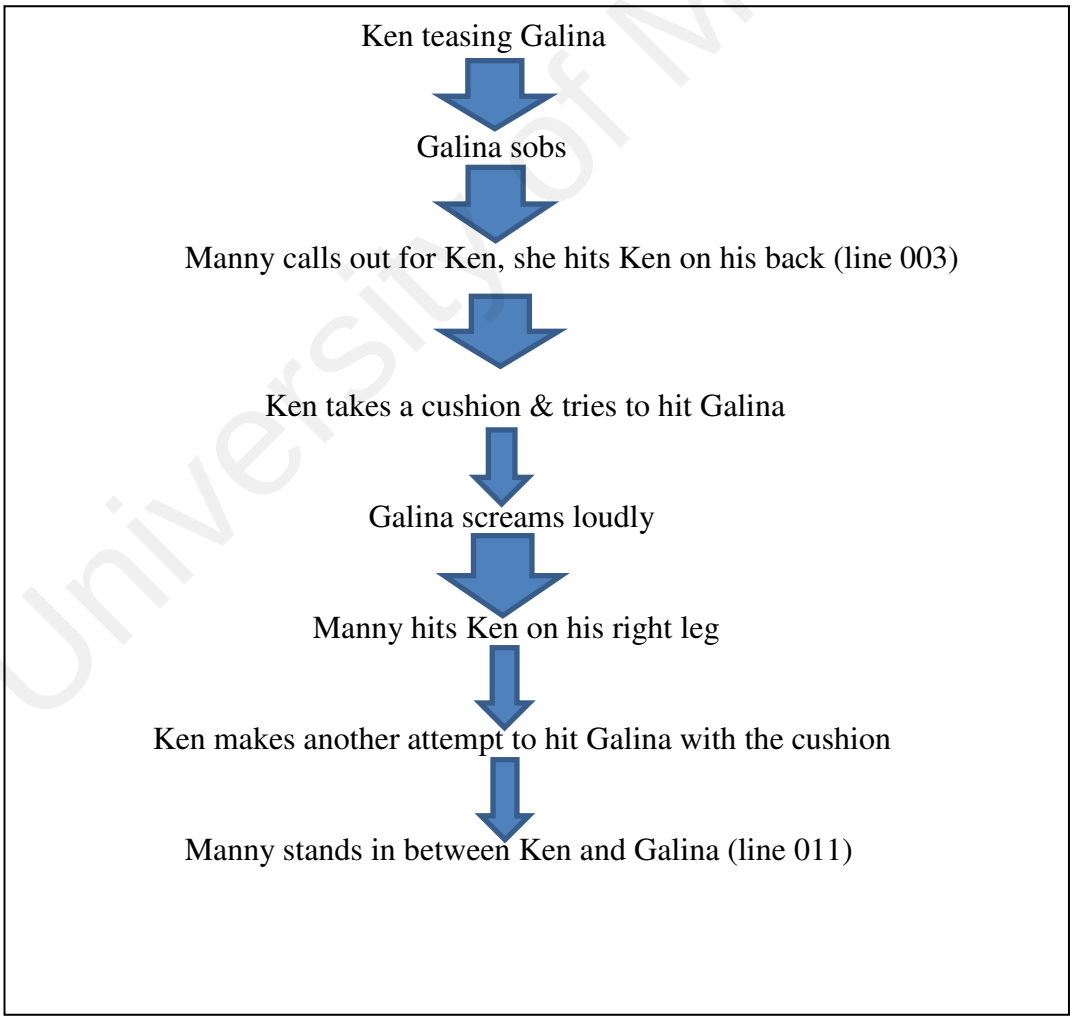
The child with DD is seen protecting her younger sibling in a cushion fight with the elder sibling. Harry, Day and Quist's (1998) discussed a theme, "Big brothering", which was seen as consistent pattern displayed by the older siblings towards the child with Down Syndrome whereby the older siblings were seen "protecting", "advising", "helping", and "reprimanding". Here, Ken, the eldest sibling appears to be "bullying" the youngest sibling, Galina. However, Manny is seen taking on the role of an elder sibling and displaying a pattern of "Big brothering" when she is seen "protecting"

Galina. Manny is also seen giving a warning to her elder brother, using her hand gestures by pointing her index finger at Ken.

The observation data evidently show that the child with DD displays protective behaviour towards her younger sibling whereas the elder sibling portrays aggressive behaviour towards his younger sibling.

The sequence pattern below shows Ken displaying aggressive behaviour towards Galina. The pattern also shows Manny's act of "protection" for Galina which can be seen clearly when she stands in between Ken and Galina.

Diagram 4.



The extracts (1 – 3) discussed in this section, shows Manny displaying aggressive behaviour and problem behaviour. The physical aggression displayed by Manny towards her siblings appears to be a recurrent pattern of behaviour during play in the home environment. In Extract 1, the dispute arises when Ken nominates himself for the role of "IT". The trouble occurs when Manny disagrees with Ken and it escalates as Manny resorts to physical aggression. Similarly, Extract 2 shows that Manny resorts to physical aggression when Galina pins Manny's hand down during the arm wrestling game. Manny also appears to be acting "unfair" by breaking the rule of the game i.e cheating when she uses both her hands to pin Galina's hand down. Manny is seen displaying a threatening to harm behaviour towards Galina as seen in Extract 3. However, Manny possibly does so in response to Galina's annoyance. In contrary, in Extract 4, Manny displays protective behaviour towards Galina. Manny is seen protecting Galina from Ken in a cushion fight.

The interaction patterns in the home environment show that Manny uses structural simplification with two to three words in English and Punjabi. Manny's turn-by-turn construction include of a mix of Malaysian English and Punjabi. Interestingly, Manny actively positions herself as a separate person in the interactions with her siblings. Manny also uses insults frequently to display her dissatisfaction in the interactions. Besides, Ken is seen using code-switching as an alternative to possibly communicate more effectively with Manny. Galina produces short utterances with the use of two to three words so that Manny can have a better understanding of the interaction.

4.1.2 With siblings outside their home

Three video recordings of Manny and her siblings' interaction during play time were made outside their home environment. Each video recording is between 30 and 60 minutes long. Only selected sections of the video recordings were transcribed following the Jeffersonian system of transcription notation.

The next extract is from the children's interactions outside their home, at the Gurdwara grounds. Aggressive behaviour is displayed by both Manny and Galina. The sequence shows an exchange between the sisters leading up to aggressive behaviour, which ends with the younger sibling being physically hurt.

Extract 5 (Open area in Gurdwara).

001	Galina	[ei: ei::] [((*climbing over the stack of chair, sits right on top*))]
002	Manny	[wait la,] [((*drags two chairs, places them near Galina, Galina swings her legs at Manny*))]
003	Manny	[*a:ja*] come [((*raising the chair above her head to add it to the stack*))]
004	Galina	[ei: ei::] [((*pushing Manny away, swings her right leg*))]
005		[(1.0)] [((*Manny puts the chair down and runs to the boys who are kicking a ball to and from each other*))]
006	Manny	[Galina *aja la:a*] Galina come la:a [((*walking back to Galina, pushing one chair away*))]
007		[(0.5)] [((*Manny reaches up to grab Galina's hands, trying to pull her down*))]
008	Galina	[i: e(k)- e(k) ↑] i:: ((*high pitched*)) [((*pushing Manny's hands away*))]
009		[(4.0)] [((*Manny holds Galina's ankles, pulls her and turns to look at the boys*))]

→010 Galina [a:r, a:r, mu<u>m</u>i:] [(0.5)]
[((*Manny continues to pull Galina*))] [(*Galina hits her head on the floor*))]

011 [e::rng]
[((*screaming*))]

In line 001, Galina screams "*ei: ei::*" as she climbs over the stack of chairs to sit on top. Manny uses Malaysian English "*wait la*" while dragging two chairs and placing them near Galina in line 002. Galina swings her legs at Manny. Manny uses a single word in Punjabi (*aja*) (*come*) to ask her sister to get down from her seat while holding one chair above her head in line 003 as seen in screen capture 5.1 below. In line 004 Galina screams "*ei: ei::*" and indicates refusal by swinging her right leg towards Manny. In the 1.0-second pause that follows, Manny puts the chair down and runs to the boys who are kicking a ball to and from each other in line 005. In line 006, Manny says in a mix of Punjabi and Malaysian English (*Galina aja la:a*) (*Galina come la:a*). Interestingly in line 006, Manny returns to Galina and the chairs, pushing one of the chairs away.

In the 0.05-second pause that follows, Manny reaches up to grab Galina's hands and tries to pull her down in line 007 as seen in screen capture 5.2 below. In response, Galina screams "*i: e(k)- e(k)* ↑" while pushing Manny's hands away in line 008. In the 4.0-second pause that follows, Manny makes another attempt by grabbing Galina's ankles in line 009 as seen in screen capture 5.3. Manny pulls Galina and Manny turns to look at the boys as seen in screen capture 5.4 below. Galina falls off the chair as seen in screen capture 5.5 below. Galina screams and cries loudly "*a:r, a:r, mu<u>m</u>i:*" (in the line of interest, line 010). It has been noted that behaviour problems such as temper tantrums and aggression are often associated with children with DD (Bhatia, Kabra, & Sapra,

2005; Dominick et al., 2007). Here, Manny is seen displaying aggression towards Galina.

