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Infant and peer relationships in curriculum

A thesis

submitted in fulfilment

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Abstract

The purpose of this thesis was to explore the relations between infants and their peers as they interacted intersubjectively with one another in an early childhood care and education environment and to investigate how the teacher was answerable through her engagement in these intersubjective events. Drawing upon a Bakhtinian methodological approach to research *utterance* was employed as my unit of analysis, providing a means to investigate the intersubjective interactions between infants and their peers in tandem with the teachers' engagement in these interactions as answerable acts.

This thesis builds on a previous pilot study which utilised dialogic methodology to investigate the nature of infant and teacher dialogue in an education and care context (White, Peter & Redder, 2015). The research that formed the basis for my subsequent analysis took place in a New Zealand education and care centre that catered for children less than two years of age. In the present study the same polyphonic video recording was used to capture infant and peer intersubjective interactions and the teacher's engagement within these events. A mixed methods research approach was employed to qualitatively and quantitatively analyse the video data.

The findings of this study suggest that infants are intersubjective agents in their relationships with peers and with teachers. Infants intentionally communicated with peers in lived relational experiences that were characterised by the *fleeting*, *elongated* or *connected* nature of their interactions. Mutual understanding, joint attention, attunement and the employment of synchronised language forms were features of infant — peer intersubjective experiences. In addition, the findings revealed the capacity of infants and peers to relate with one another in social interactions that promote 'dialogic spaces' through which intersubjective relationships are sought.

When teachers engaged in the infant — peer intersubjective relations they either *restrained* by 'shutting' down or *sustained* by 'opening up' the intersubjective experience for the peers. The teacher's body language was a feature of their engagement that contributed in a variety of ways to the infant — peer

intersubjective experience. Indeed how teachers engaged themselves in the interactions that were taking place between infants and their peers often determined the orientation of the teacher's body positioning. The findings suggest when teachers *restrained* infant — peer intersubjective dialogue, this form of engagement had the potential to alter how infants related to peers in subsequent interactions, highlighting the importance of sensitive, 'in tune' teacher engagement. Furthermore, the results highlight the pivotal role of the teacher as a 'connecting' feature within infant and peer intersubjective experiences, one who has the potential to 'open up' dialogic spaces for infants and their peer partners through engagement that is dialogic.

These findings taken together may have implications for policymakers, educators and teacher education by 'opening up' dialogic spaces through which infants are *seen* as intersubjective agents and dialogic partners.

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Chapter One

Introduction

The purpose of this thesis was to explore the intersubjective experience between infants in relationship with their peers in an early childhood care and education context and to further investigate how the teacher was answerable through her engagement in these intersubjective experiences. The sections that follow outline the background to the present study; introduce the rationales in relation to infants, peers, curriculum and teacher engagement; and conclude with an overview of the chapters of this thesis.

1.1 Background to the present study

The presence of infants in early childhood education settings is a relatively new phenomenon (Degotardi & Pearson, 2014; Selby & Bradley, 2003; Wittmer, 2008). Therefore, traditionally priority has been given to investigating the peer relations of older children rather than infants in an early childhood context (Fabes, Hanish & Martin, 2003). The lack of research studies investigating infants' relations with peers (Williams, Ontai & Mastergeorge, 2010) or infant's friendships with peers (Engdahl, 2012; Whaley & Rubenstein, 1994) may also be attributed to the methodology employed (Whaley & Rubenstein, 1994). According to Whaley and Rubenstein (1994) many researchers will endeavour to interview children in relation to their experiences and ideas but this poses a challenge when children are less than three years of age because of their limited linguistic skills.

I participated in two previous case studies as a postgraduate summer scholar cleaning, coding and co-analysing data that had previously been generated by my first supervisor to investigate the nature of infant — teacher dialogues. It very quickly became obvious to me during the process of analysing the data in relation to teachers and their dialogues with infants that these infants were also relating intersubjectively with their peers beyond the teacher — infant dyad. This was not surprising to me because as a teacher of infants I was already aware of the communication that takes place between infants as part of their everyday being with one another. In my role as a research scholar it was also evident, through this

early analysis, that the teachers were not remote from these relationships either, and seemed to play an important role in the infant — peer dialogic exchange. Thus, I sought and received ethical approval to undertake research using the same data but, this time, to explore the relationships between infants and peers. Consequently, this thesis builds on the work from the previous case studies which investigated the dialogic nature of dialogue between infants and teachers in an early childhood care and education context (White, et al., 2015).

By drawing upon a Bakhtinian dialogic methodology a polyphonic video approach (White, 2009a) was also employed for this study, that had been used in the previous case studies (White, et al., 2015; White, Redder, Peter, 2013; White, Redder, Peter, in press). When a polyphonic video method is employed the video footage of the same event is time synchronised from four different perspectives: infant; peer; teacher; and researcher. This enabled the visual fields of all participants to be captured in the one moment in time as seen from each participant's perspective. Consequently, the language of the infants, peers and teachers as it was spoken through the body, in the form of movement, orientation, positioning, sounds, expressions, gaze and touch amongst other forms was captured on screen. In addition, a Bakhtinian dialogic methodology allowed analysis of infant — peer dialogic exchanges and beyond to include the teacher's engagement within these events as answerable acts, through the employment of *utterance* as the unit of analysis.

1.2 Why infants in the curriculum?

Most of the literature refers to infancy as the period from birth to eighteen months (see for example Sumsion & Goodfellow, 2012; and Carroll-Lind & Angus, 2011). This period is also the age category for infants that is stated in the New Zealand early childhood curriculum *Te Whāriki*, (Ministry of Education, 1996). Therefore for the purposes of this literature review infants are children aged between birth and 18 months.

The positioning of infants within early childhood curriculum frameworks is a fairly recent development. Prior to 1996 and the establishment of The New Zealand early childhood education curriculum *Te Whāriki*, infants were not included within curricula for teaching and learning nationally or internationally

(White & Mika, 2013). However, White and Mika (2013) explain since the introduction of *Te Whāriki* the inclusion of infants is also evident within the early childhood education curricula of other countries beyond New Zealand (for example see Australia's *Early Years Learning Framework*, England's *Early Years Foundation Stage*, Scotland's *Pre-birth to Three* and Ireland's *Siolta* as cited in Degotardi & Pearson, 2014).

Although various early childhood curriculum frameworks in different areas throughout the world espouse “positive, responsive and reciprocal relationships with people, places and things” (Ministry of Education, 1996, p.9) very little is known about infants’ relationships with their peers in early childhood contexts (Williams et al, 2010; Trevarthen, Barr, Dunlop, Gjersoe, Marwick, & Stephen, 2003). Yet, increasing numbers of infants are spending, often long hours in early childhood care and education settings with non-familial peers (Recchia & Shin, 2012). Although the centrality of relationships to quality early childhood care and education is a fairly new development (Degotardi & Pearson, 2014); the significance of relationships in the early years is reflected in curricula documents that emphasise the importance of interactions in the lives of children (for example see Australia's *Early Years learning Framework*, England's *early Years foundation Stage*, Scotland's *Pre-birth to Three* and Ireland's *Siolta* as cited in Degotardi & Pearson, 2014).

Recent comprehensive literature reviews on quality of early childhood education for infants and toddlers (see for example Dalli, White, Rockel, & Duhn, 2011; Mathers, Eisenstadt, Sylva, Soukakou, & Ereky-Stevens, 2014) highlight intersubjective and dialogic relationships as central to the learning, development and emotional well-being of infants. It therefore seems imperative that research be undertaken in relation to infant and peer intersubjective relations that may potentially inform or give insight to decisions made in the future by educators and policy-makers.

1.3 Why infants and peers?

Traditionally, infants’ were viewed as showing limited social interest in peers; infants’ play was regarded as solitary; and it was accepted that infants’ acted towards peers as inanimate objects (Ross & Goldman, 1977; see for example

Gesell & Ilg, 1943). Although, recent research highlights infancy as a crucial period during which social skills with peers are initially being developed (Williams et al., 2007, 2010), there is still a dominant discourse that before 18 months of age infants' interactions with their peers are infrequent, rudimentary and minimally coordinated (Brownell, Ramani, & Zerwas, 2006).

According to Malaguzzi (1998) “we tend to only notice things that we expect” (p.84), for too long the relationships that infants share with their peers have gone unnoticed, perhaps because of the assumption held by many people that infant and peer relationships are not significant. It is my argument, that infants are indeed relating with their peers and the time is now to shift the lens and notice infants as socially competent intersubjective agents.

1.4 Why teacher engagement?

Early childhood care and education services are environments where infants can experience learning through relational interactions with peer others. However, for many infants, navigating the complex world of peer relationships is often dependent on teachers' pedagogical decisions that may promote, help maintain or 'shut down' opportunities for infants to be intersubjective agents of their own learning and 'being'. In light of recent neuroscience research it is known that the brain is highly plastic during infancy and throughout the first few years of life (Berk, 2012; Dalli et al., 2011). Therefore, an exploration of infant and peer intersubjective relationships beyond the infant — peer dyad is important because of the impact of the teacher's responses on these early experiences and relationships.

1.5 Overview

The second chapter of this thesis presents the literature surrounding infant intersubjectivity in relation to adults, teachers and peers. Existing limitations to a conceptualisation of infant — peer intersubjectivity are introduced alongside a conceptualisation of infants as intersubjective partners. This chapter concludes with a section on the dialogic space beyond the one to one infant — peer relationship in order to consider the impact of the role of the teacher within the dialogic space of an early childhood care and education setting.

Chapter 3 introduces the methodology. A Bakhtinian dialogic approach to analysis is explained in tandem with *utterance* as the unit of analysis and my rationale for a dialogic methodological approach. The subsequent sections of this chapter introduce the participants; further explain the background to this thesis in relation to the previous case studies (White et al., in press, White et al., in 2015; White et al., 2013); ethics; approach to data analysis and video coding. In addition, chapter 3 details my role in expanding on the ideas of the previous studies.

The subsequent two chapters present the results and discussion of this thesis. Chapter 4 responds to the first research question which relates to the intersubjective experience for infants and peers in early childhood care and education. Intersubjectivity is explored in relation to 3 primary genres of interaction *fleeting*, *elongated* and *connected*.

Chapter 5 responds specifically to the second research question which relates to teacher engagement within infant and peer intersubjective events. The interconnectedness of the teacher within the dialogic space and the potential for their engagement to either *restrain* or *sustain* infant — peer interactions is discussed.

The final chapter concludes with a summary of the findings and implications of the present study, for infants in early childhood care and education and infants in future research.

1.6 Summary

This chapter has introduced the background to the study. It has presented a rationale for an exploration of intersubjective experiences that take place in the relationships between infants and peers and a rationale for an exploration of the teacher's engagement within these interactions. An outline of the chapters of this thesis has also been introduced.

The following chapter presents a review of the literature in relation to infant subjectivity and intersubjectivity.

Chapter Two

Literature Review

Infant and Peer Intersubjectivity

The previous chapter introduced the background to this thesis and my role in expanding on the ideas of previous studies (White et al., in press; White et al., 2013, White et al., 2015). In addition, it outlined the rationales in relation to infants, peers, curriculum, and teacher engagement. The previous chapter concluded with an overview of the chapters of this thesis.

