Chapter 14
Collaborative Sibling Play: Forming a Cohesive Collective While Picking Mangoes

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14.1 Introduction

Historically, children of varying ages have played together and worked closely with family members, often leading to learning a trade (Lave and Wenger 1991). This togetherness led to children learning about cultural ways of doing and being, from people of all ages, including relatives, co-workers, siblings and their peers (Rogoff 1990). In these situations, teaching and learning in context formed an implicit part of social interaction. Family living arrangements have changed and today, living as an extended family is less common. The norm has shifted to living as a nuclear family potentially decreasing the availability of situations where everyday mixed age play occurs. However, when families move countries due to one or both parents' employment with a multinational company, the familiar social interactions that favour age based peer play, (known neighbours, invitations to social occasions) are not immediately available in the new host country. The provision for siblings playing together becomes a necessity. To gain greater insight into multiage sibling [peer] play in the family context, literature on sibling play is outlined briefly.

Research on contemporary play focuses on the value of play (Brooker 2002) and is situated with same age peers (Gray 2011) in early childhood centres (for example, Fleer 2011) or schools (Blatchford 1998). Although there is substantial research on same age peer play (Brooker 2002; Gray 2011; Fleer 2011), scarce information on collective sibling play situated in the family context was located. Yet, in the family context, siblings do spend substantial amounts of time together. Research on sibling play that does exist, reveals two main themes. These relate to adult intervention and co-constructed situated play (Garcia et al. 2000; Pruswell and Taylor 2013).

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Studies on sibling play are located in clinical settings and include the theme of adult intervention, to support newly formed blended families (Pruswell and Taylor 2013). Other studies address the destructive interaction between siblings, suggesting possible teacher and parent interventions (Garcia et al. 2000). Whether or not adults joined in the play depended upon their beliefs about play (Vandermass-Peeler et al. 2002). In a study on play by Parmar et al. (2014), mothers had varied intentions when interacting with their children. Some provided props for play while others directed their children towards rote learning (Parmar et al. 2014). Missing from the literature are studies on sibling interaction without adults entering the play or being in the vicinity of the play.

Other studies involved siblings playing together to construct situational play. These large scale quantitative studies were located from sources of developmental psychology research. Howe et al. (2005) reported that positive sibling relationships provide creation of shared meaning. Older siblings scaffold learning and social understanding for younger siblings. Studies found that imaginative play initiated by younger siblings was more successful when older siblings joined in (Palacios et al. 2016). Howe et al. (2014) studied sibling dyads in home settings to examine how imaginary play was co-constructed. The complexity of sibling play was highlighted, with varying themes, and creative object transformations noted (Howe et al. 2014). Farver (1993) found that Mexican siblings participated in nurturing mixed age play whereas American sibling play tended to be competitive and often discordant. Similarly, in this book, theorises peer play as a collaborative unit where initiatives and creative explorations are constructed in play.

Further, as the studies reviewed were based on quantitative methodologies with minimal theory, there is a need to use qualitative studies and include theory. Therefore, a cultural-historical approach is drawn upon for greater understanding of siblings' interactions and their use of sustained shared thinking (Siraj-Blatchford 2007) to solve a joint problem. Combing these studies, directs attention towards the research question: How do siblings in transition to a new country, play together and solve problems in their new environment?

14.2   Theoretical Perspective – A Child's Relation to the Environment

Vygotsky (1994) discusses the importance of understanding the relation between the child and their environment to better understand the process of child development. He makes the point that the child's environment does not change but the relation the child has with the environment changes as the child develops (Vygotsky 1994). The child's relation with their material and social world changes as the child's understanding of concepts progresses (Fleer 2011). Vygotsky (1994), argues that "the relationship which exists between the child and its environment at a given stage of development" (p. 339) is dependent on the child's understanding and

experiences of the environment. A theoretical example to explain this point is the way three siblings experience getting ready to move countries where each sibling experiences the transition differently. The youngest child becomes introverted and reports that he does not want to leave his friends and wants to stay in the house he knows. The middle child does not display any emotion at all and will not discuss the situation. The oldest child is excited at the prospect of moving countries and meeting new friends. Therefore, each of the children experiences the potential transition in different ways. "How a child becomes aware of, interprets, [and] emotionally relates to a certain event…determines the role and influence of the environment on the development of the child" (Vygotsky 1994, p. 341). The experience of the environment affords different understandings and possibilities for each child dependent upon their psychological development.