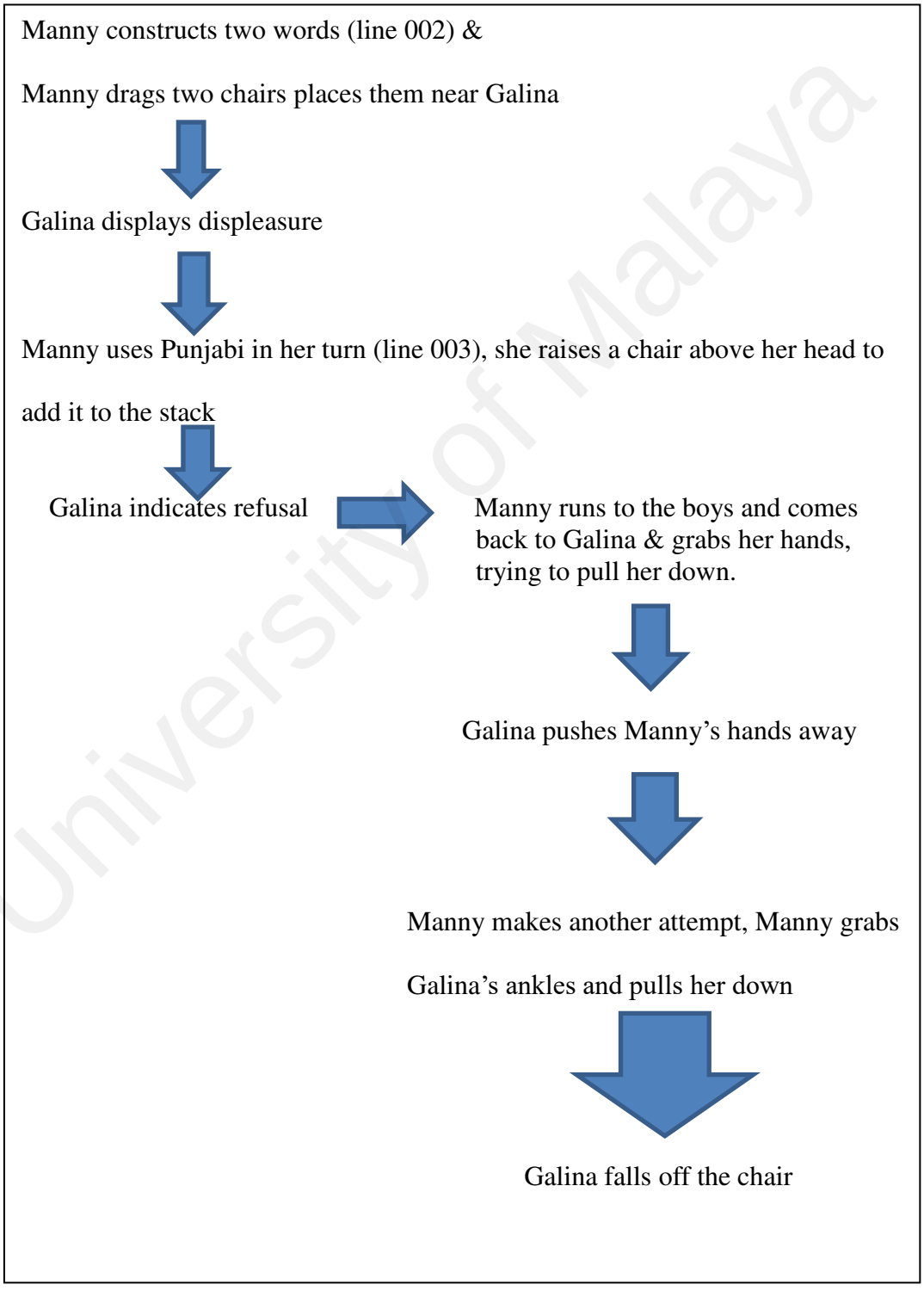
Screen capture: 5.1 5.2 5.3 5.4

5.5

This extract shows the disagreement during play behaviour escalating into aggression. The extract also shows Manny resorting to aggressive behaviour to get what she wants. Manny is seen behaving in a physically threatening manner towards Galina and when Galina does not comply with her demands, Manny resorts to physical force. Unfortunately, this results in Galina falling off her chair. Galina's fall may not have been the outcome but the unfolding sequence that ends with Galina screaming and crying in pain reveals aggressive play behaviour in the interactions between Manny and Galina. This shows the evidence of aggression as a recurrent pattern of behaviour displayed by Manny towards Galina in the outside interactions. The interaction patterns show that Manny constructs simplified turns in English and Punjabi whereas Galina is seen not giving in to Manny's demands.

The sequence pattern below shows the exchange between the sisters during play that ends with Galina being physically hurt. Manny uses the Malaysian English (*wait la*) and this is a recurrent interaction pattern in and outside the home environment (see Extract 2).

Diagram 5.



The next extract is from the interactions of Manny and Galina at the children's swimming pool. Galina uses goggles to swim and Manny is seen repeatedly requesting for the goggles from Galina. Ken swims in the adult's pool and also requests for the goggles from Galina but his request is rejected by Galina.

Extract 6 (Swim time).

001	Manny	one two three [((*counting with her fingers, looking at Galina*))]
002		[(0.05)] [((*Galina puts on the goggles, swims across the pool*))]
→003	Manny	↑ I WANT I WANT I WANT GALINA I WANT GALINA I WANT
004	Galina	[(0.05)] [((*adjusting the goggles*))] can wait ah
005	Manny	I want [((*looking at Galina*))]
006	Galina	one two three [((*swims*))]
007	Manny	↑ YAH YAH YAH YAH YAH YAH ha ha galina ha ha ha
008		[(1.0)] ((*Galina takes out the goggles and blows her nose*)) (*sneezing*)
009		((*Manny looking at Galina*))
010	Galina	like that ah [((*putting on the goggles again, walking in the water and getting out of the pool*))]
011	Manny	e:::h ((*crying face*))
012	Ken	Galina goggles *deh* Galina give the goggles
013	Manny	Galina here Galina here la ai: la [((*looking at Manny and pointing at the goggles*))]
014	Galina	((*enters the pool and swims*))
015	Manny	Haighh haighh haigh:::: galina [((*Galina comes out of the pool, takes out the goggles and throws it at Manny*))] [(0.05)] wei ah: [((*catching the goggles*))]
016		((*Galina walks back towards Manny,trying to get the goggles from Manny*))

017 ((*Manny keeping the goggles away*))

Manny begins the interaction by counting numbers "*one two three*" with her fingers and looks at Galina in line 001. Interestingly, here Manny is seen not making any error in counting. In the 0.05-second pause that follows, Galina puts the goggles on and swims across the pool in line 002. In the line of interest, Manny says " ↑ *I WANT I WANT I WANT GALINA I WANT GALINA I WANT*" in a louder volume requesting repeatedly for the goggles from Galina in line 003. High piercing creaking sounds of an individual with autism was noted in Damico and Nelson's (2005) study as one of the recurring patterns which is seen as a "problematic behaviour". However, the researchers concluded that "problematic behaviour" accomplished specific outcomes during interactions. In this case, Manny's high pitched voice conveys her unsatisfactory feeling and insistence of wanting to have the goggles from Galina. In the 0.05-second pause that follows, Galina adjusts her goggles. Galina says "*can wait ah*" in line 004 possible implies that Galina still wants to use the goggles. Manny repeats "*I want*" while looking at Galina possibly implies that Manny wants to put on the goggles in line 005. However, Galina ignores Manny's request and continues counting "*one two three*" in line 006 and swims. Manny says " ↑ *YAH YAH YAH YAH YAH YAH*" in a louder volume and laughs while calling out for Galina "*ha ha galina ha ha ha*" in line 007. In the 1.0-second pause that follows, Galina removes the goggles and blows her nose in line 008. Galina then sneezes. Manny looks at Galina in line 009. In line 010, Galina puts on the goggles and says to Manny "*like that ah*". Galina walks in the water. Then, Galina comes out of the pool. Manny shows her crying face.

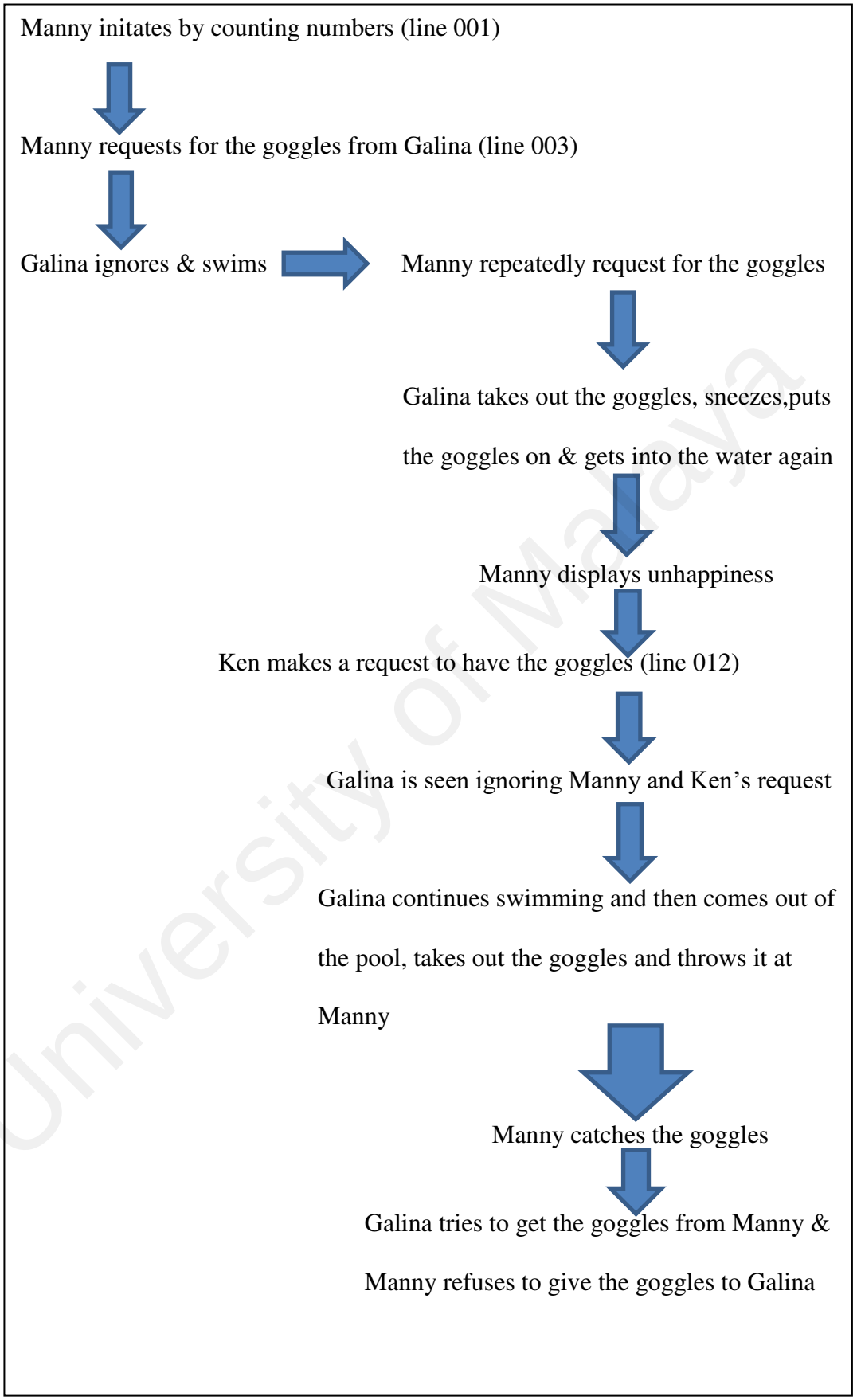
Ken also makes a request for the goggles from Galina in line 012 in Punjabi (*Galina goggles deh*) (*Galina give the goggles*). Manny takes a turn using Malaysian English

with "*Galina here Galina here la ai: la*" in line 013. Manny looks and points at the goggles. Here, Manny possibly implies that she wants to have the goggles first. Bateman's (2012) study found that children used gestures to support their verbal actions. Manny uses gestures i.e. pointing to support her verbal action. The use of Malaysian English, the particle "*la*" in Manny's utterance is also a recurrent pattern in her interactions and this can be seen in Extract 5. Galina then enters the pool and swims. Manny says "*Haighh haighh haigh::::*" and calls out "*Galina*" in line 015. Galina comes out of the swimming pool, then removes the goggles and throws it at Manny. In the 0.5 second pause, Manny says "*wei ah*" while trying to catch the goggles in line 015. Galina walks back to get the goggles from Manny but Manny holds the goggles away from Galina. Children with DD usually display non-compliant behaviour in interactions (Coe et al., 1999). Here, Manny possibly displays the non-compliant behaviour whereby she refuses to give Galina the goggles back.

The extract shows that the child with DD repeatedly makes a request to have the goggles from her younger sibling. However, Galina seems to be ignoring Manny's request and Galina continues using the goggles to swim. Yet, Manny keeps repeatedly requesting for the goggles. Even when the elder brother requests for the goggles from the younger sister, his request is rejected. Finally, Galina throws the goggles at Manny. The sequence closes with Galina wanting to get back the goggles from Manny but Manny displays rejection.

The following sequence pattern shows Manny insisting of wanting to have the goggles from Galina. The interaction pattern shows that Manny initiates by counting numbers correctly (*one two three*). Manny says "*I want*" requesting repeatedly for the goggles from Galina. Ken also requests to have the goggles. Nevertheless, Galina is seen possibly ignoring both Manny and Ken's request.

Diagram 6.