This chapter presents an overview of the research in relation to infant subjectivity and intersubjectivity. Initially, the ‘newness’ of infants to early childhood care and education contexts is introduced alongside a synopsis of the existing limitations to a conceptualisation of infant and peer intersubjectivity in literature and research. Subsequently, consideration of teacher engagement in light of these limitations is also presented. The purpose of this is to illuminate the challenges faced by infants to be viewed as thinking, feeling and social agents with awareness and understanding of the world around them. In addition, a new body of research is introduced that highlights how teachers’ interpretations of infants’ competencies may influence the ways they engage in infant and peer social encounters.

The two subsequent sections present a conceptualisation of the infant as a subject and as an intersubjective partner. Intersubjectivity is presented in relation to the various theories that surround infant intersubjectivity as a means of contemplating the notion of intersubjectivity in relation to infant subjectivity. The fourth section presents literature and research in relation to infant and adult intersubjective relationships because research has traditionally centred on the relationships infants have with adults (Degotardi & Pearson, 2014; Selby & Bradley, 2003; Wittmer, 2008). The fifth section explores the research and literature in relation to infant intersubjectivity in early childhood care and education contexts by investigating infants’ relationships with teachers and peers in tandem with an overview of infants in early childhood curricula. Finally, this chapter concludes

with a section relating to dialogic space beyond the infant and peer dyad, enabling consideration to be given to the impact of the role of the teacher within the dialogic space of an early childhood care and education setting.

2.1 Existing limitations to a conceptualisation of infant – peer intersubjectivity

Most infants will encounter other infants as part of their everyday experiences. In the past, these encounters more often than not were confined to the social boundaries of family and friend networks (Wittmer, 2012). However, due to changing social conditions, the presence of infants in early childhood care and education settings, although still a *new* phenomenon, is rapidly becoming a social norm in New Zealand (Carroll-Lind & Angus, 2011) and across the globe (Dalli et al., 2011; Greve & Solheim, 2010; Page, 2013; White, 2011). As a result, early childhood care and education services are providing infants with exposure to peers on a more regular basis than they would typically have experienced in their home or neighbourhood environments (Wittmer, 2012).

Infant relationship research has mostly centred on the relations between infants and adults rather than infants and peers (Degotardi & Pearson, 2010; Selby & Bradley, 2003; Wittmer, 2008). However, an increase of infants attending early childhood care and education settings for longer periods of time (Carroll-Lind & Angus, 2011) has recently seen an increase in “academic attention” in relation to early peer interaction research (Rossetti-Ferreira, Ramon, & Barretto, 2002). Consequently, comprehensive literature reviews nationally and internationally have investigated what ‘quality’ looks like for infants in early childhood education (for example see Dalli et al., 2011; Mathers et al., 2014). These reports focus attention on sensitive, responsive caregiving by teachers who are attuned to infant social cues and needs which subsequently supports the infant’s sense of agency. Rossetti-Ferreira, de Moraes, de Oliveira, Campos-de-Carvalho, and Amorim (2011) argue for academic research that enables teachers a greater understanding into how infants’ interactions and relationships with their peers occur, develop and evolve. It is the assertion of these authors that teacher education into infant — peer relationships will avoid adult misunderstandings of infant interaction such as “nothing is happening” (Rossetti-Ferreira et al., 2011, p.

84) or infants “don’t make friends at this age — not until they’re three” (Brooker, 2014, p. 37).

A common view among many early childhood professionals is one of the infant, as a ‘solitary infant’ (Degotardi & Pearson, 2010; Salamon, 2011), who is unable to establish interactions with other infants that are complex and sustained (Rossetti-Ferreira et al., 2011). This image may stem from a perception that infants are socially incompetent, devoid of intellectual and conscious activity, and lacking in an understanding of feelings because of their age, immaturity and developmental limitations (Lally, 2006). Yet a growing body of research highlights the social competencies of infants and peers, such as their capacity to initiate, share expressions of positive emotion and participate in complex interactions with selected, familiar peer partners (Campbell, Lamb, & Hwang, 2000; Hay, Payne, & Chadwick, 2004; Howes, 2009).

McDowall, Clark and Baylis (2012) draw upon Canella (1997) to explain that the traditional view of the infant as helpless, powerless and reliant on adults arose from a conception of infants as primarily recipients of adult nurturance, support and security. According to McDowall et al., (2012) and Degotardi and Pearson (2014) the limiting perception of the infant as helpless and socially incompetent, restrains the infant’s agency and voice and emphasises unequal adult — infant power relationships. An alternative perspective which recognises infants as powerful social agents who are intellectually and socially competent enhances the types of experiences offered to infants by adults (Degotardi & Pearson, 2014; McDowall et al., 2012; Reddy, 2008). Adult engagement with infants is vital (Reddy, 2008) and how people understand infants and act towards them will depend on their perception of how infants think, feel and perceive (Degotardi & Pearson, 2014; Reddy, 2008). Therefore, Lally (2006) supports a conceptualisation of the infant as vulnerable in their need for care, support and security, yet simultaneously competent in their social, emotional and intellectual capabilities.

2.2 Infants as subjects

The capacity to consider infants as subjects is laden with developmental limitations based on a longstanding psychological view that infants’ capacity to

socially interact cannot be regarded as real communication. According to Reddy, Hay, Murray, and Trevarthen (1997) the stance that infants do have the ability to perceive “the other as a psychological recipient and partner is clearly antithetical” (p. 247) to cognitive developmental approaches (Reddy, 2008). However, for an infant to be capable of intersubjectivity, it must be accepted that the infant is a subject (Reddy, 2008). Drawing from a psychological theoretical perspective, psychoanalyst Daniel Stern’s (1985) findings from infant observation provided a perspective of the infant as an interpersonal human being engaged in a mutually reciprocal relationship from the beginning of life. According to Hargaden and Fenton (2005) this view of the infant as interpersonal challenged an understanding of the infant as a subject because it questioned the primacy of objectivity.

Infants are sociable human beings and seek to communicate with people from birth (Trevarthen et al., 2003). In his developmental theory of innate intersubjectivity, Trevarthen (1979, 1998; Trevarthen & Hubley, 1978) proposed that there was a distinction between the nature of communication at 2 months of age and at 9 to 12 months of age. The former he termed primary intersubjectivity defined as the immediate experience of sharing subjective states (Trevarthen, 1979) and the latter he called secondary intersubjectivity which is the search for sharing of experiences in relation to objects and events (Trevarthen & Hubley, 1978). Trevarthen (1979) purports the intention to communicate and hold conversations with others is evident in the presence and coherence of 2 month old infant language which occurs together in a pattern, in the form of synchronised lip and tongue movements inside the mouth prior to and during vocalisations in co-ordination with non-verbal language. Murray (2014) refers to Trevarthen and Hubley’s (1978) secondary intersubjectivity as the joint attention phase.

According to Murray (2014) this significant shift in social development, to a more “connected-up relatedness” (p. 27), involves the infant developing a greater sense of other people’s experiences in the world and how these experiences relate to the infant’s own experiences, which is essential to “mature social understanding” (p. 25). Although signs to a more ‘connected-up’ social understanding include infant reciprocity with others, following instructions and drawing others’ attention to something by pointing, how infants reach this stage is not entirely known (Murray, 2014).

Experimental studies that provide evidence of infants' conversational abilities are Lynne Murray's blank face test (Murray & Trevarthen, 1985) and Ed Tronick's (1989) still face paradigm. These experiments involved the adult taking part in a conversation with an infant and then interrupting this conversation by holding their face still, looking at the baby but not responding (Murray, 2014). Consequently, the infants became distressed at the unresponsiveness of their partner when they did not receive the response they anticipated. These studies provide evidence that infants are affected by the response or non response from their social partner that is out of the ordinary or unexpected (Murray, 2014) and highlight how the response from their conversation partner does matter (Reddy, 2008, 2012).

2.3 Conceptualising infants as intersubjective partners

According to the literature located in early years education, intersubjective events take place between subjectivities (Dalli et al., 2011) in collaborative contexts where people participate in dialogical interactions (Talamo & Pozzi, 2011). Taking a cognitive development approach to intersubjectivity Berk (2012) draws upon Newson and Newson (1975) to highlight intersubjectivity as a vital feature of social experience. The view they share is that intersubjectivity is a process in which interactional partners commence a task with different understandings but arrive at a mutual understanding. Berk (2012) further accentuates that intersubjectivity provides a common ground for communication as each participant takes into account the point of view of the other. From a Vygotskian sociocultural perspective Smith (2013) also highlights the capacity to see another's point of view, alongside the importance of intersubjectivity in order to "work" (p. 214) in the zone of proximal development, referring to the "shared focus of understanding and purpose that is embedded in close relationships" (p. 214). Furthermore, the purpose of intersubjectivity is to achieve connectedness with an 'other' (Borelli, 2007; Braten, 1998; Trevarthen, 1998; Rommetveit, 1998).

An aspect of intersubjectivity highlighted by Schibbye (2002, 2009, as cited in Bae, 2012, p.57) which supports the views of Stern (1985) is mutual recognition. According to Bae (2012), when mutual recognition is a feature of relationships

there is no hierarchy between partners in the dialogue; interactions take place in which interlocutors can mutually share intentions, thoughts and experiences. According to Zlatev, Brinck, and Andren (2008) joint attention is another aspect of intersubjectivity. The authors define joint attention as the notion of at least two subjects sharing the same focus on an object or they further explain joint attention can be applied to more reciprocal states in which the subjects are also aware that they perceive the same target. Mathers et al., (2014) point out a central characteristic of intersubjectivity is attunement which is comprised of joint attention, reciprocity, timing that is sensitive to the needs of the interactional partner and responsiveness to the social cues of 'others'.

Depending on the view of the infant subject, different bodies of literature express diverse views on the existence or potential of infant intersubjectivity. From a psychological base, for example the concept of intersubjectivity was initially developed by Herbert Mead, whose research explored how human thought arose even before language appeared, when humans interacted only with gestures (Mead & Morris, 1934, as cited in Talamo & Pozzi, 2011, p. 303). According to Reddy et al., (1997) cognitive developmental approaches to the notion of infant intersubjectivity posit the infant as limited in their capacity to interact socially and regard "communication as mediated by late developing cognitions about mental states" (p.247). However, since the mid 1960s to 1970s, developmental researchers have begun to view infants as "infinitely more complex, sophisticated and proactive" than had previously been thought (Hargaden & Fenton, 2005, p. 175) with "a natural ability for intersubjectivity" and capable of engaging in communication with others (Reddy et al., 1997, p. 247).

New understandings about infants as intersubjective agents arose from evidence that had been generated by pioneering researchers refuting claims of infants as asocial objects (Bradley, 2009). Drawing on Habermas' (1970) work Bradley (2009) points out the monologic rubric of Chomsky's (1959) 'language acquisition device' omitted "the crucial dimension of human communication, the 'intersubjectivity' that is afforded by what Habermas called dialogue-constitutive universals" (p. 263). Habermas' (1970) views in relation to this intersubjective dimension of human communication gave theoretical coherence to the work of early infancy researchers who credited infants with complex skills, creative

mental abilities and the capacity to demonstrate sympathy for the thoughts and feelings of others (Malloch & Trevarthen, 2009). However, scepticism still prevails amongst many in psychological domains regarding the “intersubjective status of infant communication” in the first 12 months and specifically the first 6 months of life (Reddy et al., 1997, p. 247; Reddy, 2008). Yet, studies have found infants’ heart rates slow down when they provoke an adult to imitate them and their heart rates increase when they imitate adult gestures which according to Trevarthen and Aitken (2001) reveals these imitative acts are not merely bodily reflexes but an indication of different but definite intentionality.