The reciprocity between the child and the environment is an important point to consider as children experience new environments while transitioning to live in a new country. Moving countries provides a different physical and social environment for the children to experience. It is the way each child experiences and understands the new setting that becomes key to learning and development. Vygotsky (1966) put forward that young children use imagination as a tool to creatively rework a situation and establish their own sense and meaning from real life experience. Collaboration, creativity and imagination are important tools for the way that children interact with and come to understand their environment (Vygotsky 2004). Extending this conception of collaboration, creativity and imagination, Siraj-Blatchford (2007) introduced the concept of sustained shared thinking.

14.2.1   Sustained Shared Thinking

The term sustained shared thinking is defined as 'when two or more individuals work together in an intellectual way to solve a problem, clarify a concept, evaluate an activity, or extend a narrative' (Siraj-Blatchford 2007, p. 18). Sustained shared thinking was noted as one of the most effective learning strategies in quality interactions between young children and adults (Howare et al. 2018; Siraj-Blatchford 2009). The concept is seen in more formal collaborations between an adult and child when teaching is intentional (Ridgway et al. 2015). Sustained shared thinking is a pedagogical tool used by adults that encourages socio-cultural sensitivity, knowledge of the child and engagement in challenging cognitive activities and discussions. These activities are directed towards supporting the child's needs, confident risk taking and autonomy in learning (Howare et al. 2018). More recently studies on the implementation of sustained shared thinking has made visible the need for educators to consider relational pedagogy and positive emotional engagement with young children (Howare et al. 2018). When children interact without adults present, they can and do sustain and share their thinking, and learn in culturally situated, emotionally sensitive ways together. However understandably, quality pedagogy is not conceptualised or intentional in their interactions. Therefore, missing from this

body of literature is the way siblings come together to experience their new environment and use a form of sustained and shared thinking to solve complex problems. For this reason, the concept of cohesive collective is now introduced.

14.2.2   *Cohesive Collective*

The term cohesive collective is situated in theories of learning and development (Vygotsky 1997) and combines the scholarship of Beal et al. (2003) and Siraj-Blatchford (2007). Group cohesion was found to be supported by strong social bonds, completion of tasks, general agreement and emotions (Beal et al. 2003; Forsyth 2010). In the current study, cohesion is extended by introducing the term cohesive collective, used to describe a small group of emotionally attuned siblings, who voluntarily experience solving a problem or completing a challenging and risky task together. Improvised collaboration, that is, the moment to moment spontaneous exchanges of trying different ways to solve a problem together is an integral aspect. The cohesive collective (a small group of children working together) draw on, sustain and share their thinking to solve a problem that one actor would not be able to solve or complete individually. Central to this theoretical conception is the way bodies come together through joint movement, which is combined with thought processes that are bound conceptually.

In this chapter, analysis is based on four siblings' social interaction as they explore their new Malaysian garden, and form a cohesive collective to successfully pick mangoes from a high branch. The mangoes that have fallen to the ground are covered with fire ants (*Camponotus saundersi*), other mangoes attached to the tree are positioned in the upper branches and too high for each child to reach. In the case example in this chapter, the siblings are met with complex problems, which are systematically solved. This study examines sibling's emotionally supportive, risky, joyful, sustained and shared thinking as they come together to solve problems in a new environment. In this case example, the children are sensitive towards each other's needs, are affectively engaged in discussions and movements that include risk taking and autonomy in learning.

14.3   Visual Methodology

To understand social interaction in context requires a naturalistic form of data gathering. Contemporary research using cultural-historical theory advocates the use of Visual Methodologies (Ridgway and Fleer 2015; Ridgway et al. 2015). Digital images and digital video filming are part of Visual Methodology and provide a rich form of data gathering. The dynamic data enables multiple replaying, recreating and reviewing of data as focus participants interact with their new physical and social environment. A greater understanding of the data occurs when small moments

gathered over time are iteratively analysed (Quiñones et al. 2017). The richness of Visual Methodologies provides chronology of interaction and an emergence of the sibling's imaginings, and collaborative, creative efforts to collect mangoes. This methodology allows the researcher to move away from static forms of data gathering (experimentation, note taking) which focus on development that has already occurred rather than on the process of development (Vygotsky 1997).