The extract below is from the interaction of Manny, Galina and Ken in the Gurdwara compound. Manny initiates to play cards with Ken and Galina. Ken apparently does not want to participate but Manny keeps insisting that he play.

Extract 7 (Card game).

→001	Manny	Galina ↑ START Galina Ken me [((*looking at Galina, pointing her index finger at Ken*))]
002		((*Ken looking at Manny and shakes his head from left to right*))
003	Manny	Galina: Ken don't want to play Want ahh?
004		(0.03) [((*Manny touching Ken's forehead with her left hand*))] mummy Ken hot Ken want play don't wa:n a::h
005	Galina	ha ha ha ha [((*starting to arrange the cards*))]
006	Manny	ken play ahh don't want ahh Galina baby play ahh ooooohhhoooo [((*holding her baby doll and putting it on the table*))]
007	Galina	((*nodding*))
008	Manny	can we baby [((*looking at Galina, looking at her baby doll*))]
009	Galina	((*nodding*))
010	Manny	Ken no ah:::: [((*looking at Ken, distributing the cards to Galina*))]
011	Galina	E::::h this is [((*looking at the cards*))]
012	Manny	↑MINE la:::[((*putting some cards on the table*))]
013	Galina	↑MINE mine mine [((*looking at Manny*))]
014	Manny	*aahh leh* [((*giving a few cards to Galina*))] take this
015	Galina	I will count I will count e::iye:::h
016	Manny	count three four
017	Galina	*tenu pata nehi kida* count three four phi po:h a::: i::: you don't know how to count three four phi po:h a::: i:::
018	Manny	five six nine nine
019	Galina	faster
020	Manny	Ken play?
021	Galina	no he no play

Manny initiates with a turn " *Galina ↑START Galina Ken me*" while looking at Galina in line 001 (line of interest). Manny uses gestures to emphasizes Ken's

participation by pointing her index finger at Ken. Ken looks at Manny. Ken responds gesturally, shaking his head from left to right. Interestingly, here Ken appears to be not attending the talk directed to him and responds with gestures to explain himself. Manny produces a noteworthy turn, a question in line 003, "*Galina: Ken don't want to play Want ahh?*". This is a noteworthy turn as Manny constructs and produces a question. Conversation partners (CPs) of children with DD usually initiates interaction and employs strategies such as repetition and questioning (Geils & Knoetze, 2008). In this case, Manny is seen initiating the interaction with Ken and Galina. Additionally, Manny produces a question, directed at Galina. In the 0.03-second pause that follows, Manny is seen touching Ken's forehead most likely to check whether he has a fever or something in line 004. Manny then appears to be telling her Mother "*mummy Ken hot Ken want play don't wa:n a::h*" in line 004. Manny seems to be displaying affection and care towards her elder brother. In line 005, Galina laughs "*ha ha ha ha*" and starts to arrange the cards. Manny takes her turn in line 006 with "*ken play ahh don't want ahh Galina baby play ahh ooooohhhoooo*" while holding her baby doll and putting it on the table. Galina nods. Manny constructs her turn with three words "*can we baby?*" while looking at Galina and looking at her baby doll in line 008. Manny possibly implies that she wants her baby doll by her side. Galina nods again in line 009 as a gesture for accepting her request.

The trajectory of turn that follows shows that Manny wants to know if Ken wants to participate in the card-playing game. Manny says "*Ken no ah:::*" while looking at Ken and distributing the cards to Galina in line 010. Galina says "*E:::h this is*" while looking at the cards in line 011, which can be seen as a possible lack of reference to any object. Manny uses the possessive pronoun in a louder volume " ↑*MINE"* with a combination of an exaggerated Malaysian English "*la:::*" while putting some cards on the table in line 012, a similar pattern used by Manny in Extract 2 during play in the

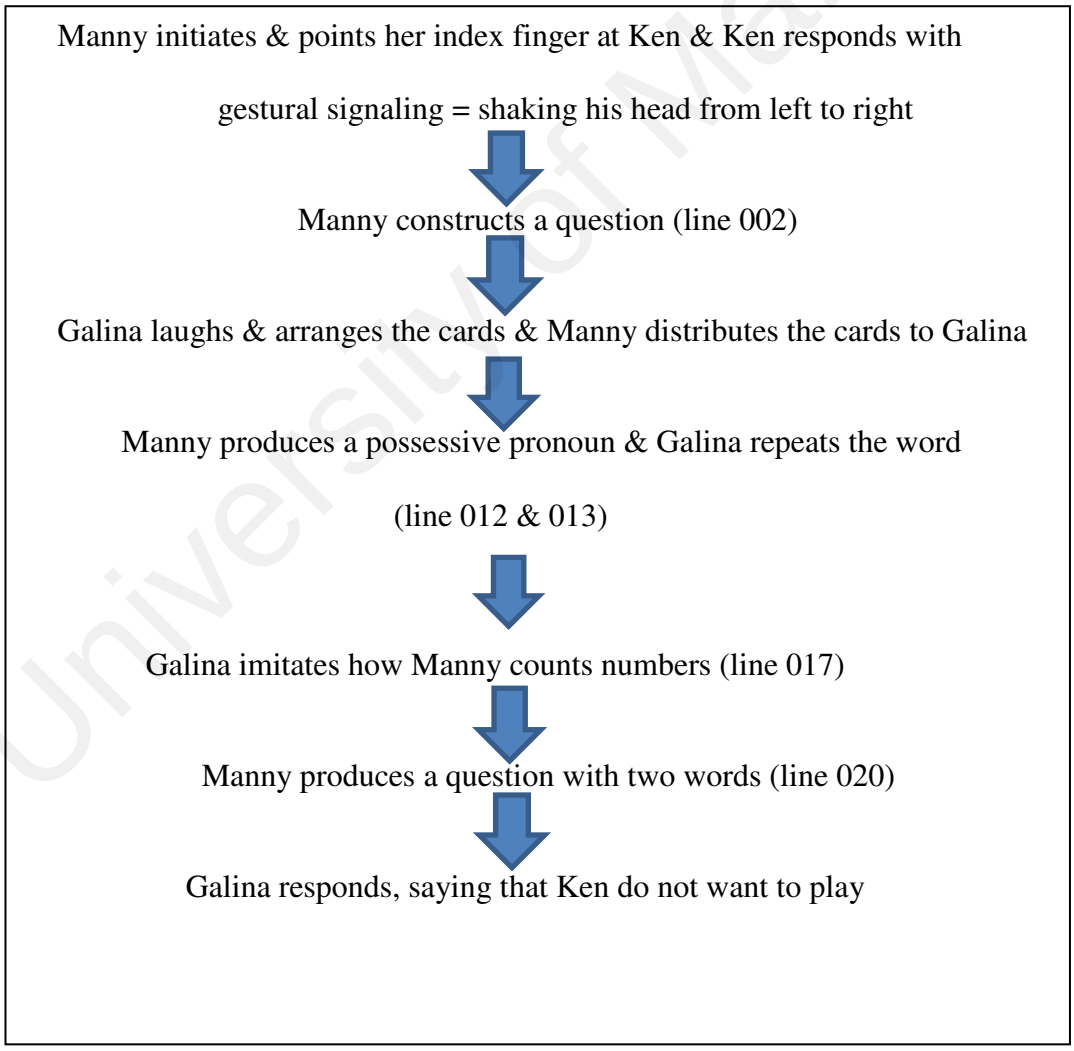
home environment. Galina apparently repeats the possessive pronoun used by Manny in line 013 " ↑*MINE*"in a louder volume and repeats the word twice in a normal tone "*mine mine*". Galina looks at Manny. Manny produces two words in Punjabi (*aahh lehh*) (*take this*) while giving a few cards to Galina in line 014. Galina self nominates herself to count with "*I will count I will count e::iye:::h*" in line 015. In line 016, Manny says "*count three four*". Galina uses a mix of Punjabi and English in the next turn (*tenu pata nehi kida count*) (*you don't know how to count*) and imitates how Manny counts numbers "*three four phi po:h a::: i:::*" in line 017. Children with DD are less active in terms of initiation but imitates their siblings more often (Abramovitch, Stanhope, Pepler, & Corter, 1987; Dallas, Stevenson & McGurk, 1993). However, the finding from this extract is noteworthy, as Manny appears to be active, she initiates the play and invites her elder sibling to participate in the card game. Notably, the younger sibling imitates how Manny usually counts numbers. This could be also a natural phenomenon involving children. Manny counts in line 018 "*five six nine nine*". The "error" in counting made by Manny is also an example of the manifestation of the deficit. In line 019, Galina's next turn response "*faster*" possibly indicates that she wants to begin the game. Manny constructs a simplified question with two words with "*Ken play?*" in line 020. Children with DD construct simplified utterances during interaction due to the lack of linguistic resources (Geils & Knoetze, 2008). Galina responds to Manny in a simplified manner with "*no he no play*" in line 021. Family members of children with DD also employ strategies such as short and simple utterances and repetitions to sustain the interaction (Geils & Knoetze, 2008). The simplification is a recurrent pattern in their conversation which probably can be seen as a strategy used by the sibling to facilitate the interaction with Manny.

This extract shows that Manny invites her siblings to participate in the card game. Manny also seems to be showing concern for her elder brother. Manny is seen

repeatedly giving invitation and insisting Ken to play cards but he refuses to participate. Manny also appears to be wanting to count the cards and distribute them even when Galina tells Manny that she is not counting it correctly.

The sequence pattern below shows Manny inviting Ken to play cards. The interaction pattern shows Manny constructing a question in her turn. However, Ken does not respond positively. Manny produces a possessive pronoun "*MINE*" and Galina repeats the word. Manny is also seen producing a simplified question with only two words "*Ken play*?" The sequence pattern shows no aggression during the play.

Diagram 7.



The extracts (5 – 6) discussed in this section, shows Manny displaying some problematic behaviour and aggressive behaviour. The play interactions outside the home environment also show that Manny behaves in a physically threatening manner towards Galina. This can be seen in Extract 5 when Galina does not comply with the demands of the child with DD, Manny then resorts to physical force. Manny also displays insistence and dissatisfaction when she does not get what she wants and this is evident in Extract 6. Interestingly, in Extract 7 there is no display of aggression. Manny only displays insistence of wanting her elder sibling to participate in the card game. However, Manny appears to be showing her concern for her elder brother gesturally when he refuses to participate in the game.

Evidently, the interaction patterns outside the home environment show that Manny frequently uses simplified turn sequence. It is observed that Manny produces a question when interacting with her siblings. Manny often uses repetition in her turns at talk. Researchers have found that CPs of children with DD often initiates interaction and uses questioning and repetition to sustain the interaction (Geils & Knoetze, 2008). However, in this case, Manny appears to be able to initiate as well as sustain the interaction with her siblings. Manny does not only use Malaysian English during play in the home environment but she also uses it in interactions outside the home environment. Manny's high pitched voice is a recurrent pattern of behaviour in and outside the home environment. Galina appears to be using repetition and short utterances when interacting with Manny. Galina is also seen imitating how Manny usually counts numbers.

4.2 Other routine activities

Interactions between Manny and her siblings also include other routinely occurring activities aside from play. Manny and her siblings, Ken and Galina interact in other routine activities at home and outside the home environment. The other routine activities at home include washing up after a meal, getting ready to go to Gurdwara and selecting clothes to wear after a shower. The other routine activities outside the home include selecting a dress at a shopping mall and making a choice of a soft drink at a grocery store.