Nevertheless, debate still exists as to whether or not infants can indeed imitate the actions of others (Reddy, 2008). For example a Piagetian approach does not support the claim that neonatal imitation is a psychological connection between self and other (Reddy, 2008). In Piaget’s (1953) view it was impossible for newborn infants to imitate as they did not have the necessary ability, experience or learning to understand the similarity between self and others. Piaget was of the opinion that infants were born with absolutely no self-awareness, no consciousness of external events, and they did not have the capacity to act intentionally (Piaget, 1953). According to Reddy (2008) it is important to consider the significance of neonatal imitation because if one accepts infants can imitate then this would mean accepting that infants have an awareness of self and other.

An unsettling discovery, given the limited claims concerning the infant as a subject is that there have been almost one hundred studies in human neonatal imitation (for example see Meltzoff & Moore, 1977; Nagy & Molnar, 1994) and there is “complete acceptance” that infants can imitate tongue protrusions (Reddy, 2008, p.47). This presents a challenge to contemporary constructions of intersubjectivity because if one accepts infants have an awareness of self and other; this would mean accepting that infants have the capacity to relate intentionally to another person (Reddy, 2008).

Based on a neuroscience standpoint, infant intersubjective relationships are important to early infant experiences (Gerhardt, 2004). The first year of life is perhaps the most active phase of postnatal brain development, with rapid development of a wide range of cognitive and motor functions (Kagen &

Herschkowitz, 2005). Yet, research is limited in relation to normal brain development in the first few months of life (Gilmore, Lin, Corouge, Vetsa, Smith, Kang, Gu, Hamer, Lieberman, & Gerig, 2007) up until the age of two (Knickmeyer, Gouttard, Kang, Evans, Wilber, & Smith, 2008). However, according to Meltzoff, Kuhl, Movellan, and Sejnowski (2009) translational studies, which involve the collaboration of various disciplines such as psychology, education and the different fields of neuroscience, are providing insights into how experience and biology (e.g., neural mechanisms, synapses) have an effect on each other.

What is known according to recent neuroscience developments is the innate capacity of infants to understand more than was previously thought, accentuating the significance of early experiences and relationships (Page, 2005) which directly influence learning and memory (Geake & Cooper, 2003) and the way the brain is 'wired' (Gammage, 2003; Kagen & Herschkowitz, 2005; Waldegrave & Waldegrave, 2009). This scientific confirmation that the brain develops through a dynamic and continuous interaction between biology and experience is a significant contribution by neuroscience to education (Hinton, Miyamoto, & Della-Chiesa, 2008).

New conceptualisations of infants as subjects give rise to revised understandings about their relationships with others. A dialogic interrogation of intersubjectivity views infants as intersubjective agents in their own right. From a Bakhtinian perspective, intersubjectivity is more than a shared mutual understanding (Rommetveit, 1976, 1979; Smith, 2013) or joint engagement (Goncu & Gauvain, 2011; Tomasello, 1988). The notion of intersubjectivity from a Bakhtinian dialogic perspective encompasses these aspects but also takes into account how people interpret things differently and their understanding is shaped by what they bring to their interactions with others (Bakhtin, 1986; Sullivan, 2013). An important aspect of intersubjectivity is how interpretation and meaning are influenced by the way interlocutors recognise themselves, their voices and perspectives, in the language and its expression, for example through intonation or the degree of a touch (Clark & Holquist, 1984; White, in press). According to Volosinov (1986), meaning "is like an electric spark...which occurs only when two terminals are hooked together. Those who ignore them ...want in effect to

turn on a light bulb after having turned off the current” (p. 102). How infants make sense of things and how this will effect who they are and their way of thinking will depend on the negotiation of language that takes place in the event-of-being, regardless of whether there is agreement or disagreement (alterity) (Bernard-Donals, 1994; White, in press)

Very few studies have adopted a dialogic approach to intersubjectivity with infants. Perhaps the reason is because infants are viewed by many as incapable of the levels of intersubjectivity necessary for dialogic encounter to occur (White, in press). However, as argued by Junefelt (2011) drawing upon Rommetveit’s (1979) perspective, intersubjectivity is a foundation for dialogic exchange and infants are dialogic from birth. Furthermore, Junefelt (2011) explains it is through communication and social experiences with others that intersubjectivity is developed. According to Murray (2014) researchers are challenged in their endeavours to gain a better insight into the social understanding of infants because infants communicate in ways that are rarely expressed in words. In agreement, Sumsion and Goodfellow (2012) draw upon Greve’s (2009) research to highlight the infant’s capacity to communicate through embodied language and expressed emotion. The authors emphasise the need for researchers to gain a better understanding of infant language in order to better understand the lives of infants. Therefore, a Bakhtinian perspective of dialogue is important to the study of infant intersubjectivity because it does not privilege only typical adult forms of language, instead it comprises of all forms of language such as babble, intonation and nonverbal gestures (Junefelt, 2011).

2.4 Relationships with adults

In the past a vast amount of infant relationship and social development research has considered infant-adult dyads as opposed to infants’ relationships with peers (Bradley, 2010). The literature surrounding this research typically explores the relationships between infants and their caregivers and mostly considers the mother to be the primary caregiver (Bradley, 2010). Bradley (2010) suggests the theory that has had a significant influence on how infants interact socially is Bowlby’s psychological theory of attachment (Bowlby, 1969). Attachment theory is based on the premise that social and emotional development is connected to a child’s

early relationships with primary caregivers. According to Bowlby (1969) human babies are born biologically prepared to form attachments to their caregivers; he states that this system of attachment evolved as a means for the human infant to increase their chance of survival. Bowlby (1969) further explains that when infants are developmentally capable of moving away from their attachment figure they usually prefer to remain close to their 'secure base' in order to maintain close proximity to attachment figures should conditions of threat arise.

Drawing upon Bowlby's (1969) attachment theory Page (2005) highlights that although it was not Bowlby's intention, his theories on attachment have often been interpreted as a view that caregiving should always be provided only by a child's natural mother and that caregiving cannot be undertaken safely by multiple caregivers. Consequently, attachment theory with its primary focus on the infant—mother dyadic relationship is not sufficient to capture the relational complexities in an early childhood environment where infants are relating to more than one teacher alongside peers (Kernan, Singer, & Swinnen, 2011). Furthermore Page and Elfer (2013) draw upon Dahlberg, Moss, and Pence (2007) to highlight the view that an overemphasised focus on interactions with adults may be at the detriment of infants' opportunities with peers.

Several studies of infant-adult intersubjectivity approach their investigation by examining the nature of communication. These studies revealed that infants maintained communication by demonstrating their ability to engage in co-ordinated conversation like exchanges with precise regularities in the timing of interactions (Bateson, 1979; Brazelton, Koslowski & Main, 1974; Trevarthen 1974, 1977, 1979). The study of infants interacting in natural, mutually pleasurable communication with their mothers led to current ways of thinking about communicative musicality in infant relationships with adults (Malloch, 1999).

According to Malloch and Trevarthen (2009) in the late 1960s a group of researchers began to question traditional views that regarded infants as asocial information processors. These researchers described the "delicate expressions and sensitive responses" (Malloch & Trevarthen, 2009, p. 1) they observed between young infants and their mothers as "rhythmic patterns of engagement that could

be represented as ‘musical’ or ‘dance-like’ (p. 1). Attunement, acts of meaning and protoconversations were the metaphors used to capture this “dynamic and apparently intentional phenomena of non-verbal communication” (Malloch & Trevarthen, 2009, p. 1). One of the early researchers, cultural anthropologist Mary Catherine Bateson (1979) described features of these ‘rhythmic patterns of engagement’ as being comprised of responsive language forms such as smiles, sounds and gestures underpinned by a mutual rhythmic foundation for turn taking. The synchronised interactions and relationships that take place between infants, parents and teachers are referred to by Raikes and Edwards (2009, as cited in Elicker, Ruprecht, & Anderson, 2014, p. 132) as an ‘extended dance’, as each infant “alternates dancing with one or two (or more) partners (p. 3).

2.5 Infant intersubjectivity in early childhood care and education

The recent interest in infant relationships is due to the significantly larger numbers of infants now attending early childhood care and education settings (Degotardi & Pearson, 2014; Recchia & Shin, 2012; van Hoogdalem, Singer, Eek, & Heesbeen, 2013). For example the New Zealand Children’s Commissioner (Angus, 2010) reports there was a 21.4% increase of infants under the age of 12 months attending New Zealand early childhood centres between 2004 and 2009. For the period between 2002 and 2012 the greatest attendance in New Zealand early childhood care and education services was shown by the age group from birth to 2 years old (Ministry of Education, 2011). Additionally, in Korea the percentage of infants attending centre based programmes increased from 3.2 per cent to 32.5 per cent for infants aged less than 12 months old and from 13.3 per cent to 53.1 per cent for 1 year old infants (Korea Institute of Child Care and Education, 2012, as cited in Park, Wee, & Yang, 2014, p. 56). These statistics reflect trends across other Organisation for Economic Co-operation and Development countries, in relation to infant participation rates in early childhood care and education services (Organisation for Economic Co-operation and Development [OECD], 2012).

Recent national and international literature reviews exploring quality education for infants and toddlers (for example see Dalli et al., 2011; Mathers et al., 2014) highlight the recent and persistent interest in intersubjectivity in infant-teacher relationships due to the convergence of neuroscience with policy and practice.

They draw upon new developments in translational research to highlight the fundamental importance of early experiences and relationships for the developing architecture of an infant's brain. The authors emphasise caregiving experiences that are warm, responsive and sensitive coupled with a dialogic approach to pedagogy as fundamental for infants' learning, development and well-being. Most importantly, these authors highlight intersubjectivity as being integral to reciprocal and dialogic relationships and therefore infant experience (Dalli et al., 2011; Mathers et al., 2014).

2.5.1 Relationships in curriculum

New Zealand was the first country to acknowledge infants as part of the curriculum “for teaching and learning” (White & Mika, 2013, p. 93). Increasing numbers of other countries position relationships and interactions at the centre of their curriculum frameworks such as: Ireland; The Netherlands; and the countries of The United Kingdom (Kernan et al., 2011). These curricula share a focus on young children's learning through exploration and play and emotional security is viewed as the outcome of quality relationships between children, teachers and parents (Kernan et al., 2011).

Central to the New Zealand *Te Whāriki* early childhood care and education curriculum is the expectation that infants will experience positive relationships with others:

“Making a contribution includes developing satisfying relationships with adults and peers. The early development of social confidence has long-term effects, and adults in early childhood education settings play a significant role in helping children to initiate and maintain relationships with peers”. (Ministry of Education, 1996, p.64)

Yet, this view of the infant making a contribution by “developing satisfying relationships with adults and peers” (Ministry of Education, 1996, p. 64) is not shared by all countries across the world. According to Degotardi and Pearson (2014) the focus on relationships as key to quality early childhood care and education is a recent development but one that is reflected in the curriculum documents of countries who emphasise the significance of interactions that are

reciprocal and responsive such as Australia, England, Ireland, New Zealand and Scotland. Nutbrown and Page (2009) confirm this view, adding that infants are firmly embedded in the care and education agendas of countries across the world and “issues relating to the quality provision made for them are central to policy” (p.8).