14.3.1   The Research Context

This chapter is part of a larger body of work (Adams 2014) that holistically examines families with young children moving countries and transitioning into life in a foreign country. The families move due to one or both parents working for a multinational company. The transfer between countries usually eventuates, as the employee is a highly skilled worker and is required to develop business opportunities in the receiving country.

14.3.2   The Family Context

The family had recently moved from Australia to Malaysia due to the father's role as a manager in a multinational company. The family consisted of mother, father and four siblings Alie (8.7 years) Hetti (7.1 years), Bill (5.3 years), and Steph (3.2 years) and a newly acquired puppy, Bess. The family had moved from a five acre property in Australia where they tended a large vegetable garden and had free range chickens. In Malaysia, the parents had chosen to live in a housing complex located 40 min from the capital city of Kuala Lumpur. The house was situated on a small block of land that had tropical fruit trees such as mangoes, rambutan and lychee in the garden. The tropical fruit species were new to the siblings. The siblings were familiar with free-range gathering and eating from their vegetable patch in Australia. However, in their Malaysian garden, the height of the fruit in the trees and presence of red fire ants created a challenge for the siblings as they wanted to pick and eat the fruit.

14.3.3   Analysis

A dynamic analysis of the data followed a three stages approach (Hedegaard et al. 2008). The data analysis began with a *common sense* interpretation. The researcher completed a general analysis of individual and collective sibling interaction patterns across the whole data set of the focus family. The next stage was *situated practice* interpretation where analysis linked data (recorded interviews and digital video

recordings) sets from different research sites (home, school, family outings). Smaller video clips were made. Finally, thematic interpretation was introduced to further analyse the video clips. Themes were searched for in relation to sibling interactions with and without parents and peers.

When analysing at the thematic level, the concept of cohesive collective enabled the researcher to concentrate on the children's iterative processes of problem solving. The siblings attempted to gather and pick mangoes individually then gravitated together through verbal and non-verbal communications, and joint movements. The process involved repeated review of the digital video data and the capture of screenshots of individual and collective movements which enabled the researcher to analyse the individual and group perspective (Quiñones et al. 2017) and form a visual narrative (Ridgway et al. 2015) for sequential analysis. The way that the siblings formed and worked within the cohesive collective is presented.

14.3.4   Interview with the Mother

The mother explained that when the family were residing in Australia, their garden was large and much of the family's leisure time was spent tending and growing fruit and vegetables. The children were included in the process of growing vegetables and were 'usually in the garden with friends'. A favourite pastime of the siblings (and when peers were invited to play) was to pick and eat easily accessible fruit and vegetables. The siblings had knowledge of when and how to pick fruit and vegetables from their garden situated in Australia. The mother explained that she had discussed with the children about the right time to pick fruit and vegetables. The mother commented that Bill was, 'obsessed with picking and eating fresh vegetables and fruit' when in Australia and was 'very excited when he realised the trees were fruit trees in the Malaysian garden'.

According to the mother, in Australia, the family had a large social circle and a busy social life as they were involved with regular school activities (fetes, sporting events), their neighbours (all had children of similar ages) and their extended family lived close by. The mother explained it was different to living in Malaysia. The family did not know anyone or have social supports organised and were beginning to initiate social connections with neighbours and families from the school that the older children attended. The mother commented that living in Malaysia was:

> a very different life [compared to Australia]. The children are playing more together than ever before as the older ones have no friends to play with. They did not have opportunities to play together just the four of them so much in Australia as we were always so social and had lots of other children around. Here they are getting to see a different side of each other and at the moment they are playing really well with each other.

The following section is a visual narrative of a play example where the siblings are playing together in the garden. There were many instances noted when the four children were together and played for sustained periods of time. These included,

helping Steph to ride a bicycle without training wheels, making their own lunches to take to school and playing outside games. The mango case example was selected as it is representative of the way the children collectively sustained and shared their thinking over an extended period of time.