4.2.1 Other routine activities at home

Three video recordings of Manny and her siblings' interaction during other routine activities were made in the home environment. Each video recording is between 30 and 60 minutes long. Only selected sections of the video recordings were transcribed following the Jeffersonian system of transcription notation.

One of the routine activities is the household chores assigned to the children by the adults at home.

The extract below shows interaction in the kitchen area between Manny and a cousin who is visiting from India, Honey. In this sequence, Manny is seen to be engaged in the activity of washing up after a meal. The cousin who appears familiar with the children has possibly joined them for the meal. Manny is focused on the task at hand at the beginning of this extract and remains oriented to the task despite the interruptions from the others present.

Extract 8 (Washing up).

001	Honey	[wash hand.] [((*Manny turns to look at Honey as he walks over to the sink*))]
002		[(1.5)] [((*Honey places his hands above Manny and washes his hands*))]
003	Manny	[honey a::h] /ha:n/ /ni:/ [((*Honey turns off the tap*))]
004	Honey	[*kuch nehi*] nothing [((*Honey splashes water on Manny after rinsing his hands & walks away*))]
→005	Manny	[my *amni*] [stupid /ha:ni/, stupid HECK.] [((*looking at her wet left shoulder*))][((*continues scrubbing the plate*))]
006		[(1.5)] [((*Manny continues rinsing the plates and puts them away before picking up a cloth to wipe the sink area*))]
007	Manny	((*the telephone ringing*))mummy [telephone.] [((*walking towards the dish rack*))]

Honey, the cousin who is visiting says, "*wash hand*" in line 001 prompting Manny to turn to look at him as he walks over to the sink. Having announced his intention, Honey places his hands over Manny and proceeds to wash his hands. Manny's next turn response is a display of displeasure possibly due to the disruption of her on-going activity or his intimidation as Honey towers over her to wash his hands. She says his name "*honey*" followed with "*a::h,*" while he turns off the tap. She completes her turn with another exaggerated repeat of his name "*/ha:n/ /ni:/*" as if she is admonishing him in line 003. Honey's retort accomplished with two Punjabi words (*kuch nehi*) in line 004, simply means "nothing". In overlap, he also splashes water on her after rinsing his hands before walking away.

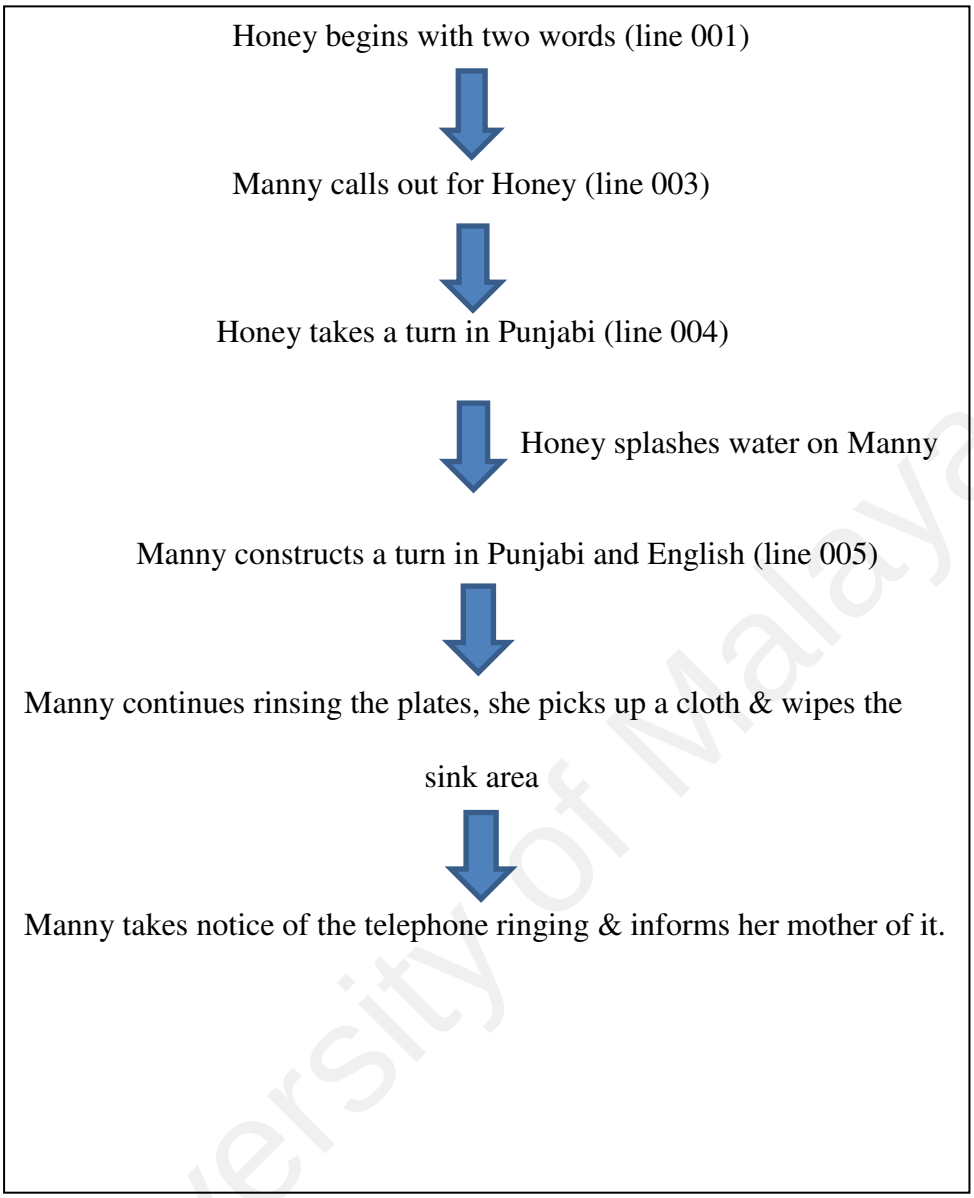
Having been dismissed in that manner, Manny produces a noteworthy turn using a combination of English and Punjabi (my *amni,* stupid */ha:ni/,* stupid HECK) in the line

of interest, line 005. As she says the phrase "my *amni*", she looks at her wet left shoulder and is possibly commenting on the "water" that Honey has splashed on her. Interestingly, the sequence of phonemes in the Punjabi word (*Pani*) (*water*) appears to be reordered and the sound /p/ is replaced with the nasal /m/ in Manny's production of "*amni*". This may be attributable to phonological processing deficits often experienced by children with DD in producing commonly used words (Bowen, 2014). The second phrase in this turn, "*stupid /ha:ni/*" appears to be a display of annoyance directed at the cousin and the final upgraded form "*stupid HECK*" with the final word delivered in a louder volume confirms this display of annoyance. The final phrase "stupid heck" is a recurrent pattern in Manny's interactions with her siblings. More importantly, the construction of this turn does show Manny's ability to code-switch to mark her turn to be recipient designed for the cousin from India. In the 1.5-second pause that follows, Manny completes the task of "*rinsing the plates and puts them away before picking up a cloth to wipe the sink area"* in line 006. The sequence comes to an end as Manny takes notice of the telephone ringing and informs her mother of it.

This extract showcases Manny's ability to independently carry out one of the chores, washing the dishes after a meal. She displays annoyance when interrupted but manages to stay focused and completes the task expected of her in this situation.

The following sequence pattern below shows interactions of Manny and Honey. The pattern displays Manny completing a task independently despite the interruption caused by Honey. Honey appears to be using short utterances in the interaction. Manny uses an insult "*stupid HECK*" to display her displeasure.

Diagram 8. .



Another routinely occurring activity involving Manny, her siblings and relatives include getting ready to go to Gurdwara.

The next extract is from the interactions of Sheila and Rose who are both Manny's aunts, Dadu, Galina and Manny's mother at the hall area in the house. The family members are getting ready to go to Gurdwara for prayers. Manny appears to be seeking attention by folding her pants and showing her injury to Sheila, Rose, Dadu and her Mother. It is observed from the data that Manny does not attend to the talk directed to her instead she shows gestures to explain herself.

Extract 9 (Getting ready to go to Gurdwara).

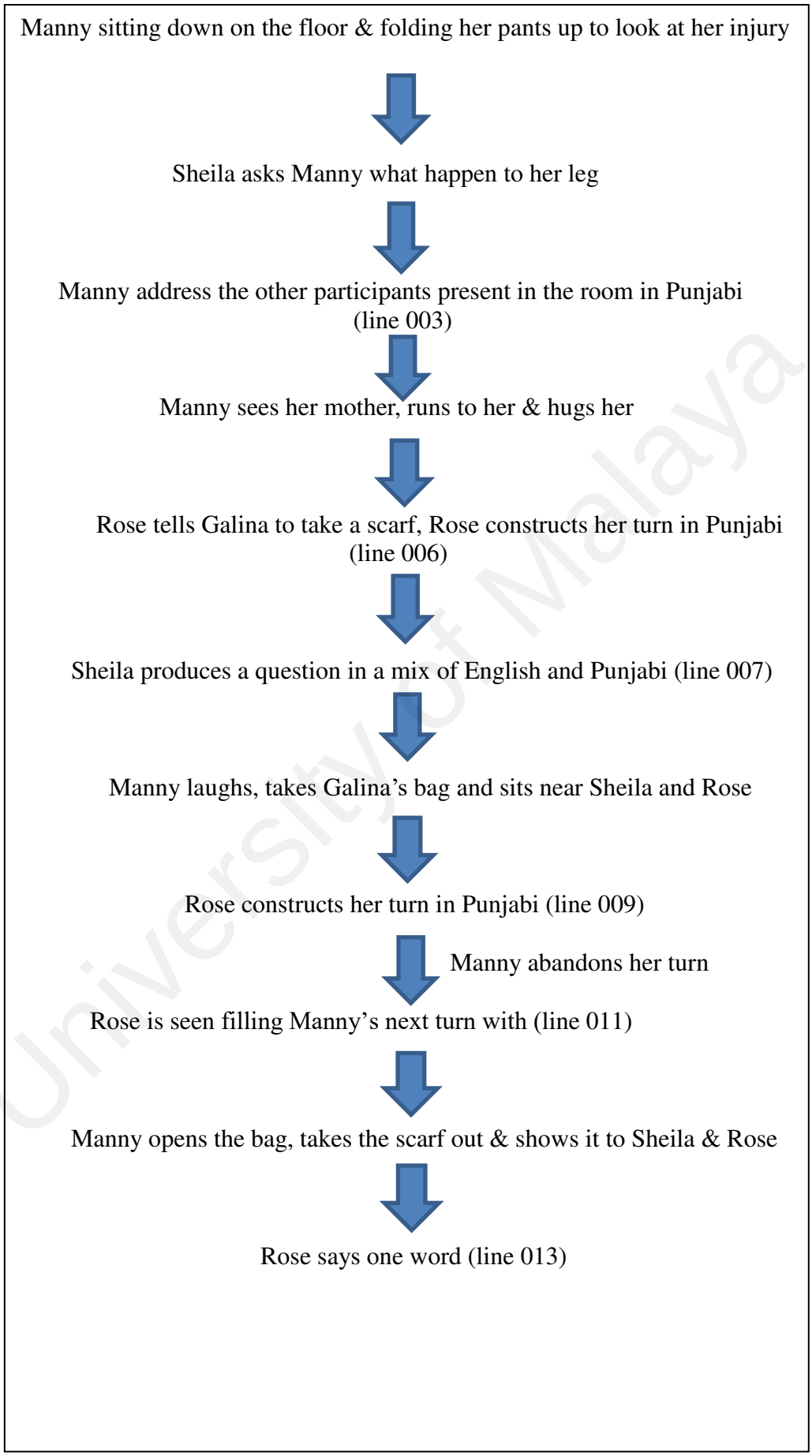
001		((*Manny sitting down on the floor, looking at Sheila and Rose, folding her pants up, looking at the injury on her leg*))
002	Sheila	what happen to your leg? [((*looking at Manny*))]
→003	Manny	↑ MOMA no: *dadu* u:h mah grandpa [((*touching the plaster on her leg with her index finger,getting up, running to Dadu, showing her leg to him, seeing her Mom walking down stairs, runs to her and hugs her*))]
004	Galina	mummy [((*holding her bag and keeping her bag on the sofa*))]
005	Manny	Galina ba:g galina bag ba::g mama [((*looking at Galina, sitting near Rose, and playing with her baby doll*))]
006	Rose	*Galina lehlo rumall apo apne lehle moto tha* Galina take your own scarf taken fatty's one
007	Sheila	*where your rumall? eh moto moto bring rumall.* go and find where your scarf? eh fatty fatty bring scarf. go and find
008	Manny	hahaha:: [((*getting up and running to the sofa, taking Galina's bag and sitting near Sheila and Rose*))]
009	Rose	*tera bag nehi puchia rumall puchia kithe ah* [((*looking at Manny*))] didn't ask for your bag asked for your scarf
010		((*Manny opening Galina's bag*))
011	Rose	*kithe? viche pehya* [((*looking at Manny*))] where? is it inside
012		((*Manny takes the scarf out of the bag and shows it to Sheila and Rose*))
013	Rose	good