2.5.2 Infant-teacher relationships

Although intersubjectivity has been identified as a central feature of responsive caregiving (Dalli et al., 2011; Mathers et al., 2014) few studies have examined infant — teacher intersubjectivity. However, the inclusion of infants in curricula documents in various countries across the world (Kernan et al., 2011), an emphasis on quality relationships in early childhood contexts (Dalli et al., 2011; Mathers et al., 2014) and the newness of infants to early childhood settings (Degotardi & Pearson, 2014) may have resulted in the increased academic attention to this area of research.

For her doctoral research study White (2009a) investigated metaphoricity as symbol-sharing and the capacity of teachers to notice, recognise and respond to toddler language cues in a New Zealand early childhood context. This dialogic study involved a teacher, one infant and one toddler aged 18 months and 23 months. White’s (2009a) findings suggest that adults gave much more emphasis to words as cues for intersubjective exchange than body language. Interestingly, other forms of language that were utilised by the infants went unnoticed by the teacher. In addition the 18 month old infant drew on dolls as a source of intersubjectivity in an attempt to enter into dialogue with her teacher based on her observations of the teacher’s past experiences with babies. The processes of “dialoguing together” and “embracing uncertainty” were highlighted as important aspects of pedagogies that support intersubjectivity (White, 2009a, p. x).

The intersubjective experiences that infants participate in with teachers on a daily basis are pivotal to the care and education of infants (Elicker et al., 2014). Recchia and Shin (2012) used qualitative methods to explore the everyday interactions of three infants and their teachers in an early childhood context. The authors’ findings revealed teachers were ‘in synch’ with infants when they established intersubjectivity and ‘out of synch’ when they did not notice the infants’ subtle

cues or when infants did not adapt to teachers' "expectations or styles" (Recchia & Shin, 2012, p. 1545). Consequently, Recchia and Shin (2012) emphasise the importance of warm, positive and responsive interactions between infants and teachers, within early childhood care and education environments.

In a recent study of infant and teacher dialogue (White et al., 2015) the findings suggested that teachers' employment of language that comprised of verbal and non-verbal combinations generated a greater frequency of infant responses. In addition, the capacity of infants to draw upon objects or particular language forms to engage their teacher in dialogue was highlighted in this study and another (White, 2013; White et al., in press). In their re-probing interviews with the lead researcher, the teachers in these studies highlighted the pedagogical significance of non-verbal language such as gaze in their social dialogues with infants as a primary source of intersubjectivity. Furthermore, they articulated pedagogically significant moments as those events that were characterised by being "totally responsive" and "tuned in" to infant's social cues. Limitations of these studies were that they did not consider the intonation aspect of a dialogic approach to intersubjectivity, duration of interaction events or the analysis of these sequences of events over time (White et al., 2015).

In an earlier paper by White and Mika (2013) the authors explain teachers' descriptions of their pedagogy "as a series of intersubjective acts", they focused not only on the verbal but also the embodied language of infants (White & Mika, 2013, p. 101). In contrast, drawing upon a Vygotskian perspective, Siraj-Blatchford (2007) in her sustained shared thinking approach to teacher engagement highlights the importance of thinking as always being mediated by cultural tools such as language. Siraj-Blatchford (2007) associates high cognitive outcomes with sustained teacher — child verbal interaction. According to Siraj-Blatchford (2007) "peer play is more significant by age four" (p. 10), she therefore emphasises infant and teacher interactions for infants. Employing a phenomenological approach enabled Johansson (2011) in her research, to access infants' and toddlers' perspectives by describing them in terms of the child's lived experiences in their 'life worlds'. According to Johansson (2011) the meaning that exists in the relationships between teachers and infants and infants and their peers

depends on the lived experiences that each brings to the life world of the other from life worlds inside and outside of the early childhood setting.

2.5.3 The teacher's role in infant – peer interactions

In the past, it was mostly considered that the capacity of infants to relate to 'others' was primarily with adults not peers. However, with increasing numbers of infants attending centres and socialising with nonfamilial peers (Degotardi & Pearson, 2014; Recchia & Shin, 2012; van Hoogdalem et al., 2013) a greater emphasis is placed on the teacher's role within these infant — peer interactions. However, there is limited research to guide the practice of infant teachers (Park et al., 2014).

According to Williams, Mastergeorge, and Ontai (2010) the teacher in her role can support and maintain peer play. The authors highlight how teachers implement a range of strategies to support infants' awareness of peers, the most predominant being the separation of infants from peers in order to prevent conflict. Infant-peer conflict was also an issue for teachers in a recent study undertaken by Davis and Degotardi (2014) who adopted a qualitative methodology to explore the views and pedagogical practices of early childhood infant teachers in relation to infant— peer relationships. The results of their study revealed that although the teachers had an informed understanding of the social capabilities of infants, they were unable to articulate how they supported the social competence of infants or their relationships with peers. Degotardi and Pearson (2014) draw upon Page, Clare, and Nutbrown (2013) to accentuate the importance of teachers who can articulate their pedagogy because they can “open themselves to self-scrutiny and reflect on the processes” (p. 9) they have participated in with the infants.

Although the teachers in Davis and Degotardi's (2014) study were aware of the importance of play and spontaneous experiences, their responses in relation to intentional teaching were limited and they emphasised strategies for separating infants rather than bringing them together. According to Goodfellow (2014) it is through lived experiences with others that infants learn strategies that they will draw upon to participate in the wider social worlds of life. Therefore, responsibility is with teachers to ensure that early childhood care and education

spaces are “supportive physical, social relational and respectful contexts in which infants as developing human beings, can thrive” (Goodfellow, 2014, p. 209). In their study Musatti and Mayer (2011) focussed on the everyday activities and social processes of infants, toddlers and their teachers in an early childhood care and education environment. A positive feature of this study was the positioning of the teacher’s body in relation to peer exchange (Musatti & Mayer, 2011). The authors acknowledged the willingness of teachers to engage in infant initiated activities and suggest that the teacher’s physical presence is central to sustained infant — peer engagement. Goodfellow (2014) in alignment with Murray (2014) points out the limited knowledge in relation to infant — peer social experiences especially surrounding aspects of intentionality, motivation and infant social understanding. Consequently, Goodfellow (2014) highlights the challenge faced by teachers in knowing when to engage in infant — peer exchange.

2.5.4 Infant and peer relationships in early childhood education groups

In the past, the ways in which infants interacted with their peers, the intersubjective nature of their relationships and the social experiences that occurred within these relationships appear to have been neglected. Priority has been given to investigating the peer relations of older children rather than infants in an early childhood context (Fabes et al., 2003; Kerns & Barth, 1995). The period from birth to the end of the second year was regarded by Rousseau as morally and socially a time of “pure animality without any consciousness of human relations” (Boyd, 1963, p. 249). Despite advances in the fields of neuroscience, education, and psychology highlighting the significance of early infant experiences and relationships for learning, development and emotional well-being, infants are still considered by many to be limited in their capacity to think, feel and understand (Lally, 2006).

Despite the growing interest in infant intersubjectivity and the presence of infants in group care it seems surprising that the relationships that infants experience with each other in the early years setting are a neglected area of study (Dalli et al., 2011; McGaha, Cummings, Lippard, & Dallas, 2011; Stratigos, Bradley & Sumsion, 2014; van Hoogdalem et al., 2013; Williams et al., 2010) this is also the case for studies of infants as members of peer groups (Selby & Bradley, 2003; Stratigos et al., 2014) and studies of infant friendships are even more “rare” (van

Hoogdalem et al., 2013). To my knowledge there are no studies that have considered infant and peer intersubjective experiences from a Bakhtinian dialogic perspective. However, with increasing numbers of infants across the world attending and spending longer periods of time in early childhood centres (White, 2011; Recchia & Shin, 2012) research is highlighting infants' capacity to develop peer attachments (Selleck & Griffin, 1996; Goldschmied & Selleck, 1996), to form peer friendships (Engdahl, 2012), to form relationships (Degotardi & Pearson, 2014; McGaha et al., 2011; Recchia & Dvorakova, 2012; White, 2009a;) and to relate intersubjectively beyond the dyad (Selby & Bradley, 2003). The point at which these studies 'meet' is they all share either an explicit or implicit view that infants are not only responsive to their peers but that their communicative acts are intentional.

These studies (for example see Selleck & Griffin, 1996; Goldschmied & Selleck, 1996; Engdahl, 2012; Selby & Bradley, 2003; White, 2009a) allow for a consideration of infant and peer intersubjectivity because they view infant acts as deliberate communication events and not accidents. Braten (1996) proposes an intra and intersubjective phenomenological space of immediately felt experience termed the infant's companion space (Braten, 1988) which is different to the physical observation space. Braten gives an example of a 6 month old infant who comforted her sibling by stretching out her arm, moved toward the sibling and touched her face. This event was described by Braten (1988) as an intentional as opposed to an accidental act of inclusion of the other. However, even though the body of evidence from these studies and others (Brownell & Brown, 1992; Dunn, 2004; Hay, Nash & Pedersen, 1981; Hay, Nash & Pedersen, 1983; Hay et al., 2004; Hay & Ross, 1982; Howes, 1983, 1988; Vandell & Mueller, 1980; Williams et al, 2010) highlights the social skills and mutual relationships of infants with peers, this body of evidence is not integrated into developmental theory nor does it inform the majority of studies involving older children's peer relations (Hay, Caplan, & Nash, 2009).

An extensive review of literature relating to infant relationships with peers, spanning a period of 90 years, was undertaken by Hay et al., (2009). These authors report that although theorists from the cognitive (Piaget, 1932, 1962), social learning (Bandura, 1977) and sociocultural (Vygotsky, 1982) domains

highlighted the significance of others' influence on older children's learning, behaviour and development; they did not envisage that infants would interact in meaningful ways with their peers. Consequently, Hay et al., (2009) concluded that traditional theories of development considered infants to be limited in their capabilities for social interaction with peers. Drawing on research by Hay (1985), Damon and Lerner (2008) highlight infants' social limitations as unable to comprehend the social and cognitive needs, capacities, or zones of proximal development of same aged peers. According to Reddy et al., (1997) part of the resistance to a conceptualisation of infants as intersubjective agents is because of the predominant uneasiness of accepting "that early sociality originates from anything other than a starting point of asociality" (p. 247).

The experience of attending a centre with other similar aged and often older children is greatly determined by the everyday experiences that help children feel sufficiently safe to explore the world of peer relations. McGaha et al., (2011) carried our research, covering a period of one year, exploring infant and toddler peer relationships in an early childhood context. In their view teachers were often hesitant and "fearful" of interactions between these peer groups because they were unsure of the infants' and toddlers' understandings of others and were concerned for the safety of the infants. What these teacher researchers found was that infants and toddlers with support were capable of interacting with one another. Over time the infants and the older children began to spontaneously interact with each other in various ways without the teacher's support that had been implemented in the initial stages of the research.