14.4   Gathering Mangoes – Case Study Documentation

The researcher was invited to attend the house at 6.30 am as the family rose early.

The siblings had eaten breakfast and were dressed for school (except for Steph). Alie collected a plastic bag, Hettie picked up Bess the puppy, and together with Bill they ran outside. The siblings walked around and looked at the ground. Hetti did not put Bess on the ground as the dog was yet to have its first inoculations. Alie and Bill selected mangoes from the ground only to discard them quickly. The mangoes were covered in fire ants. One mango, which was green and had no ants, was selected and placed in the bag. Alie noticed mangoes on the tree and moved to try and reach one that was attached to a low branch. Alie stood on her toes and reached up but could not touch the mango, so attempted to jump and pick the mango but was not successful (Fig. 14.1).

Bill observed Alie jumping repeatedly, and remarked that Alie needed to grab the branch and pull it down. Alie continued jumping and tried to grab the branch at full stretch while jumping, but she could not reach the mango (Fig. 14.1). Bill continued to look for mangoes on the ground and declared they were all covered in fire ants. Alie called Bill over to where she was standing, bent down and wrapped her arms around Bill's knees (Fig. 14.2) and attempted to lift him off the ground.

Bill misunderstood and tried to climb onto Alie's shoulders. Laughing she stated, 'No Bill, nnnno! No not that!' Hettie continued to hold Bess and simultaneously

Fig. 14.1   Individual try

Fig. 14.2 First try to collectively extend height

Fig. 14.3 Second attempt to collectively extend height

Fig. 14.4 First collective try to collect mango

watch Alie try and lift Bill. Steph continued walking around looking for mangoes (Fig. 14.2).

On the second attempt to pick up Bill, (Fig. 14.3) Alie placed her arms around his thighs, lifted Bill then stumbled backwards. Bill squarked and held tightly onto Alie's head. Alie walked 'blind' towards the mango hanging from the branch.

Bill positioned his arms around Alie's head. He reached for the mango making grunting noises then looked down towards Alie and stated, 'More over here more over', and pointed in the direction of where to move (Fig. 14.4). Bill laughed and stated, 'More over, more over'. Alie stumbled and Bill grabbed Alie's neck,

everyone laughed. Alie placed Bill on the ground. Hettie said 'I can do it'. Alie jumped up and lunged towards the mango, but it remained out of reach. Bill tried to jump up and reach the mango while Alie moved to Hettie, and said, "I'll take her inside then you can have a go'. Alie took Bess inside. Hettie commented that Bill needed to bend his legs more to jump higher. Bill continued unsuccessfully jumping towards the mango. Steph observed Bill.

Hettie and Bill moved to stand directly under the mango. Hettie placed her arms around Bill's thighs and lifted him up.
Alie returned without the dog, 'You got it?'
Bill reached up with one hand. Hettie stumbled and Bill placed one hand around Hettie's neck to steady himself. Hettie moved her feet apart and stood on her toes. Bill reached up with one hand, and was able to touch the mango (Fig.14.5).

Bill attempted to grab the mango a second time, Alie yelled, 'Use two hands. Pull it down'. Bill completed Alie's request and pulled the mango down and lifted himself up at the same time. The mango dislodged from the branch. He displayed the mango for Alie who yelled, 'YES!' All the siblings laughed (Fig. 14.6).

Alie ran over and jumped up to try and grab another mango. Bill handed the mango to Alie who stated, 'Good one!' Alie placed the mango in the bag. Bill told Hettie to lift Alie. Hettie reported that she had nearly lost her balance and had to

Fig. 14.5 Observer becomes lifter

Fig. 14.6 Success

Fig. 14.7 Swapping positions and taking turns

move her feet apart and stand on her toes to obtain more height. Alie demanded to be lifted by Hettie.

Hettie picked up Alie. Alie reached up easily and grabbed a mango. She tried to pull one down but it would not dislodge from the tree.

Alie had difficulty pulling the mango from the branch and said to Hettie, 'Let go of me, let go of me' and was still holding the mango. Hettie released her grip on Alie who continued to hold the mango, which was dragged from the branch (Fig. 14.7).

The Mother entered the scene and the siblings were directed inside to get ready for school.