Manny is seen sitting down on the floor, looking at Sheila and Rose. Manny makes a visual display of the injury by folding her pants up and looking at the injury on her leg. Sheila constructs a turn with a question "*what happen to your leg*?", in line 002 while looking at Manny. In the line of interest (line 003), Manny says " ↑*MOMA no: dadu u:h mah*" to possibly express the pain and seek their attention. Manny touches the plaster on her leg with her index finger, gets up, runs to Dadu, and shows her leg to him. Manny then, sees her Mom coming downstairs, runs to her, and hugs her. Galina enters the hall and calls out "*mummy*" in line 004 while holding her bag. Galina keeps her bag on the sofa. Manny says "*Galina ba:g galina bag ba::g mama*" while looking at Galina in line 005. Manny sits near Rose and plays with her baby doll. Rose, takes a turn in line 006 in Punjabi with (*Galina lehlo rumall apo apne lehle moto tha*) (*Galina take your own scarf taken fatty's one*). In line 007, Sheila asks in a mix of English and Punjabi (*where your rumall? eh moto moto bring rumall. go and find*) (*where your scarf? eh fatty fatty bring scarf. go and find*). Manny laughs "*hahaha::*" in line 008. Manny then gets up, runs to the sofa, takes Galina's bag and sits near Sheila and Rose. In response, Rose says in Punjabi (*tera bag nehi puchia rumall puchia kithe ah*) (*didn't ask for your bag asked for your scarf*) while looking at Manny in line 009. Manny abandons her turn at talk and she opens the bag. Rose is seen filling Manny's next turn with (*kithe? viche pehya*) (*where? is it inside*) in line 011 while looking at Manny. Manny takes the scarf out of the bag and shows it to Sheila and Rose. Rose says a single word "*good*" in line 013.

The observation shows that Manny appears to be intentionally seeking attention from Sheila, Rose, Dadu and her Mother by folding up her pants and showing them the injury on her leg. Manny is seen not attending to the talk directed to her. The child DD is seen using actions and displaying the ability to comprehend.

The sequence pattern below shows the interactions of Manny's family members as they get ready to go to Gurdwara. The interaction pattern shows that Manny does not respond to Sheila and Rose. Manny abandons her turn in the sequence. However, Sheila and Rose use a mix of English and Punjabi in the interaction.

Diagram 9.



The following routine activity involving Manny and her sibling is selecting clothes to wear after a shower.

This extract is from the interactions of Manny and Galina that take place in the bedroom as Manny decides what to wear after having her shower. Manny seeks permission from her mother to wear jeans. Galina is seen giving instructions to Manny about what to wear. Galina also reminds Manny not to make a mess in the bedroom.

Extract 10 (Selecting clothes to wear after a shower).

001	Manny	a::h [((*holding her jeans, looking at Galina*))]
002	Galina	Mummy I don't care I don't care don't care
003	Manny	Uhm ↑ MAMA MA:MA::: [((*walking out of the room, standing near the staircase*))]
004	Mom	a::::h
→005	Manny	Mummy jeans? [((*holding up her jeans and showing to her Mom*))]
006	Mom	*nehi* no
007	Manny	*nehi* [((*walking into the room, pointing her index finger at Galina,* no *opens the clothing drawer in the cupboard looking for something*))]
008	Galina	ah [((*looking at Manny*))]
009	Manny	Galina my short e:::h see
010	Galina	e:::h hahahaha
011	Manny	see la [((*opening another drawer in the cupboard, pointing at a t-shirt, looking at Galina*))]
012	Galina	Manny *kelahri nah* Manny don't make a mess
013	Manny	AH [((*holding the t-shirt*))]
014	Galina	cannot faster ah [((*standing near Manny*))]
015	Manny	wait a::h mummy short ┌((*looking at Galina,taking out a pair of shorts*)) └((*Galina closing the cupboard*)) ┘
016	Galina	↑GO wear your own [((*walking out of the room*))]

The interaction begins with Manny saying "*a::h*" in line 001 while holding her jeans and looking at Galina. Children with DD generally produce "empty turns" such as "*ah…*" "*er…*" "*hmm…*" and "*uhm…*" during interaction (Adams & Bishop, 1989). Galina says "*Mummy I don't care I don't care don't care*" in line 002, lacks reference to any object. Manny then says "*Uhm*" and calls out for her Mom, " ↑*MAMA MA:MA:::*" in a higher volume with exaggeration while walking out of the room and stands near the stairs in line 003. In line 004, Manny's mother says "*ah*". In the line of interest (line 005), Manny is seen asking for permission from her mother with "*Mummy jeans?*". The gesture of holding up her jeans and showing it to her mother is seen as an act of seeking permission from her mother. Manny's mother rejects with a negative single Punjabi word (*nehi*) (*no*) in line 006. Manny then walks into the room and repeats the Punjabi word (*nehi*) (*no*) in line 007 while pointing her index finger at Galina. Manny is seen repeating the word her Mother has used. Manny then opens the clothing drawer in the cupboard to find something else. Galina says "*ah*" in line 008, without referencing to any object. Galina looks at Manny.

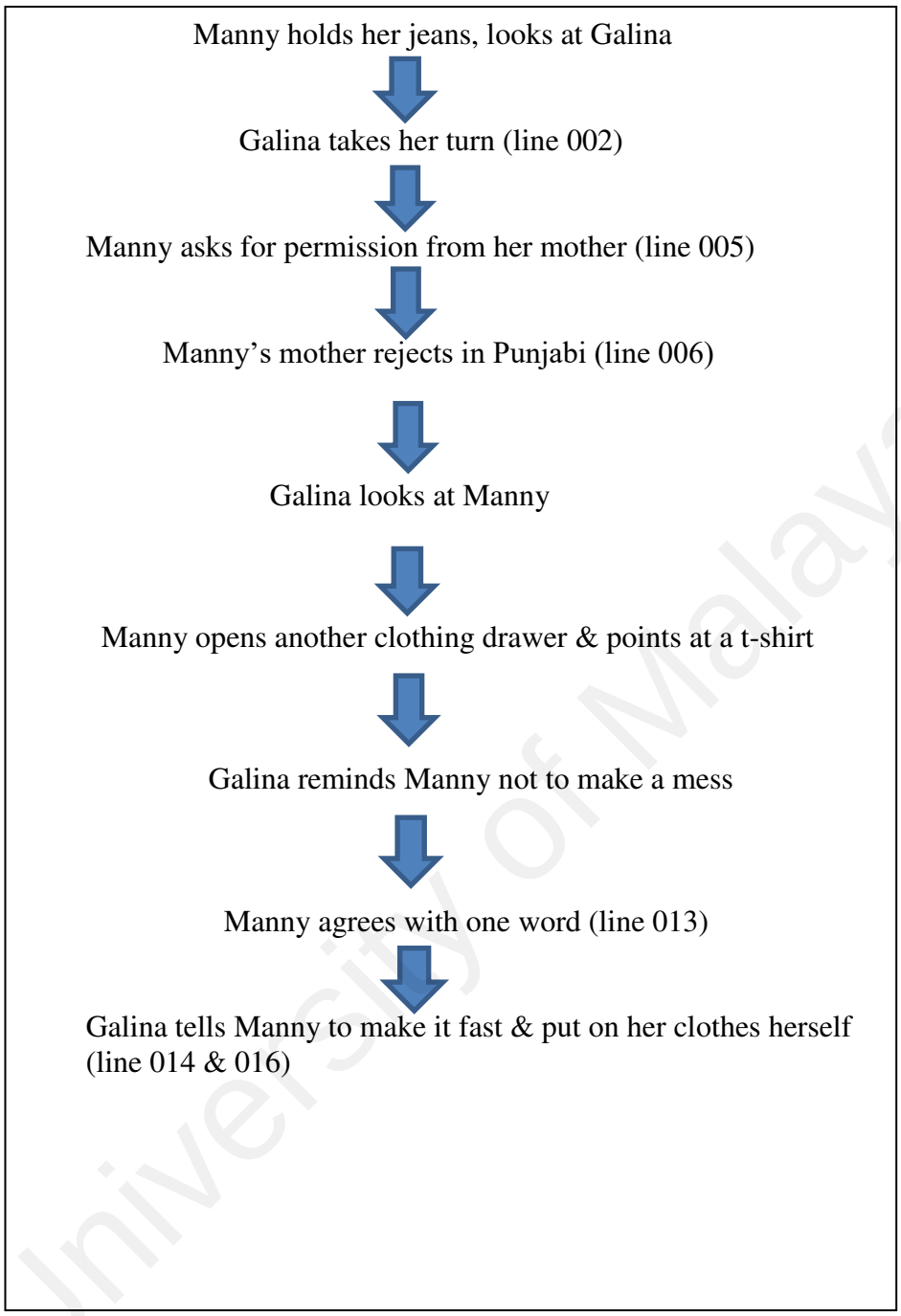
In line 009, Manny constructs the next turn with, "*Galina my shorts e:::h see*". Galina says "*e:::h*" and laughs "*hahahaha*" which also lacks reference to anything in line 010. Manny uses Malaysian English "*see la*" while opening another drawer in the cupboard, pointing at a t-shirt and looking at Galina in line 011. The utterance "*see la*" is a similar pattern used by Manny in Extract 2 during play in the home environment. Manny is seen possibly looking for other options of clothing. Children with DD often interact with gestural signalling such as pointing to compensate their limited language resources (Damico & Nelson, 2005). Throughout the interaction Manny either points her index finger at Galina or points at a t-shirt in the cupboard to request for it. Gestural signalling is known as compensatory strategy used by an individual with autism to achieve desired communication (Damico & Nelson, 2005). Here, Manny uses this

compensatory strategy to achieve the desired interaction with Galina. Galina appears to be giving Manny a reminder in Punjabi (*Manny Kelahri nah*) (*Manny don't make a mess*) in line 012. Manny appears to be possibly displaying agreement with "*AH*" while holding the t-shirt in line 013. Galina displays impatience in the next turn with "*cannot faster ah*" while standing near Manny in line 014. In response to Galina's urge, Manny constructs "*wait a::h mummy short*" while looking at Galina in line 015. Manny takes out a pair of shorts from the cupboard and Galina closes the cupboard. Galina urges Manny with " ↑*GO wear your own*" in line 016. TDC offer advice, explanation of instructions and guidance for their siblings with DD during activities (Hodge, 2015). Likewise, Galina is seen instructing Manny to independently put on her clothes. Galina walks out of the room which marks the sequence closure.