Brooker (2014) in her study found that peers were an important resource for infants and toddlers in adapting to the space of an early childhood setting. Her findings showed children initiated a relationship with a child, responded to communication from a peer, offered or received objects from peers and shared in 'joint efforts' or enjoyable experiences with peers. Brooker (2014) observed small groups of infants and toddlers engaged in play strategies "communicating about intentions, interests, and feelings with trusted companions" which Trevarthen (2001, p. 95) calls intersubjectivity. The aim of a study by Engdahl (2012) was to gain an insight into how 1 year old infants form friendships with their peers. Engdahl's (2012) study highlighted infants as competent communicators, who

interacted with their peers in ways that were intentional, inclusive and they paid attention to one another in the ongoing building of relationships.

Williams et al., (2010) concur with Eckerman and Didow (1996) that it is during the second year of life children demonstrate social reciprocity by altering their own actions to correspond with the actions of their peers. In their study of infants aged between 12 and 17 months Williams et al., (2010) proposed that in early infancy the fundamental skills necessary for social development are acquired by infants through engaging in “peer-oriented behaviours” (p. 349) such as touching, pulling, hugging, and responsive interactions with same age peers that afford the infant opportunities to reciprocate and in doing so the infant develops more complex social understanding and behaviour. According to Williams et al., (2010) an infant response to a peer-oriented behaviour constructs the foundation for early peer interaction that is subsequently important for social reciprocity in the future.

According to Rossetti-Ferreira et al., (2011) interactions that occur between infants and peers may appear fragmented, be unplanned, not scripted or take place due to immature motor coordination. Yet all these types of events were shown to support infant — peer engagement. They determined that the infants’ social immaturity was the reason for what they described as “short lived and disorganized” (p. 79) interactive episodes. These researchers also reported that the awkwardness of infants’ social immaturity was shown to prolong and stimulate further interactions between infants. Features of infant and peer interaction presented in a study by Anjos, Amorim and Rossetti-Ferreira (2004, as cited in Rossetti et al, 2011, p. 80) were reported to be reciprocal, brief, frequent, fluid and easily interrupted. However, they noted that the interactions between the infants were far beyond just “doing something together” (p. 80).

Amorim, Anjos, and Rossetti-Ferreira (2008, as cited in Rossetti et al, 2011, p. 80) observed infants in early childhood care and education contexts and found that at the end of their first year of life they demonstrated both empathy and pretend play. For example empathy was evidenced by the way an infant comforted a younger infant by patting her head when she cried as a result of her teacher leaving the room and pretend play was exhibited in the way an infant pretended a younger infant was going to pick up an object from him. Costa (2008, as cited in

Rossetti et al, 2011, p. 79) in her findings revealed silent interactions as features of infant and peer relationships where nonverbal language such as gestures, touch and smiles were used to negotiate with a peer or ask for an object.

Stratigos et al., (2014) emphasise the importance of a sense of belonging and moving beyond infant — teacher dyads to take into account the peer group when considering belonging in relation to infants in early childhood care and education settings. Selby and Bradley carried out research with the purpose of investigating if infants were capable of triadic interactions (Bradley, 2010; Selby & Bradley, 2003; Bradley & Selby, 2004). The ‘infants in group’ paradigm involved three infants no adults and was video recorded. In contrast to the infant — adult focus of attachment theory, Selby and Bradley’s (2003) findings highlighted infants’ capabilities to engage in social interactions with multiple infants at a time. According to Harris (1995) categorising people into groups is the initial step in human group connection. Although Piaget (1953) did not consider infants to be capable of categorisation, evidence suggests that infants are capable of doing so (Eimas & Quinn, 1994; Mandler, 1988, 1992).

Selby and Bradley’s (2003) study found that infants within the same intersubjective space were able to enter into relationships that indicated awareness of more than one other at the same time, they called this ‘three- way’ linking. They reported that infants gained an understanding of the world by interacting with their peers in a group situation, or by observing their peers’ interactions with other peers or teachers (Selby & Bradley, 2003). In line with Harris’ (1995) thinking, Selby and Bradley’s results (2003) underpin the significance of peer relationships alongside the “intersubjective dynamics of groupness for thinking belonging with infants” in early childhood care and education (p. 182).

According to Goodfellow (2014) the group aspect of early childhood care and education environments requires infants to a certain extent to become “enculturated into a culture of groupness with its structure, expectations and accepted ways of being” (p. 186). Therefore, Goodfellow (2014) emphasises the importance of the role teachers play in moving beyond the individual to focus on infants’ lived experiences within peer groups.

2.6 Beyond one to one – The Dialogic Space

Recent research (Wegerif, 2007, 2010, 2013) emphasises the importance of dialogic space. Wegerif (2013) explains dialogic space is the space of possibilities “that opens up in educational relationships” (p. 62), between different points of view, held together “in the tension of a dialogue” (p. 151). This dialogic space is not a limited zone that one passes through (Wegerif, 2013), it is a context within which voices can emerge and inter-relate (Wegerif, 2014). According to Holquist (1990, 2002) a dialogic approach to intersubjectivity values dialogic spaces as places where partners in dialogue have the potential to condition, qualify and confirm the other (Holquist, 1990, 2002). Through the lived experience of dialogue with an ‘other’ each partner is *response-able* to not only receive from the ‘other’ but also to reciprocate and “interanimate meaning” (White, 2013, p. 65). Furthermore, Wegerif (2010, 2013) explains dialogic spaces can be ‘opened up’ *through* interpretation, ‘widened’ *through* the inclusion of new voices and ‘deepened’ *through* reflection or assumptions. There appear to be no studies that have explored infant and peer intersubjective relationships from a Bakhtinian theoretical perspective, orienting towards the ‘social space’ in its entirety, in an early childhood care and education context.

A Bakhtinian dialogic approach to intersubjectivity sees the potential of infinite possibilities within the *event-of-being* through feeling, seeing, engaging with the other through the lived experience of dialogue in the ‘now’ moments (Reddy, 2008; White, in press). Wegerif (2013) explains, learning that takes place in the dialogic space is not one way, it has the form shaping potential to impact on both teacher and learner, as both are influenced by the point of views of the ‘other’. Significance is given to the interconnectedness and form shaping potential of, for, and with all partners in the dialogue alongside the values, beliefs and ideals that each brings to the relationship (Sullivan, 2013). Furthermore, Elicker et al., (2014) point out that the interactions that occur in the ‘now’ moments are fundamental to the formation of relationships and yield “persistent emotional tones, memories, expectations, shared meanings and early conceptions about self and ‘other’”. The authors draw upon Elicker and Fortner-Wood (1995) and Hinde (1979) to explain that the experiences that take place within these interactions are maintained across time and space regardless of whether the teacher is present or not.

A dialogic approach allows researchers to consider the interconnectedness of infant and peer intersubjective events beyond the dyad through an appreciation of dialogic space as the place of common ground through which intersubjective relationships may be sought. The dialogic space is inseparable from subjectivity and intersubjectivity (Bakhtin, 1986).

Two juxtaposed utterances belonging to different people ... if they only slightly converge on one and the same subject (idea), inevitably enter into dialogic relations with one another. (Bakhtin, 1986, p. 115)

As Weigand (2012) suggests common ground is established when human beings as social individuals have the ability to share experiences, bringing different meanings and understandings to encounters which are negotiated in dialogue. The importance of considering dialogic spaces in infant research is highlighted in studies that position the infant as an intersubjective partner (White, 2009a; White et al., in press; White et al., 2013; White et al., 2015). In these studies consideration is given to events in the wider social space beyond the infant and teacher dyad and in doing so highlight the connectivity of dialogic spaces. According to White et al., (2015) infants have the capacity to draw upon past experiences, for example a game of peek-a-boo to engage in dialogue with teachers in present experiences, that are being watched by other infants who may employ the same game of 'boo' in future experiences — such is the connectivity of the dialogic space.

2.7 Summary

In this chapter I have highlighted that the developmental limitations, the newness of infants in early childhood care and education settings and the lack of academic research has led to a belief that infant— peer intersubjective relationships are not possible. In contrast, I highlight recent research which emphasises the importance of dialogic spaces as places that offer possibilities to 'open up' dialogue, establish common ground and develop relationships. There appear to be no studies that have looked at infant and peer intersubjective relationships from a Bakhtinian theoretical perspective orienting towards the 'social space in its entirety. This study fills that gap. I assert that a Bakhtinian dialogic approach to an investigation

of infant — peer intersubjective relationships enables the infant to be viewed as an intersubjective agent in their own right with peers and with teachers.

In the following chapter the significance of engaging in methodology from a Bakhtinian dialogic standpoint is explored and the method and data analysis are presented.

Chapter Three

Methodology

The Dialogic Space – A Route to Infant and Peer Intersubjective Experiences

In the previous chapter I argued for a Bakhtinian dialogic approach to the exploration of infant and peer intersubjective relationships. A dialogic approach to intersubjectivity views the infant as a thinking, feeling, engaging subject who is aware of ‘others’ as opposed to an object. Therefore, I contend that a dialogic interrogation to intersubjectivity is imperative because it provides a lens through which infants are viewed as capable of the levels of intersubjectivity necessary to engage in relationships with peers and teachers as agents in their own right.

3.1 Bakhtinian conceptual framework

The conceptual framework for this thesis, therefore, draws upon the theories of Soviet semiotician, literary scholar, cultural theorist and philosopher Mikhail Mikhailovich Bakhtin (1895-1975). Bakhtin’s theory of dialogism is employed to investigate the intersubjective relations that take place between infants and their peers, and the role of the teacher through her engagement within these events, in an early childhood care and education context.

Bakhtin placed “dialogue between two consciousnesses as a subject and instrument of consciousness study” emphatically claiming “solo consciousness is an illusion or lie and usurpation” (Zinchenko, 2010, p. 2). According to Wegerif (2007) drawing upon Rommetveit (1992) and Per Linell (1998, 2003) three points that are pivotal to the epistemological framework of dialogism are: communicative acts respond to past acts and anticipate future responses; that “acts are in ‘dialogue’ with other aspects of context such as cultural traditions and social setting” (Wegerif, 2007, p. 17); and meaning is not fixed before dialogues but is generated within dialogues.

In essence meaning belongs to a word in its position between speakers; that is, meaning is realised only in the process of active responsive, understanding. (Volosinov, 1986, p. 103)

According to Bakhtin (1986) meaning is always generated out of the interaction in the place of in-betweenness of different voices and different points of view, and “meaning is always a response to a question” (Wegerif, 2007, p. 18) — this is called the dialogic space.

A Bakhtinian approach to a study of infant — peer intersubjective experiences, orienting toward this dialogic space, gives insight into what it means for infants to interact with their peers, through an enquiry of how infants’ embodied language directs, transforms, influences and also offers resistance to the actions of *others*. In the chapter that follows, the first section explores the significance of engaging in methodology from a Bakhtinian dialogic standpoint, alongside its relevance to research that attempts to illuminate infant and peer intersubjective experience and how teachers are answerable through their engagement in infant and peer intersubjective relationships, in an early childhood setting. The subsequent sections present the method and data analysis.