There were many small scenarios taking place in this complex play. However, the main aim is to discuss the way the children were able to collectively problem solve to successfully pick mangoes.

14.5   Discussion

Through analysis of the case study, there are two discussion points. First, the new environment affords new possibilities (Adams 2014). Not having same aged peers to play with provided more time for the siblings to play together as the children were going through a stage of 'getting on really well' (mother's interview). In the new environment, the siblings repeated patterns of known activities such as gathering fruit from trees. The siblings tried individual and collective attempts to collect mangoes. Although the patterns were repeated in each subsequent attempt there were small moments of change due to directions offered by the siblings. Second, through working collectively, the siblings merged as one physically and conceptually to overcome and solve their shared problem. Working together as a *cohesive collective*, the siblings together became the more capable other and achieved picking the mangoes, a task that they could not complete individually.

14.5.1   Changing Environment Affords Collaborative Possibilities – Emotionally Attuned Siblings

When families with young children move countries, their physical, social and cultural environment changes due to the international move (Adams 2014). This is in contrast to Vygotsky (1994) who suggests that the child's environment does not change but the relation the child has with the environment does change as the child develops (Vygotsky 1994). In the current study, both the child's environment and their relation with the environment changes. A new country affords new learning and developmental opportunities in a changed environment. As discussed during the mother's interview, the family experienced a new and different physical and social environment in Malaysia compared to that of Australia. In Australia, the family were familiar with their physical and social context, for example, the climate was hot and dry and the siblings participated in regular and predictable social engagements with same aged peers, neighbours and extended family. Whereas in Malaysia, the physical environment was tropical with no known neighbours, school friends or family living close by. The physical environment changed for the siblings as did the social relations within the environment, thereby affording new and different possibilities. The Malaysian environment created new conditions for exploration, opening processes for different types of relations, learning and development with each other.

The siblings had strong social bonds and were provided with sustained opportunities to play together before and after school and on the weekends. According to the mother, the children played cohesively due to the new environment away from family and neighbours in Australia, commenting, 'they just have to get on as there is no one else for them to play with at the moment'. The time the children spent together in a new environment without known social partners afforded new possibilities for the siblings to play and learn from and with each other. Initially, in the first few weeks of the family residing in Malaysia, the frequency of positive relational interactions increased between the children (mother's interview). In the case example provided, the siblings were emotionally attuned to each other (laughed together; were comfortable lifting each other's bodies; helped each other join in). The siblings seemed to reproduced established leisure time and play patterns in Malaysia that they had participated in with peers when living in Australia (picking fruit). One such example is the way the siblings work together to collect mangoes.

14.5.2   Dynamic Flow of Individual Attempts to Collect Mangoes – Sustained and Shared Thinking

Although the sibling's move between individual and collective attempts to gather the mangoes, the individual attempts are discussed first. Initially the children seek mangoes from the ground independently. However, the presence of fire ants on the

mangoes resulted in the need for a different way to collect the mangoes (the children did not want a painful bite from the fire ants). Alie positioned herself near the lowest hanging mango and repeatedly jumped reaching for the mango (Fig. 14.1). It is inferred that she imagines it is possible to pick the mango from the branch, as she keeps trying to jump towards the mango. Bill observed Alie jumping and suggested that she was close to reaching the branch and needed to pull the branch down (Fig. 14.1). Alie changed her focus and attempted to reach a low hanging branch. It is inferred that the siblings observed, considered and supported each other's actions (Figs. 14.2 and 14.3), sustaining and sharing their thinking. Through offering suggestions on different ways to pick the mango (Bill suggested to Alie that she grab the branch and pull it down), the sibling's agreement was noted as they accepted the advice and implemented the changes. Showing that they supported each other in a nurturing, caring, joyful manner (laughter; Heti watching Sarah intently). Directing attention to Forsyth (2010) who argued that in the formation of a cohesive group there needs to be positive emotions and general agreement.