The extract above shows that the child with DD seeks for permission from her mother regarding what to wear. Manny appears to be wanting to wear jeans and seeks permission from her mother but her mother disagrees with her. The younger sibling also appears to be reminding Manny not to make a mess when she opens the cupboard to find her clothes. Galina instructs Manny to put on her clothes and Manny is seen following the instructions given by Galina.

The sequence pattern below shows Manny asking permission from her mother to wear a pair of jeans. The interaction pattern displays Manny's mother rejecting her request in Punjabi with a single word "*No*". Galina also gives Manny a reminder in Punjabi to not make a mess in the room. Manny appears to be obeying her mother and following Galina's instructions.

Diagram 10.



The extracts (8 – 10) discussed in this section, interestingly shows no conflict and no display of aggression as seen in the previous section on interaction during play in and outside the home environment. Manny is seen independently completing the routine activity of washing the dishes despite the interruption in Extract 8. However, Extract 9 shows Manny not attending to talk directed to her by her family. Manny is also seen obeying her mother, following instructions given to her by Galina and independently completing the task in Extract 10. Manny conforms to expectations and follows appropriate steps to complete a task in the presence of her siblings, mother and other relatives. This suggests that when engaged in specific tasks, Manny is able to complete them without disruptions or display of problematic behaviours.

The interaction patterns in other routine activities in the home environment show that Manny merely uses actions and gestures to display comprehension of the preceding turns. Manny frequently uses short utterances in her turns at talk. At times, Manny does not conform to the expectation of response in the next turn. In the turn sequence, Manny complies with her family's instructions without any display of aggression.

4.2.2 Other routine activities outside their home

Two video recordings of Manny and her siblings' interaction during other routine activities were made outside the home environment. Each video recording is between 30 and 60 minutes long. Only selected sections of the video recordings were transcribed following the Jeffersonian system of transcription notation.

Interactions during other routine activities outside the home between Manny and her siblings include selecting a dress at a shopping mall and making a choice of a soft drink at a grocery store.

The following extract is from the interactions of Manny and Galina that takes place in the clothing section at a shopping mall. Galina is seen initiating the interaction with a turn in sequence, asking Manny to select a dress she likes. Manny mentions the colour she likes but does not make any choice.

Extract 11 (Selecting a dress at the shopping mall).

001	Galina	which colour you want. what colour? [((*holding a purple dress and showing it to Manny*))]
002	Manny	[I no wan(t)] [((*holding her Barbie doll with her left hand, holding a book with her right hand, looking at other dresses*))]
003	Galina	which colour? [((*looking at Manny*))]
→004	Manny	[I want blu::] [((*pointing at Galina's dress*))]
005	Galina	you want this colour. ok, find from here [((*pointing at a dress*))]
006		this [*baju* dress [((*holding a pink dress up, showing it to Manny*))]
007	Manny	[I no wan(t)] [((*putting her Barbie doll and book away*))]
008	Galina	[why? I still see- I see your-] [((*Galina takes Manny's Barbie doll and looks at the Barbie doll closely*))]

009 Manny I want [colour
[((*picking up a dress, looks at it & puts it away*))]

010 Galina who want [this?]
[((*holding up the Barbie doll*))]

011 Manny ↑ MINE [((*looking at the dresses*))]

012 [(1.0)]
[((*Manny walks over to Galina, grabs the Barbie doll from her*))]

013 Galina [this is mine]
[((*looks at a dress*))]

014 Manny Galina [help, (h)old yes:]
[((*trying to hold the Barbie doll and the book*))]

015 Galina [this one ↓]
[((*holds the Barbie doll from Manny*))]

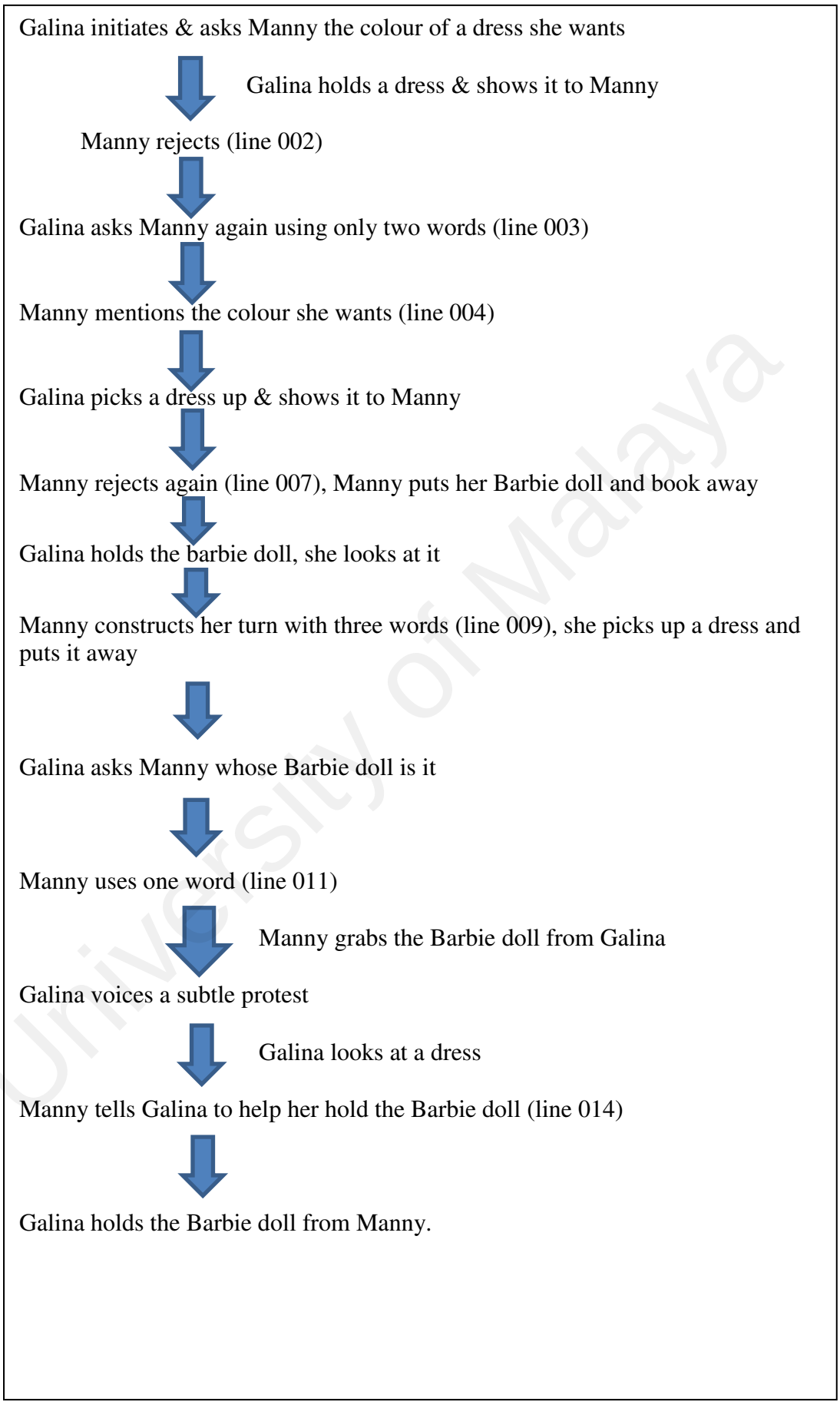
Galina initiates the interaction with a question "*which colour you want. what colour?*" while holding up a purple dress and showing it to Manny in line 001. In a disaffiliative move, Manny rejects Galina's selection with "*I no wan(t)*" while holding her barbie doll with her left hand and holding a book with her right hand in line 002. Manny looks at other dresses. In the next turn, Galina says "*which colour?*" while looking at Manny in line 003. In the line of interest (line 004), Manny states her colour of choice with "*I want blu::e*". Manny points at Galina's dress. Galina expands her next response for further clarification in line 005 with "*you want this colour. ok, find from here*", while pointing at a dress. Galina is also seen giving a suggestion. Galina says in a mix of English and Malay (*this baju*) (*this dress*) while holding up a pink dress and showing it to Manny in line 006, a similar pattern used by Ken in Extract 1 during play in the home environment. Code-switching is a common phenomenon in Malaysian society (Rajadurai, 2004). Galina's code-switching can be seen as a "functional strategy" employed by a Malaysian child to convey a message in an effective manner so that Manny can comprehend the context (Cheng, 2003). Manny responds with "*I no wan(t)*" in line 007. Manny keeps her barbie doll and book away. In line 008, Galina

asks "*why? I still see- I see your-*" which can be considered as a lack of reference. Galina takes the barbie doll and looks at it closely. Manny says "*I want colour*", picks up a dress, looks at it closely and keeps it away in line 009. Galina constructs her next turn with a question "*who want this?*" while holding up the barbie doll in line 010. In response, Manny uses the possessive pronoun " ↑ *MINE*" in a louder volume while looking at the dresses in line 011. In the 1.0-second pause that follows, Manny walks over to Galina, grabs the Barbie doll from her in line 012. Galina voices a subtle protest in the next turn with "*this is mine*" while looking at a dress in line 013. Manny says "*Galina help, (h)old yes:*" while trying to hold her barbie doll and the book in line 014. Galina responds with "*this one* ↓ " in a lower volume and holds the barbie doll from Manny in line 015.

The extract shows that Galina is seen initiating the interaction by asking Manny to make a choice of her own. The younger sibling is seen giving time and space and also suggesting to the child with DD by showing some dresses in helping her make her own choice. Galina's attention shifts towards the Barbie doll that Manny was holding. Manny appears to be showing aggressive behaviour by grabbing the Barbie doll from Galina. The sequence closes with Manny not being able to make a choice of her own.

The sequence pattern below shows Galina assisting Manny in making a choice of a dress. The interaction pattern shows that Manny repeatedly rejects Galina's suggestion with "*I no wan(t)*". Galina employs a question in her turn sequence, she uses only two words, "*which colour*?" Manny mentions the colour she wants but she is unable to make a choice. Hence, the task is seen as incomplete.

Diagram 11.



The next extract below is the interaction of Ken and Manny at a grocery store. Ken initiates the interaction with a question, asking Manny what she wants. Manny is seen unsure as she walks around looking at the shelves in the grocery store. Manny walks to the soft drinks fridge, looks at the drinks and points her index finger at the drinks. However, Manny is unsure when her elder brother seeks clarification, asking her to make a choice between two soft drinks. The sequence ends with Manny being able to make a decision of the drink she wants.

Extract 12 (Making a choice of a soft drink at a grocery store).