3.1.1 Bakhtinian dialogic methodological approach.

Dialogism is the “intersubjective quality of all meaning [which] ... exists at the space between expression and understanding” (Hirschkop, 1999, p. 4, as cited in White & Nuttall, 2007, p. 2). With a central focus on communication, dialogism is based on the point of view that human beings live in the world of others’ words (Bakhtin 1986). Intersubjectivity provides a foundation for dialogic exchange (Junefelt, 2011), which is developed through communication and relational experiences with others, in the context of this study, between infants and their peers. The potential for infants to be recognised as intersubjective agents in their relationships with peers and teachers is also made possible in a Bakhtinian dialogic approach as opposed to others because of its emphasis on subjectivity.

The agency of the infant to contribute to their own subjectivity in communion with others is respected within a Bakhtinian dialogic methodological framework because it offers new insights into the language that is used by infants in relating to their peers, highlighting the importance of dialogue in infant pedagogy. Language from a Bakhtinian perspective does not privilege one form over another. Instead all forms of language constitute dialogue (Junefelt, 2011). From a Bakhtinian perspective gesture, tone, sounds, eye contact, even an infant’s breath

are regarded essential forms of communication. These language forms in tandem with the intended purpose of the language (content) as they are present in communication construct speech genres— “forms of combinations of forms” (Bakhtin, 1986, p. xvi).

A speech genre is not a form of language, but a typical form of utterance; as such the genre also includes a certain typical kind of expression that inheres in it. In the genre the word acquires a particular typical expression. Genres correspond to typical situations of speech communication, typical themes, and consequently, also to particular contacts between the meanings of words and actual concrete reality under certain typical circumstances. (Bakhtin, 1986, p.87)

The speech genres (Cresswell & Teucher, 2011) that children co-participate in, they may share an emotional volitional tone but will also bring with them the speech genres of others and will be influenced by the speech genres that others bring to the event-of-being. In the context of the present study Bakhtin’s (1986) concept of genre allowed analysis to consider the intersubjective experience of infants’ use of embodied language (form) and its intended purpose (content) in their interactions with peers and subsequently when teachers engaged.

Bakhtin’s theory of dialogism (1981, 1984, 1986) with its emphasis on human relations is important to the study of subjectivity because importance is placed on dialogue between self and ‘other’ for human development, enabling insight into the intersubjective experience of infant and peer relationships. ‘To be’, from a Bakhtinian perspective is located in communication that is dialogic (Bakhtin, 1984). “Life by its very nature is dialogic. To live means to participate in dialogue: to ask questions, to heed, to respond, to agree and so forth” (Bakhtin, 1984, p. 293). Therefore, dialogue requires a reciprocal relationship between participants to listen, respond and pursue meaning. In broad terms *to be* dialogical means being open towards others and towards diverse perspectives —it suggests being drawn towards enquiry that is shared with the purpose of learning something with or from others (Wegerif, 2007).

A Bakhtinian approach to research provides a means for exploring infant—peer intersubjective relations through the lived experience of dialogue “in the ‘now’ of the engagement” (Reddy, 2008, p. 28) with a focus on how meaning is not fixed, but continuously being generated with others in the *event-of-being*. For Bakhtin the response that is generated through the experience of *living* language in dialogue with an ‘other’, saturated with thoughts, feelings and ideas, rather than just an abstract understanding of an idea or situation defines how people come to know. Therefore, true knowledge derives from personal participation (Sullivan, 2013) and “any true understanding is dialogic in nature” (Clark & Holquist, 1984, p. 232). People cannot become who they are in isolation; it is through encounters with others that they come to know themselves (Beilis, 2002, p. 6).

It is in the event-of-being that a simultaneity of sameness and difference intersect as interlocutors ‘meet’ in dialogue (Holquist, 1990, 2002; White, in press), occupying approximately the same time and space as they communicate (Bakhtin, 1981). According to Smidt (2009), from a Bakhtinian stance, unlike for example Vygotskian theory, the learner is not merely appropriating “concepts, language, roles and rules” when they interact, the situation is more complex and always involves elements of possibilities for disagreement or difference and mutual understanding (p. 98). The difference referred to here is Bakhtin’s notion of *alterity* (dissensus).

Alterity is viewed as integral to learning from a dialogic perspective, not only for infants but also for teachers in the context of this study, as it offers a site of ‘difference’, for example of action, change, ambiguity, relationality, in which language can be interpreted and negotiated between partners in dialogue with each ‘other’. Drawing upon Rommetveit’s (1976, 1979) notion of intersubjectivity and Bakhtin’s (1986) notion of alterity, Junefelt (2011) argues that these concepts formulate the infant’s ability to be dialogic, to interact, to communicate and dialogue with others. Summoning Holquist’s (1990) interpretation of Bakhtin, Junefelt (2011) explains “intersubjectivity and alterity might be seen as two sides of the same coin, since neither is hostile to the other but each wants to be part of the other” (p. 161). Therefore, embedded in a Bakhtinian approach is the viewpoint that dialogue is both an intersubjective experience and a conflict of

divergent points-of-view in which one perspective is “opposed to another” (Bakhtin, 1981, p. 314).

A dialogical methodology was employed for this research because it allowed me to investigate the *event-of-being* as the space where intersubjectivity takes place between infants and their peers in an early childhood environment. This dialogic space is the intersection that exists between people who are engaged in the *lived* experience of dialogue. It is a space that is open to new ways, perspectives and styles of others, which in turn offers potentially infinite new meanings and insights, it is the place which makes relationships possible (Wegerif, 2013). It is in this *event-of-being* that mutual intersubjective engagement surpasses any singular perspective—people recognise themselves in relation to others in the world.

3.1.2 Unit of analysis

For the purposes of this thesis Bakhtin’s concept of *utterance* in its answerable form is the unit of analysis, employed for the purpose of analysing infant-peer intersubjective relations and subsequently teacher engagement within these events. It is my understanding that applying utterance as a unit of analysis will yield a greater understanding of the complexity of the intersubjective relationship between infants and their peers and the role of the teacher within these social encounters as she engages with more than one infant. Rommetveit (1979) endorses accounts of language that are grounded in the dynamics of communication and dialogue when endeavouring to understand intersubjectivity. In their study examining discourse from an eighth-grade science classroom Mortimer and Wertsch (2003) explain in order to understand the dynamics of intersubjectivity, analytic importance must be given “to utterances as opposed to abstract, decontextualised linguistic forms” (p. 231). *Utterance* has been employed in studies as a unit of analysis to investigate the dialogue between infants and teachers (White et al., 2015), the significance of a ‘look’ (White, et al., in press) and toddler metaphoricity (White, 2009a).

Bakhtin’s theory of dialogism enabled infant and peer communication and subsequently teacher engagement to be viewed as a social rather than an individual experience because dialogism regards any *utterance* as existing “in a very complexly organised chain of other utterances” (Bakhtin, 1986, p.69).

Viewed as a link in a chain of speech communication, *utterance* is connected to preceding links and subsequent links (Bakhtin, 1986). As such *utterance* is always a response to another utterance that has gone before it and “is therefore conditioned by, and in turn qualifies, the prior utterance to a greater or lesser degree” (Holquist, 2002, p. 60). In addition, the possible response inevitably confirms, qualifies and conditions the relations between utterances as well as the context that makes utterances meaningful (Holquist, 2002).

Forms of language do not belong solely to individuals; they belong to the context of the social encounter that is unfolding between partners in dialogue and are infused with shared thoughts, feelings and points of view (Bakhtin, 1986). According to White (2009b), “utterance includes both the language itself and the way it is interpreted in action, as an answerable act” (p. 4). Therefore, utterance from a Bakhtinian stance is dialogic in nature (Holquist, 1990, 2002), is only achieved when it is answered (Bakhtin, 1981) and takes place in the space between speakers known as the *event-of-being* (Holquist, 1990, 2002). A Bakhtinian view on answerability means that individuals carry a moral and ethical responsibility toward ‘others’ (Bakhtin, 1990). Drawing on a Bakhtinian perspective Holquist (1990, 2002) explains utterances are jointly constructed by partners in dialogue and meaning is generated as an effect of this interaction (Clark & Holquist, 1984).

Very young children are often perceived as having limited capabilities in human speech (Vygotsky, 1994). However, Bakhtin places emphasis on the *lived body* as a means for infant communication. The implementation of *utterance* as a unit of analysis supports my analysis of intersubjective experience between embodied infant and peer ‘voices’ in the event-of-being, by dialogically giving consideration to “all forms of language as they occur in dialogues” (Junefelt, 2011, p. 167) and “their received meanings *by those involved*” (White et al., 2015, p. 161), alongside a view that the meaning of language (content), does not exist in the forms that constitute it, such as gestures but in the intended purpose of these language forms.

3.1.3 Rationale for a Bakhtinian dialogic approach

Bakhtin's dialogic approach to the study of relationships provides a way to analyse infant and peer interactions by exploring the dialogue that takes place during interaction as a *lived* encounter between infants and their peers. It is this encounter between human beings that Bakhtin considers to be an 'event' or 'co-being' which is closely linked with the shared experience of two or more subjects (Brandist, 2002). For Bakhtin, an event can never be an encounter between a subject and an object *alone*, it always involves an 'other'— a thou (Steinby & Klapuri, 2013). Therefore, the nature of *being* is essentially intersubjective — 'co-being'.

In the context of this thesis, Bakhtin's concept of answerability recognises the infant as a partner in dialogue with other answering consciousnesses — peers and teachers. This notion also enables an investigation of the teacher's role in relations between infants and peers. An ontological view from a Bakhtinian stand point suggests individuals "... depend on others for values or embodied ideas to give a clear sense of who they are" (Sullivan, 2013, p. 5). From the beginning of existence human beings are in relationships in which they depend on others to give them a sense of value and importance (Bakhtin, 1990). Therefore, being in the world with *others* involves social encounters that place extreme importance on an ethical obligation to show responsibility or answerability towards *others* (Steinby & Klapuri, 2013). Bakhtin's notions of answerability and dialogism are evidence of his commitment to moral relationship building (Nollan, 2004) because these concepts highlight the responsibility of human beings to act, respond and participate in all aspects of life — there is *no alibi*, which means people are implicated regardless of what comes their way (Holquist, 1990, 2002).

It is Bakhtin's emphasis on the ethical element of encounters with *other* subjectivities that offers a route to investigating how teachers are implicated through their engagement in the dialogue that takes place between infants and their peers in the *event-of-being*. According to Steinby and Klapuri (2013) *being* in the world with other people means from a Bakhtinian perspective that human subjects have an obligation "to show 'answerability' or 'responsibility' towards the others" (p.xvi). Therefore, Bakhtin's notion of utterance as an answerable act

offers a route to understanding the teacher's engagement within the intersubjective experience of infant and peer relations.

Bakhtin's dialogic principles in the present study enable an exploration of the everyday *event-of-being* experience for infants in dialogue with peers and teachers in the context of an early childhood environment — to live it.