Observation and suggested ways to change the process to pick the mango contributed to the sibling's multiple individual attempts to reach the mango in the tree. Steph and Hettie (still holding the dog) stood and observed their siblings intently (Figs. 14.2 and 14.3). Observation is deemed an important way of learning. Gray (2011) points out that learning occurs implicitly in most traditional societies where children are immersed in the culture and practice skills with some verbal instruction by more capable others. In these societies, children tend to learn 'just by observation' (Gray 2011, p. 510). Vygotsky (2004) takes this further and suggests that observation and perception are important for children's learning and development. As Alie and Bill attempted individual jumps, they observe each other and in each moment according to suggestions by another sibling, changed their actions slightly to try and get closer to picking a mango. This was in contrast to Howe et al. (2005) who reported that older siblings scaffold learning for younger siblings. In this example, the siblings guide each other (Hettie, 'Bend your legs when you jump Bill') share emotions (Fig. 14.1) and learning. Different to Howe et al. (2005) in this example, the older and younger siblings contribute equally to solving the problem and all suggested feasible ways to change actions to potentially reach the mango. There was agreement between the older and younger siblings (Alie took Bess inside so that Hettie could have a turn lifting Ben). The siblings worked collectively to solve the problem of gathering mangoes from a high branch in the tree.

Bill imitated Alie's jumping actions (Fig. 14.5) and unlike Alie, changed position, bent down low and seemed to launch himself into the jump as instructed by Hettie. Imitation is more than mindless copying, instead it is a way for a child to creatively rework the situation (Vygotsky 2004). Although each jump was unsuccessful, it was also different (Alie initiated a straight legged jump, Bill bent low and launched himself). It seemed that through the children's jumps and moments of feedback, the siblings thought processes were bound conceptually by their sustained and shared thinking and imagined possibilities of dislodging the mango from the tree. Vygotsky (2004) suggests that imagination supports individuals to think about future experiences. Although the jumps are individual activities, the three eldest

siblings continued to comment on ways to change each other's jumping to increase the height ('bend your legs', 'get under the mango'). The children came together voluntarily with a collective idea (picking mangoes) and attempted to reach their goal by creating new and different ways to dislodge the mango from the tree at first individually and then collectively. It is the sustained and familial social relations that support each child's actions and make it possible for the siblings to continue in their quest of collecting mangoes by working cohesively.

14.5.3 Dynamic Collective Attempts – Improvised Collaboration

Culture is embedded within the process of child development, which according to Vygotsky (1997) occurs first socially, between two individuals then psychologically as the individual's conscious thought develops. The siblings worked together creatively, and explored various ways to pick the mangoes individually and collectively. Alie initiated lifting Bill (Fig. 14.2) without verbally communicating her intent. Yet, Alie and Bill seemed to have the same conceptual understanding. Bill would act as an extension to Alie's body to pick the mango. In this instance, the siblings tried to become one and extend their height. However, the siblings needed to move through the process of successive attempts to be able to fulfil their goal (Figs. 14.2 and 14.3). Bill tried to climb onto Alie's shoulders, not fully understanding that Alie's intention was to lift him by the legs. Alie was not strong enough to stand once Bill was on her shoulders and laughed then tried a different way of lifting Bill (Fig. 14.3). The siblings extended their shared intentions as together, they tried to increase their height. Although the siblings participated in a social act together, their initial understanding did not align (Bill climbed onto Alie's shoulders).

Through the improvised collaboration, Alie took two further attempts to pick Bill up and stumbled to be positioned under the mango. Bill seemed heavy and not pliable with his torso positioned at Alie's eye height. Bill's arms were placed around Alie's head obscuring her vision as he held tight (Fig. 14.4). Bill's combined physical gestures and verbal utterances to direct Alie towards the mango were not adhered to. This was due to the generalisations (Vygotsky 1987) Bill used in his speech "More over, here (*points in the direction of the mango*), more over". Vygotsky (1994) comments that speech and actions are fundamentally tied together as young children develop. In the process of development, word meanings are generalised. The generalised way that Bill used words and actions to convey where he wanted Alie to move, hindered their progress. It was possible that Bill thought Alie could see the same thing as he could, yet he was obscuring Alie's vision. In these instances, reality and generalisations stood in the way of possibilities and understandings. Metacommunication is required so participants can successfully share the experience and coordinate actions in situations as to who, what and how it will occur (Winther-Lindqvist 2013).