001	Ken	Manny what you want? [((*walking behind of Manny*))]
002	Manny	AH [((*walking and looking around at the shelves*))]
003	Ken	Manny what you want what you want?
004		((*Manny walking towards the soft drink fridge, pointing at the drinks*))
005	Ken	[this one ah] [buy this one yes la] [((*Ken pointing at a drink*))] [((*Ken pointing at another drink*))]
006	Manny	A:: [((*trying to open the fridge*))]
007	Ken	ok you want this one ok ah this one ah [((*opening the fridge, Manny taking out a 7-up from the fridge*))]
008		((*Manny nodding*))
009	Ken	this one or this one [(1.0)] [((*takes out a pepsi, and a coca-cola from the fridge*))] [((*Manny looks at the drinks closely*))]
→010	Manny	orange orange orange [((*Ken keeps the pepsi and coca-cola back in the fridge*))]
011	Ken	this one [((*pointing at a mirinda orange in the fridge*))]
012	Manny	ah I want I want
013	Ken	this one ah [((*taking a Mirinda orange out from of the fridge*))]
014	Manny	aah deh [((*taking the mirinda orange from Ken*))] *give this*
015	Manny	KEN [((*pointing at the 7-up*))]
016	Ken	I don't want I don't want
017	Manny	[here] [a::] [((*taking the drink to the payment counter*))][((*walks towards the ice*] *-cream fridge*))]

018	Ken	[hm::] [((*walking towards the ice cream-fridge, looking at the ice*] [*creams,walks back to the payment counter*))]
019	Manny	WAIT LA [((*looking at the ice cream*))]
020	Ken	later we buy [((*Ken makes the payment of the drink*))]
021		((*Manny trying to open the ice-cream fridge*))
022	Manny	ah [(1.0)] [((*walks to the payment counter, holds the drink on the counter twisting and turning the bottle cap*))]

Ken initiates the interaction with "*Manny what you want?*" in line 001 while walking behind her into the grocery store. Manny says "*AH*" in line 002 while walking and looking around the grocery shelves. Ken asks "*Manny what you want what you want?*" in line 003. CPs of children with DD often uses repetition to maintain the interaction (Geils & Knoetze, 2008). Similarly, Ken is seen using repetition as a strategy to maintain the interaction with Manny. Manny walks towards the soft drinks fridge and points at the drinks. Ken asks in line 005, "*this one ah*" while pointing at a drink. Ken suggests another drink in the same line with "*buy this one yes la*" while pointing at the drink. Manny says "*A::*" in a louder volume while trying to open the fridge in line 006. In line 007, Ken constructs his next turn with "*ok you want this one ok ah this one ah*". This turn construction produced by Ken could be also a natural phenomenon involving children. Ken opens the fridge and Manny takes out a 7-up drink. Manny nods.

The next turn possibly shows Ken wanting Manny to make a choice. Ken asks "*this one or this one*" in line 009. In the 1.0-second pause that follows, Ken takes a Pepsi and a Coca-Cola out from the fridge. Manny is seen looking carefully at the drinks. In the line of interest (line 010), Manny mentions the flavour repeatedly "*orange orange orange*". Ken keeps the Pepsi and Coca-Cola back in the fridge. Ken clarifies in the

following turn with "*this one*" while pointing at a Mirinda Orange in line 011. Manny is seen responding with "*ah I want I want*" in line 012, a similar pattern used by Manny in Extract 6 during play in the outside environment. In the following turn, Ken says "*this one ah*" and takes out a Mirinda Orange from the fridge in line 013. Manny says in Punjabi (*aah deh*) (*give this*) in line 014 and takes the Mirinda Orange from Ken.

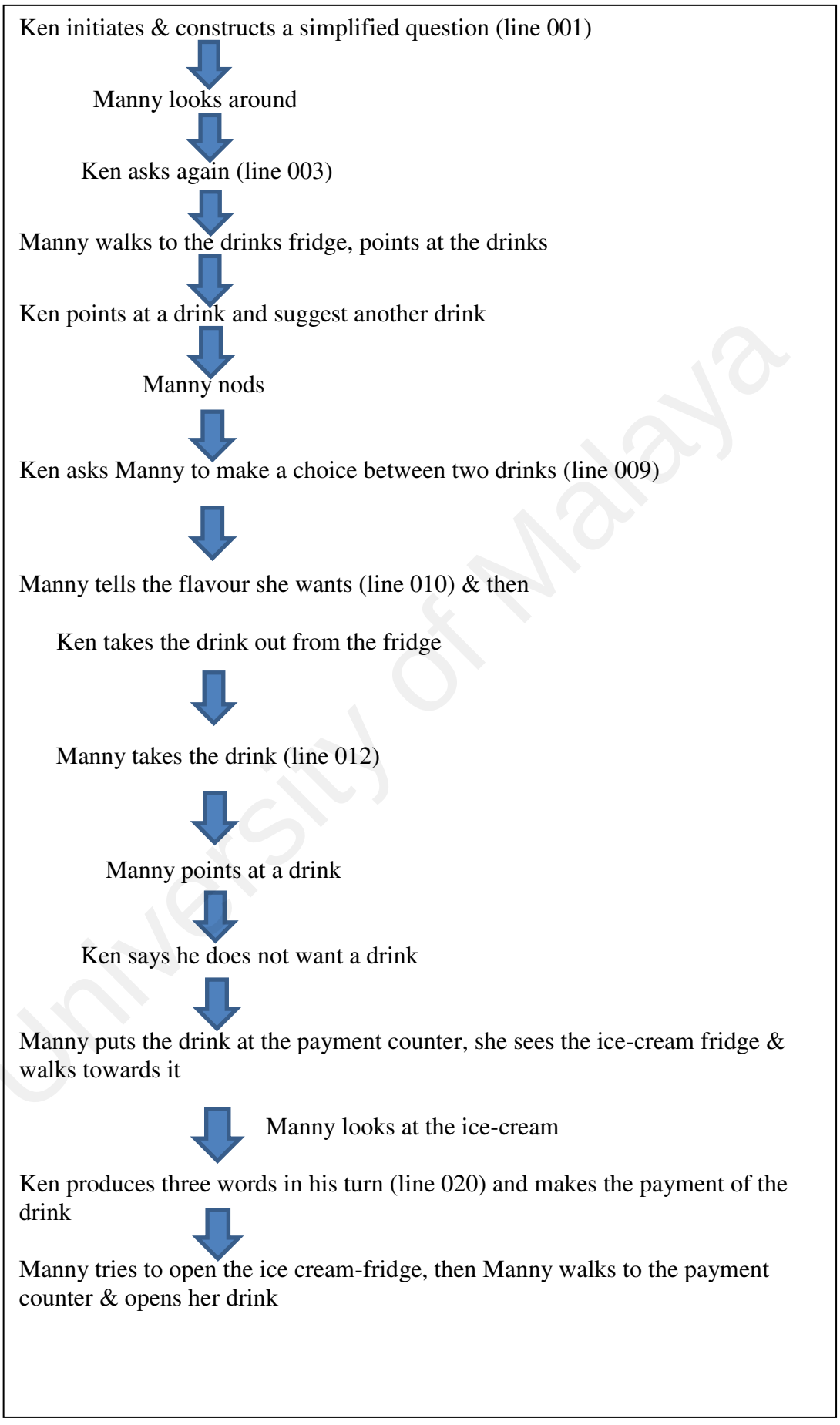
Manny says "*KEN*" in a louder volume and points at the 7-up drink in line 015. Here, Manny possibly wants to know if Ken wants to get a drink for himself. Ken appears to be understanding Manny's gestures of pointing at the 7-Up drink and he repeatedly says "*I don't want I don't want*" in line 016. Manny says one word in the next turn "*here*" in line 017 and takes the Mirinda Orange to the payment counter. Manny says "*a::*" in the same line when she sees the ice-cream fridge and walks towards the ice-cream fridge. Ken says "*hm::*" in line 018, walks towards the ice-cream fridge, and looks at the ice-cream. Ken then walks back to the payment counter. Manny uses Malaysian English "*WAIT LA*" in a louder volume in line 019, a similar pattern used by Manny in Extract 5 during play in the outside environment. Manny looks at the ice-cream. Ken uses simplified construction in his response "*later we buy*" and makes the payment of the drink at the counter in line 020. Manny tries to open the ice-cream fridge in line 021. Manny says "*ah*" in line 022 possibly expressing her dissatisfaction. In the 1.0-second pause that follows, Manny walks to the payment counter, holds the drink, twists and turns the bottle cap.

The extract shows that the elder brother is seen giving time and space to Manny to make a choice of what she wants to buy from the grocery store. However, Manny is seen unsure when making a choice between two drinks but she is able to make a choice of the flavour that she wants. Manny is also seen concerned for her elder brother when she points at a drink possibly wanting to know if Ken wants to get a drink for himself.

Manny is also seen to be aware of the payment that needs to be done for the drink and this can be seen when she leaves the drink on the payment counter table. Manny also shifts her interest when she sees the ice-cream fridge. However, the sequence closes when Ken makes a payment.

The sequence pattern below shows the interactions of the children whereby Ken assists Manny in making a choice of a soft drink. The interaction pattern shows that Ken gives suggestions to Manny. Ken uses simple and short utterances, he says this "*this one or this one*" During the turn exchange, Manny appears to be co-operating with the elder sibling. Manny does not pick any drink that Ken suggested but she mentions the flavour she wants repeatedly "*orange*" Manny's attention shifts to the ice-cream fridge. Ken constructs his turn with only three words "*later we buy*" referring to the ice-cream.

Diagram 12.



The extracts discussed (11 – 12) show affiliation and no display of aggression. Galina helps and gives suggestions to Manny to select a dress. However, Manny is unable to make a choice on her own as seen in Extract 11. Interestingly, Manny is able to decide the flavour of the drink that she wants in her interaction with her older brother, Ken as seen in Extract 12.

The interaction patterns in other routine activities outside the home environment show that Manny responds positively to a question directed to her by her siblings. Manny mentions what she wants in the interactions. Manny regularly uses Malaysian English in her turn construction in and outside the home environment. Ken and Galina employ questions to initiate and sustain the interaction with Manny.

4.3 Concluding remarks

The analysis of conversation of an 8-year-old Malaysian female child with DD provides novel insights into how the child with DD functions in her natural environment. The data reveals how Manny constructs her turns as well as takes her turns in sequence during interaction with her siblings.

The conflict that occurs during routine play in the home environment often leads to aggression displayed by Manny towards her siblings. The siblings also display disagreement with Manny. Manny insists her siblings to follow her way otherwise she threatens not to participate in the play. Manny uses simplified turns construction in the interactions. Due to Manny's lack of language resources, Manny is possibly seen displaying aggressive behaviour towards her siblings.

Manny also exhibits aggression outside the home environment when her siblings do not comply with her demands. Manny behaves in a physically threatening manner towards her siblings. Manny displays physical force, causing harm to Galina. Ken and Galina appear to be disaffiliating with Manny during the interactions. The aggressive behaviour Manny displays towards her siblings shows that aggression is a recurrent pattern of behaviour in the interactions.

The data analysis also demonstrates that Manny collaborates with her siblings and others present in the other routine activities in and outside the home environment. There is also no display of aggression during these interactions. At home, Manny is seen independently carrying out a routine task and completing it. Manny obeys her mother and follows her siblings' instruction in the interaction.

Ken and Galina sustain the interaction with Manny in the other routine activities outside the home environment. Ken and Galina also appears to be giving Manny time

and space to construct her turns throughout the interaction. Evidently, the observation shows that the siblings give suggestions to help Manny make a choice. Manny and her siblings are seen in affiliation with each other. The data shows no display of conflict and aggressive behaviour in the interactions.

One of the note-worthy findings of the present study is that Manny's siblings assisted and facilitated Manny during interactions. Despite the aggressive behaviour and physical aggression displayed by Manny towards her siblings, Manny's siblings offer her guidance and help throughout the interactions.