3.2 Method

My interest in researching infant and peer relationships stemmed from experiences as a research scholar for two Summer Research Scholarship projects for a pilot study project titled *Through infant eyes* (White et al., 2015). The pilot study utilised dialogic methodology to investigate the nature of dialogic experience for infants in an education and care context (White et al., 2015). Participants wore “camhats” (White, 2010) fitted with a tiny recording device. Infant and teacher interactions were captured using a polyphonic video recording method developed by White (2009a). This approach enabled an actual view of the world from the visual perspective of the infant as *seen* not through an adult lens but as *seen* through the visual field of the infant (White et al., 2015). Whilst analysing the polyphonic video footage it became apparent that the social experiences of infants, in an early childhood care and education context, extended beyond the parameters of the infant-teacher dyad. Indeed, infants' interactions with peers and infants' observations of their peers' interactions with others (i.e., the teacher) appeared to be a significant social aspect of their early childhood experience. Therefore, although I will be using the same polyphonic video recording (White, 2009a) that was used for the original pilot study, I investigate infant and *peer* intersubjective relationships in this project and subsequent teacher engagement within these events.

Filming of the participants took place in 2011 by the lead researcher (White et al., 2015). I was not involved in the filming, collection of the data, re-probing interviews, design of the ‘cam hat’ or the development of the polyphonic video approach (White, 2009a). My involvement was in cleaning, coding, generating and analysing the data in my role as a summer research scholar on two separate occasions. This thesis is a response to my lived research experiences investigating infants' social experiences thus far and the insights this earlier work generated in

relation to the current project. A further rationale for using this data is that the work of filming infants in early childhood settings is very intimate and potentially intrusive (Stephenson, 2011). Therefore it seemed appropriate to draw upon this rich source of data that already existed and which I had permission to use as a student (see chapter 3, ethics section 3.3).

3.2.1 Introducing the participants

The research that formed the basis for my subsequent analysis took place in a New Zealand high quality education and care centre that catered for children less than two years of age (White et al., 2015). The main participants included a 4 month old male infant, a 10 month old female infant and two female teachers. Both key teachers were experienced, qualified and fully registered educators. The two infants were selected by the principal researcher of the original study because they were under the age of one, were enrolled at the centre on a full-time basis, their attendance at the centre prior to filming was at least three months, each infant had a key teacher who had remained the same during that period of time. The four-month-old infant was enrolled at the centre on a full-time basis for eight hours per day, five days a week. He had been attending the centre full time for three months prior to filming and his key teacher had been his primary caregiver for this period of time. The 10 month old infant had also been in the care of her key teacher for the five months that she had attended the centre on a full-time basis. At the time of filming the 4 month old infant depended on adults in order to move from place to place whereas the 10 month old infant was able to roll, shuffle and move backwards in her efforts to locomote independently (White et al., 2015). Four other infant peers were also included in the research project however they did not wear cam hats. These 'other infant peers' ranged in age from similar-aged to 18 months old.

The small infant group size with a limit of ten infants or less in the centre at any one time was a feature of this early childhood centre. A key teacher system was also advocated and evident in all centre practices. A key teacher system is not legislated practice in New Zealand, however, with the increasing number of qualified teachers working with infants in New Zealand the term 'key teacher' and the system that it affords is becoming widely used in the context of many New

Zealand early childhood centres (Taouma, Wendt-Samu, Podmore, Tapusoa, & Moananu, 2003). A ‘key teacher’ system operates on the view that a designated person is the teacher primarily responsible for the care and education of the infants in her or his care, as a means of promoting secure attachments alongside providing support for their assigned infant’s family (Rockel, 2009; Taouma et al., 2003).

The feature of a key teacher system was an important consideration in relation to my thesis because regardless of whether or not the key teacher engaged with the infants in their intersubjective interactions the teacher was always implicated by just being part of the dialogic space. Analysis considered whether or not teachers ‘opened up’ or ‘shut down’ infant — peer intersubjective interaction. According to Whaley and Rubenstein (1994) even in early childhood care and education settings where friendships were fostered, teachers engaged by frequently ‘shutting down’ peer social interactions. In this light, the way the key teacher engages with infants and peers is of paramount significance because her response will have an impact on the dialogic space of the early childhood care and education environment.

3.2.2 Procedure

The polyphonic process for capturing footage, based on Bakhtin’s notion of visual surplus, is explained elsewhere by White et al., (2015) (see also White, 2010, in press). For the purposes of this thesis and since I did not personally generate the original footage, it is sufficient to say that 180 minutes, 83 uninterrupted minutes of video data for one infant and 80 uninterrupted minutes for the other infant, were made available for analyses (White et al., 2015). Footage from the visual field of the infant, the key teacher and the lead researcher were time synchronised prior to my involvement in the project.

For the purposes of this thesis, focussing on infant and peer intersubjective relations and how the teacher engages within these social encounters, I returned to this data to analyse the interactions between the interacting bodies on screen. In dialogic research the visual surplus of the participants, “enables a focus on the interpreted experience of ‘other’ rather than consummated truth claims by the lone researcher” (White, 2011, p. 64). A polyphonic video approach enabled emphasis

to be placed on the visual surplus of the two primary infants simultaneously capturing the teacher's visual surplus alongside what the researcher *sees*. The four combined visual fields collectively captured each infant — peer intersubjective event from four different time synchronised perspectives.

Although I did not collect the data I feel a strong connection with the data through the many hours and multiple viewings of the video recordings spanning a period of two years through my connection as a research scholar for the pilot study. During this time I have met the teacher participants and have been privy to their words and worlds. My decision to analyse data that had been previously recorded meant accepting that my contribution was not in the research design or in deciding what events were to be captured through the visual surplus of a researcher's lens, but rather in what I could add to the data by applying my own visual excess in an attempt to qualitatively interpret from the outside. From a dialogic methodological perspective there is never only one way of interpreting data, it can have many different meanings. Hence, the purpose of my interpretation is not to determine any singular meaning but to “make sense of the different and ambiguous ways in which a meaning may be experienced” (Sullivan, 2013, p. 14). Therefore, it is as if this thesis is my inevitable response to the enduring and endearing hours that were spent meta-analysing hours and hours of footage involving these participants whom I feel I know so well through our on screen connection.

3.2.3 Polyphonic video

According to Lodico, Spaulding, and Voegtle (2010) ethnographic research collects information about the research area being explored from multiple perspectives, over a period of time, during which the “shared patterns of behaviour, language and actions of a cultural group” are studied in their natural environment (Creswell, 2014, p. 14). The employment of video technology in research has made it possible for researchers to make valuable contributions to infant research (see for example Selby & Bradley, 2003; Johansson, 2011; White, 2009a). In the past, researchers had to rock reels of film back and forth over a small number of frames in order to time synchronise participant interactions in preparation for analysis (see for example Trevarthen's research as cited in Beebe, Knoblauch, Rustin & Sorter, 2003).

Visual technology made it possible to capture the lived bodily experiences of participants in dialogue with each other. Dialogic methodology provided a tool for accessing and analysing the video recorded lived experiences from the perspectives of the participants. By using a polyphonic video approach it is possible to capture and time synchronise the visual fields of different points of view at the same moment in time (White, 2009a). According to White (2009a) a polyphonic video approach provides an effective means “of capturing language that would contribute to the unit of analysis” (p. 78). White (2009a) highlights the advantage of employing a polyphonic video approach in order to capture the embodied language of infants from multiple visual field perspectives which meant the footage could be accessed from multiple views for “multiple interpretations of the act” (p. 79). See section 3.4 for further explanation.

For Bakhtin (1990) subjects occupy “a situation in existence” (p. 26) for a moment in time which allows the individual to see what others cannot from their unique location in space; this “uniqueness of vision” Bakhtin termed “excess of seeing” (p. 26). Bakhtin’s (1990) notion of excess of seeing enables an understanding of how people come to see and know self from the outside through a conceptualisation of how they see themselves viewed by others. When human beings encounter each other they will always have access to parts of the other such as “his head, his face and its expressions, the world behind his back, and a whole series of objects and relations, which in any of our mutual relations are accessible to me but not to him” (p. 26).

3.3 Ethics

I was given ethical consent by the University of Waikato ethics committee to embark on my research for the purposes of this thesis drawing from polyphonic video data collected in an initial pilot study titled *Seeing through infant eyes* (see http://www.waikato.ac.nz/_data/assets/pdf_file/0006/140694/through_infant_eye_s_poster.pdf, White, Peter, & Redder, 2013). An extension in relation to a research ethics application 102629 by Dr White was approved allowing the use of the original ‘infant’ footage to be further analysed. The extension conditions required my research proposal to ‘fit’ within the original application; this was achieved based on its orientation within an original research question: “What is

the nature of infant social experience with their peers?” However, the subsequent development of my research proposal, although closely aligned to the original is based on my own scholarship arising from the infant project work initially carried out with Dr Jayne White and Dr Mira Peter. Consequently, my research interests for the purposes of this thesis are positioned within the area of infant and peer relationships.

Since the original ethics proposal for the pilot study *Seeing through infant eyes* was approved, I have been involved in analysing the data as a research assistant — analysis investigated infant and teacher interactions. Furthermore, my participation in the analysis is covered by the consent form clause stating that “the footage will be analysed by the teacher, the researcher, a research assistant and other academic personnel”.

The extension allowed the use of video data as raw data only, precluding the use of including the actual video footage in my thesis, alongside the use of the video data for presenting purposes in any public forum. Therefore, screenshot images used for the purposes of presenting results were digitally drawn using an Adobe Photoshop drawing software package. This was necessary in order to protect participant confidentiality, yet, still enable images to be a qualitative feature of this analysis.

Research related to infants in early childhood care and education offers ethical challenges which differ in comparison to those of older children. Research results are often critically challenged because of factors such as the infant’s age, maturity and verbal language limitations (Greve & Solheim, 2010). A dilemma faced by many infant researchers who do not want to ventriloquise infant participants in their endeavours to involve infants and listen to their voices and perspectives in research. Yet, without the ability to verbalise, infants are viewed by many adults as limited in their ability to express their views (Rossetti-Ferreira et al., 2011) and as a result few infant research studies have examined what early childhood experiences are like from the perspective of the infant themselves (Sumsion & Goodfellow, 2012).

Access to the visual field of infants was achieved by employing a polyphonic video approach. This method was of significant benefit to analysis as it enabled a

lens through which the social world from the perspective of the infant could be viewed. In the same vein as the previous study I was involved in, “no claim is made that such visual means can (or should) provide access to an infant perspective” (White et al., 2015, p. 163). As reported elsewhere (White et al., 2015) this is a highly ethical as well as an empirical endeavour, as Bakhtin (1990) explains:

“As we gaze into each other, two different worlds are reflected in the pupils of our eyes... to annihilate this difference completely it would be necessary to merge into one”. (p. 23)

Another condition of using the polyphonic video data as raw data only, meant the teacher re-probing interviews could not be analysed for the purposes of this thesis. Therefore, I make no apologies for positioning myself as the subject ‘I’ at times throughout this thesis, as writing from a first person perspective is necessary to ensure I avoid speaking for the infants, their peers or the teachers. Therefore, analysis of the intersubjective experience of infants and peers and the ways in which teachers engaged in these events is based on my own interpretation of the interacting bodies on screen.

3.4 Approach to data analysis

A polyphonic video approach (White, 2009a) to research had the advantage of providing footage for analysis that captured four time synchronised different perspectives of the one moment-by-moment event in time (see Image 1).