14.5.4 Collective Efforts – Bodies and Thought Processes Bound Conceptually

The siblings worked together through a collective effort, suggesting changes in actions and physically supporting each other by lifting and caring for the puppy. Hettie had been observing Alie's attempt at lifting Bill to pick the mango. Hettie suggested the she could lift Bill in the next attempt (Fig. 14.5). Alie offered to take the dog inside, freeing Hettie to lift Bill. Similar to the young children in Rogoff's (1990) study, it is inferred that Hettie had learnt from her observations and attempted a slightly different approach. Standing directly under the mango, Hettie moved her feet apart then lifted Bill whose gaze was directed towards the mango. Bill was able to reach and touch the mango with one hand. In this situation, Hettie had imitated Alie but had creatively reworked the situation in various ways (positioning under the mango, lifting Bill by the thighs) and successfully lifted Bill who was able to pick the mango.

After the event, Hettie commented that she had nearly lost her balance and had to widen her stance and stand on her toes to make sure Bill could reach the mango. Verbalising knowledge highlighted the fact that Hettie had a conscious awareness of balance and how to stabilise herself while lifting Bill. During the time that Hettie was holding the dog and observing, it seemed Hettie had developed conceptual awareness to improve on Alie's attempt to lift Bill. Although Hettie seemed to plan, in contrast, Bill's movements were directed by Alie (Fig. 14.6). First, Bill reached up with one hand and was directed by Alie to use two hands. However, it seemed he was not strong enough to dislodge the mango, so he used two hands to pull himself up, and at the same time, drag the mango down. Finally, the mango was dislodged from the tree. The collective challenging problem was solved (Fig. 14.6). The siblings acted as a cohesive collective and integrated learning from observation, joint movement and conceptual understanding. The siblings merged as one physically, conceptually and cognitively to solve a joint problem. However, it went beyond this as through using their bodies as one, and forming a cohesive collective, the siblings became the more capable other. The successful action was repeated with Hettie lifting Alie (Fig. 14.7). Through working together as a cohesive collective, the children became the more capable other.

14.6 Conclusion

This study contributes to a larger body of research that examines changing family contexts when families with young children are moving countries (Adams 2014). Specifically, in this chapter, the focus has been to examine the way siblings explored their new garden environment in Malaysia. The siblings came together to solve the problem of picking mangoes located high up on the branches of a tree. Similar to Howe and Bruno (2010) and Palacios et al. (2016), in the current case example

gathering mangoes was successful, not because it was directed by older children but because the siblings worked together in a similar way as expected from same aged peers. The siblings treated each other as equals, through the reciprocity of listening, heeding each other's advice and working together as a cohesive collective.

The concept of cohesive collective as a theoretical contribution, builds on the scholarship of (Vygotsky 1987, 1994), Siraj-Blatchford (2007, 2009), Beal et al. (2003) and Forsyth (2010). The siblings provided a glimpse of group cohesion initiated by strong bonds, emotions, and general agreement while working towards solving a problem. However, the understanding of group cohesion was extended through the synthesis of theory and data. The term cohesive collective was introduced. This is understood as being a small group of emotionally attuned peers (or siblings), voluntarily sustaining and sharing their thinking, experiencing solving of a problem that one actor would not be able to solve individually. Central to this new concept is improvised collaboration where bodies come together through joint movement, with thought processes bound conceptually through sustained and shared thinking.

Although there are many implications for this research, three are outlined here. First, the majority of research is on same age peers playing together (Blatchford 1998; Gray 2011; Fleer 2011) in schools or early childhood settings. More studies are required on multiage interactions in family settings as siblings interact socially. The way siblings interact as peers and extend their own and each other's learning through working as a cohesive collective is an under-researched area and one that requires attention. Second, there is research that discusses the important role that adults play in children's learning and development (Fleer 2015; Vygotsky 1987) and although studies acknowledge the importance of children learning together out of the adults gaze (Ridgway et al. 2015), which Hakkarainen refers to in Chap. 2. More studies are required on the way children work together to extend each other's learning. Finally, this small-scale study uses a Vygotskian lens to analyse siblings' social interaction while families with young children move country. More studies are required in this area to support understandings of the way siblings and peers work as a cohesive collective when in a new environment.

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