The next chapter will discuss the summary of the findings of the present study, which will be followed by the implications of the findings. It will also discuss the limitations of the present study and possible future research.

CHAPTER 5: CONCLUSION AND IMPLICATIONS

5.0 Introduction

This chapter will begin with the summary of the findings of the analysis of interactions between the child with DD and her siblings. It will be followed by the implications of these findings. The ensuing section will deal with the limitations of the present study. The concluding section will discuss about the possible future research in the area of interactions of children with DD in Malaysia.

5.1 Summary of findings

The summary of the findings will be presented by answering each of the research question presented in Chapter 1.

5.1.1 Recurring patterns of behaviour during play with siblings at home and outside their home

Research Question 1

What do the recurrent patterns of behaviour during play time reveal about interactions involving the child with DD and her siblings in the following environment?

a) home

b) outside

The analysis of interactions reveals that Manny's siblings often initiates the interaction during play in the home environment. The findings of the present study aligns with Knott, Lewis and Williams (2007) study that noted roles asymmetries of

sibling of the disabled children as "leaders" of the interaction. In the current study, Ken holds a dominant position, as a "leader" during the interaction. He decides and sets the rules of the game during the interaction. However, Manny displays disagreement with her elder brother. Manny also attempts to withdraw from the interaction and this is a recurrent pattern in the interactions with her siblings. The elder sibling acts in a manner that is seen "disaffiliating" towards the child with DD. The "trouble" arises in the interaction when Manny disagrees and challenges Ken's decision. Consequently, the conflict that arises from the "trouble" escalates as Manny resorts to physical aggression.

Interestingly, Manny displays her ability to construct herself as a separate person during the interaction with her siblings. This finding agrees with Geils and Knoetze (2008) study that highlighted the "positioning" of a child with autism. These researchers stated that the child with autism actively positions himself during interactions with his family members. Similarly, Manny uses the personal pronoun "*I*" to actively position herself within the interaction.

Manny sometimes initiates interaction during play in the home environment. Manny breaks the rule of the game and displays aggressive behaviour towards her sibling, Galina. The findings of the present study concur with Dominick et al. (2007) study that evidently indicated children with DD display aggression (such as hitting and kicking), uncooperative behaviour and withdrawal behaviour. These researchers concludes that children with DD's aggression were most often targeted towards their siblings (75%) at home. Manny displays aggression when her siblings do not comply with her demands. Manny's disagreement with her siblings during play time often led to conflict that progresses into aggressive behaviour and physical aggression. From the data analysis, it is also observed that Manny threatens to harm Galina. Manny picks up a tool and swings it at Galina. Hubbard et al. (2002) conclude that children who display reactive aggression are engaged in rough behaviours. Similarly, the data analysis of this study

shows the children engaging in a play behaviour that turns into a rough behaviour whereby Manny displays her temper tantrums and reactive aggression towards her siblings.

Researchers have also noted that children with DD usually offered no response to a comment or question (Capps, Kehres, & Sigman, 1998). In contrary, the findings of the present study show that Manny appears to be responding positively to comments and questions. Manny's siblings are also seen constructing simple and short utterances in the interactions. Literature has shown that older siblings of children with Down Syndrome usually displays a pattern of "Big Brothering" whereby the older siblings protect the child with Down Syndrome (Harry, Day & Quist, 1998). However, the findings of the present study show that Ken is seen possibly "bullying" Galina during play. Interestingly, the turns in the sequence of interaction show that Manny, the child with DD displays protective behaviour towards Galina. Manny appears to take on the role of an elder sibling.

Manny often initiates the interaction with her siblings outside the home environment. However, previous studies have found that children with DD initiates less often but imitates their siblings more often (Abramovitch, Stanhope, Pepler, & Corter, 1987; Dallas, Stevenson & McGurk, 1993). The finding from this study is noteworthy, as Manny appears to be actively initiating the play and inviting her elder sibling to participate in the game. Notably, the younger sibling imitates how Manny usually counts numbers but this could possibly be a natural phenomenon involving children. The observation also shows that Manny constructs her responses in a simplified manner. Manny produces simplified turns with two to three words, she uses Malaysian English, a mix of English and Punjabi and repetition when interacting with her siblings. The data analysis also shows evidence of aggression as a recurrent pattern of behaviour in the interactions outside the home environment. Manny behaves in a physically threatening

manner towards Galina and the sequence of interaction ends with Galina being physically hurt.

Previous studies have also highlighted recurrent behaviours of a child with autism such as high piercing creaking sound or screaming and a pointing-like gesture (Abendroth & Damico, 2009; Damico & Nelson, 2005). Similarly, in this case study, Manny raises her voice to display her unhappiness or dissatisfaction when her demands are not fulfilled. This is a recurrent pattern of behaviour in Manny's interaction. Manny's reaction seems irrational but she is actively participating in turn-taking sequences throughout these interactions. Manny's reaction can be possibly seen as a "problematic behaviour" but it is not seen causing a communicative breakdown as it accomplishes specific outcomes during the interaction. Manny expresses verbal frustrations and displays unsatisfactory feelings when her siblings ignore her request.

The data analysis of the interaction in and outside the home environment demonstrates how Manny and her siblings constructs their turn in sequences and their responses during a particular play behaviour. The aggressive behaviour and physical aggression displayed by Manny towards her siblings appears to be a recurrent pattern of behaviour during play.

5.1.2 Other routine activities

Research Question 2

What do other routine activities in and outside the home environment reveal about interactions involving the child with DD?

The interaction patterns in other routine activities in and outside the home environment evidently shows no conflict and no display of aggression between Manny and her siblings.

Manny carries out and completes tasks assigned to her during other routine activities in the home environment. Manny conforms to expectations in the presence of her siblings, visiting cousin and other relatives. The finding of the present study is in agreement with Bowen's (2014) study. The researcher indicated that children with DD experience phonological processing deficits when producing commonly used words. The observation of the present study evidently shows when Manny produces the word "*water*" in Punjabi, she reorders the sequence of phonemes.

Manny does not display aggressive behaviour or physical aggression towards her siblings and other relatives. Manny independently completes the task despite being interrupted by her visiting cousin. During the on-going activity, Manny displays displeasure and produces verbal frustration due to the interruption. Despite Manny's dissatisfaction, she manages to stay focus on the activity and completes the task.

It is also observed that Manny uses actions and gestures to explain herself during the interaction. The findings of the present case study agree with Damico and Nelson's (2005) study that suggested children with DD often uses gestures as a compensatory strategy to communicate with others. Manny often uses gestures such as pointing her index finger to make a request.

The data analysis reveals that Manny's siblings often initiates the interaction during other routine activities outside the home environment. Ken and Galina facilitate Manny throughout the interactions. Ken and Galina also provide opportunities, adequate time and space for Manny to construct her responses and make choices of her own.

Manny's siblings employ interactive strategies such as code-switching, questioning, repetition and simplification to initiate and sustain the interaction with Manny. The simplification is also a recurrent pattern used by Manny and her siblings in the interaction. Previous studies have concluded that code-switching is commonly used and it can be seen as a "functional strategy" in the interactions of the local Malaysian population (Cheng, 2003; Rajadurai, 2004). Likewise, the findings of the present study show Ken and Galina using code-switching so that Manny is able to comprehend the context of interaction. This strategy also helps Manny to construct her next turn response in the interactions. Despite the aggressive behaviour and threatening to harm behaviour displayed by Manny in the interactions during play, Manny's siblings are seen most of the time around her and they support Manny throughout the interactions.

Manny, Ken and Galina display affiliation and collaboration in and outside the home environment during other routine activities. There is no display of aggressive behaviour and problematic behaviour by Manny.

The analysis of interactions between Manny and her siblings provides novel insights into the interaction of Manny and her siblings. The data analysis reveals Manny's conversational abilities and recurring patterns of behaviour and interaction in and outside the home environment during play and other routine activities.

5.2 Implications of the findings

Several implications for practice can be derived from the present study. The first implication that can be drawn from the present study is that play behaviour in the home environment and outside environment should be supervised by parents. Parents supervision is vital as they can provide guidance for Manny and her siblings during play behaviour. Intervention programs and training on parenting may also help parents prevent sibling conflicts and aggression and improve sibling interactions.

Secondly, sibling intervention can help siblings of children with DD to learn and understand the condition and issues of children with DD. Generally, these interventions can successfully intervene or prevent siblings conflict, reduce sibling aggression and improve their interactions. As sibling age, they are likely to take on more responsibilities for their siblings with DD. Hence, supporting parents and siblings, across the lifespan, may help them provide appropriate care for their child or sibling with DD.

The present study has shown how a particular Malaysian female child with DD functions and interacts with her siblings in the natural environment at home and outside the home during play and other routine activities. In this case study, the interaction between Manny and her siblings may generate new insights into issues related to DD. Besides, this study may also help to establish a database for understanding the conditions of children with a similar diagnosis. The findings of the present study have demonstrated Manny's behaviour and responses in turn-taking sequences as well as the consequences when her siblings do not comply with her demands. The findings from interaction patterns of this Malaysian child with DD and her siblings may be potentially generalizable to a broader population, subject to future similar studies involving other children with DD. The findings of the present study hold much potential as it could

inform clinical and professional practices in interactions involving children with DD. Suggestions provided by professional practices about effective communicative strategies can be also made for parents, siblings and home visitors to assist and facilitate interactions with these children.

The qualitative nature of the present study preserves the richness of the data. The present single-case study enables the researcher to see recurring patterns in the interaction of the child with DD and her siblings. This study has also shown the significance of CA in providing an in-depth understanding about how the child with DD functions in her natural environment and her talk organized in turn-taking sequences in the interactions with her siblings. With the use of CA, it is possible to identify and analyse Manny's behaviour, communication abilities and recurring patterns in her interaction with her siblings. It is hoped that the present study would be able to provide some insights into the interactions of children with DD and her siblings. Therefore, this study could be a milestone in the research area of interactions of children with DD in Malaysia

5.3 Limitations

The present study is a single-case study, focused on a Malaysian female child with DD. Hence, there are limitations such as a single-case study will not provide generalizable findings. Nonetheless, the notion of "thick description" permits a thorough and in-depth analysis of a complex case (Geertz, 1973). Bennett and Elman (2010) also noted the significance of single-case studies that are "crucial cases and least-likely". These one of a kind cases do not fit with prior theoretical expectations.

The recording of the interactions between the child with DD and her siblings also had to be stopped due to the aggressive behaviour and in view of the physical harm to the children. The safety of the children was of primary importance in this study.

5.4 Suggestions for future research

The present study provides some avenues for future research. Firstly, there is a need for more research in the area of interactions of children with DD in Malaysia. Researchers can also study a larger sample size of children with DD.

For future research, employing conversation analysis could provide a comprehensive mean for investigating the interactions of children DD, which enables researchers to scrutinize the turn-by-turn construction of the interaction. Research could possibly focus on comparing sibling dyads where one child has DD and the other child is a TDC using a larger sample size to represent the national demographics. Comparisons between sibling dyads can also contribute to designing the procedures for sibling-mediated interventions.

Researchers could also study the interactions of children with DD in the outside environment specifically in schools. The study of interactions of children with DD in school may provide insights into their behaviour and conversational abilities as well as peer relationships.

Another avenue for research, with regards to this particular child with DD, is that continued research can be carried out in a longitudinal design to monitor the changes in her interaction and behaviour with her siblings and family members.

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