Image 1. Four different visual fields from the perspective of infant, peer, teacher, and researcher.



The time synchronised video recordings were already uploaded to a video analysis software programme called *Studiocode*, as part of the previous study, which had focussed on infant and teacher dialogue (White et al., 2015). However, as the primary focus of my research was infant and peer intersubjective relationships, which had not been analysed in the previous study, my analysis began by creating a new timeline in *Studiocode* (see Appendix A) in preparation for coding the intersubjective events as determined by my unit of analysis — *utterance*.

Studiocode is a computer software programme designed for the purposes of analysing video data both qualitatively and quantitatively. By employing *Studiocode* it was possible to analyse simultaneously the complexity of the video recorded data of four perspectives of the same event. *Studiocode* was the instrument I used to establish codes that would enable the data to be categorised into intersubjective events as determined by my unit of analysis of *utterance*. The conceptualisation of the codes was entirely based on the work for the previous studies that I was involved in (White et al., in press, White et al., 2013; White et al., 2015). However, I have developed the codes further to create new definitions for the purposes of this thesis, in relation to infant and peer interactions and subsequent teacher engagement.

3.4.1 Mixed methods approach

A mixed method approach to analysis was adopted for the purposes of this thesis. The research design of this thesis did not seek to employ mixed methods for the purpose of generating a greater volume of data. Instead, it was my intention to employ a mixed methods approach as a means of provoking ‘dialogue’ between two different approaches to data analysis, as a means for each method to inform and shape the other in order to illuminate a richer understanding of my research problem.

A mixed methods research approach usually refers to the integration of qualitative and quantitative methods in one study (Cresswell, 2014). Quantitative methods enable researchers to obtain generalisations from the data and qualitative methods illuminate the ‘lived experiences’ of people (Nagy Hesse-Biber & Leavy, 2011). According to Greene and Caracelli (1997), the dialogue between different methods and their respective paradigms can foster a more complete understanding

than either paradigm could obtain alone because as asserted by Cresswell (2014) and Denscombe (2008) the weaknesses and biases of a single approach are neutralized by the combining of methods. In alignment with Markova and Linell (1996) I employed a dialogic methodology within a mixed-method approach which involved quantitative and qualitative analysis of infant — peer intersubjective events.

3.4.1.1 Quantitative analysis

Quantitative analysis captured the initial exchange employed by infants or peers to initiate or respond during interaction. Statistical analysis of the data was undertaken by using Statistical Package for the Social Sciences (*SPSS*, v.20) to calculate the frequencies of counts. I am not claiming that the quantities of events represent truth. Instead, I am using them as a means of understanding the intersubjective experience through the unit of analysis of *utterance*.

3.4.1.2 Qualitative analysis

The data was analysed qualitatively by writing a narrative description for each intersubjective event that took into account each visual point-of-view as viewed through the video recorder lens of participants and the researcher. Narratives were time aligned to the corresponding event in *Studiocode*. This was integral to the analysis as it enabled the interaction, beyond the initial infant — peer exchange to also be analysed in the context of the event and enabled the language to be captured using the metaphor of the ‘dance’. Therefore, the employment of *utterance* as my unit of analysis enabled the responses beyond the infant — peer initial exchange to be captured and subsequently analysed qualitatively. Images of infant — peer intersubjective interactions were also a qualitative feature of this analysis. Images were digitally drawn using an Adobe Photoshop drawing software package.

In addition, the body positioning of teachers when they engaged within infant — peer relationships was coded qualitatively. The reason for this was to determine if there was a correlation between teacher engagement and body positioning, and if teachers’ body language in its many forms was central to infant intersubjective experience like the embodied language of peers.

3.4.2 Dialogic approach to *utterance*

A dialogic approach to *utterance* as the unit of analysis enabled consideration of all forms of language as they occurred in dialogue (Junefelt, 2011). From a dialogic viewpoint *utterance* is posited as more than the language form itself, central to a dialogic analysis is the response that language forms generate in an ‘other’ — their orientation and response as an *event-of-being* in social exchange (White et al., 2015). Therefore, a dialogic approach to *utterance* is determined not only by forms of language that are employed but by their response in the intersubjective event. As such, *utterance* as an answerable act meant analysis considered infant-peer social exchange as a peer group not as individuals. Similarly, when teachers engaged in the social exchange, analysis considered the events as they unfolded as a peer group not as individuals.

3.4.3 Video data coding

Bakhtin never specified coding but he did advocate for an ‘architectronic’ which meant breaking language down into form (what it looks like) and content (ie meaning). The connection between architectronic and answerability is that they:

“...encompass the principle subject of the ‘work’, namely the answerability we have for our unique place in existence and the means by which we relate that uniqueness to the rest of the world which is other to it. Bakhtin assumes that each of us is without an alibi in existence”. (Clark & Holquist, 1984, p. 64)

The 163 minutes of video recording was made up of 2 video tracks, one track was video footage of the four month old primary infant and the second video track was footage of the 10 month old primary infant. When coding the younger infant’s footage the older infant was coded as a peer and vice versa in the older infant’s video footage. The intersubjective interactions of both primary infants with four other infant peers were also coded.

Although it was time consuming coding the four different points of view of the one moment in time, made possible with the polyphonic video footage (White, 2009a), enabled a more in depth analysis because you could visually *see* more of what was happening in the dialogic space. Multiple viewings of the footage were

necessary in order to code the embodied language of infants and peers as viewed through their visual field screens during observed intersubjective interactions. Intersubjective events were determined by the intersection of the infant and peer screens or when a non ‘camhat’ wearing infant or toddler peer entered the visual field of a primary infant. Similarly, when teachers engaged, what was noticed through their visual fields was also coded in relation to their engagement with infants and peers in tandem with what was seen through the infant lenses at that moment in time.

Utterance as my unit of analysis meant that only intersubjective events were coded for analysis, determined by the intersecting infant and peer screens. In order to analyse the nature of infant—peer intersubjective experience I initially created 12 primary codes based on infant and peer initiations and responses for each event. Of these 12 primary codes 4 were employed to capture initiations and responses of the 4 month old and 10 month old primary infants: *infant to peer initiation*, *peer to infant response*, *peer to infant initiation*, *infant to peer response* (see Table 1).

Table 1

Primary infant and peer initiation and response codes and definitions

Code	Definition
Infant to peer initiation	Primary infant initiates intersubjective interaction with primary peer.
Peer to infant initiation	Primary peer initiates intersubjective interaction with primary infant.
Peer to infant response	Primary peer offers response to primary infant initiation.
Infant to peer response	Primary infant offers response to primary peer initiation.

In addition, 8 of the 12 primary codes were used to classify the initiations and responses of the other peers: *infant to peerother initiation*, *peerother to infant response*, *peerother to infant initiation* and *infant to peerother response*, *peer to peerother initiation*, *peerother to peer response*, *peerother to peer initiation*, and

peer to peerother response (see Table 2). This level of detail was necessary in order to code infant and peer dyadic and triadic interactions.

Table 2

'Other' peer initiation and response codes and definitions

Code	Definition
Infant to peerother initiation	Infant initiates intersubjective interaction with peer who is not a primary infant.
Peerother to infant initiation	Peer who is not a primary infant initiates intersubjective interaction with primary infant.
Peer to peerother initiation	Primary peer initiates intersubjective interaction with peer who is not a primary infant.
Peerother to peer initiation	Peer who is not a primary infant initiates intersubjective interaction with primary peer.
Peerother to infant response	Peer who is not a primary infant offers response to primary infant initiation.
Infant to peerother response	Primary infant offers response to peer who is not a primary infant initiation.
Peerother to peer response	Peer who is not a primary infant offers response to primary peer initiation.
Peer to peerother response	Primary peer offers response to peer who is not a primary infant initiation.

In order to analyse infant language within intersubjective experiences it was necessary to ascertain what forms of language infants and peers were employing in their interactions. The classification of language forms resulted in 8 subsequent categories being created. The language form categories were: Gaze, watch, sounds, touch body of other, smile, use of objects, moves toward other and moves arms, hands, legs and feet (see Table 3 for language form definitions). Language form categories were not pre-determined; they were generated as part of the process of coding. Language forms were coded based on what could be seen through the visual fields of participants in tandem with the researcher's lens.

Table 3

Language form codes and definitions

Code	Definition
Gaze	Sustained mutual eye-to-eye contact.
Watch	One way look by one person to the other but with no reciprocated eye-to-eye contact.
Sounds	Vocal noises, including crying and laughing.
Touch body of other	The use of hands, feet or the body to make contact with the other.
Movement of the arms, hands, legs and feet	Movement such as gesturing, waving, reaching with the arms, hands, legs and/or feet.
Smile	Facial movement involving upturned corners of the mouth.
Use of objects	Offers or receives object from the other.
Moves toward other	The orientation of one's body toward the other.

In the present study I was able to capture the duration of infant and peer intersubjective experience between each infant—peer dyadic and triadic events. This was achieved by coding from the commencement of an initiation until either infant or peer(s) ceased responding to the ‘other’, for example the infant’s attention was drawn to ‘others’ in the room or the teacher engaged by ceasing the interaction. In coding the duration of each event it was apparent that interactions were either *brief*, of *longer* duration or *connected*. I therefore developed the coding design further to capture these interaction events. This is important to a Bakhtinian methodological approach as “dialogues are not always “integrated into one unified context” (Volosinov, 1973, p. 116), dialogues can take place over intervals of time and may be interpreted outside of a single exchange” (White et

al., 2015, p. 170). This was achieved in the context of my thesis by employing Bakhtin’s notion of speech genres (see section 3.1.1 for an explanation of genre).

Bakhtin (1986) explains words in utterances are often constructed from other utterances that are related to the speaker’s words in “genre, that is in theme, composition, or style” (p. 87). Therefore, I analysed each event in more depth qualitatively by looking at how the body was being used as a form of language (form) alongside its intended purpose (content). Consequently, three genres were generated out of the data in relation to the infant — peer intersubjective interaction events they were *fleeting*, *elongated* and *connected*:

- i.) *Fleeting* genre definition: brief intersubjective moments with the intended purpose of establishing intersubjectivity. Duration of interaction was less than 20 seconds.
- ii.) *Elongated* genre definition: longer intersubjective moments with the intended purpose of extending intersubjectivity. Duration of interaction was 20 seconds or more.
- iii.) *Connected* genre definition: a combination of *fleeting* and *elongated* genre events which collectively form a wider collective event in time.

These genres are significant to my analysis because their “thematic content, style and compositional structure” are integral aspects that form the utterance as a whole (Bakhtin, 1986, p. 60). Therefore, in relation to my thesis, the utterances of the infant analysed in tandem with those of the peer (and the teacher when she engages) make up the “whole of the utterance” (Bakhtin, 1986, p. 60). Infant — peer intersubjective events were each coded congruent to their respective interaction genre either: *fleeting*; *elongated*; or *connected*.

The teacher’s engagement within these intersubjective interaction events was analysed by creating 1 primary code: *teacher engagement* (see Table 4).

Table 4

Teacher engagement code and definition

Teacher engagement	Teacher engages within the intersubjective interactions that take place between infants and their peers.
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In my analysis it quickly became apparent that there were 2 genres at play in relation to the teacher's role when she engaged with infants and peers, which either opened up' (*sustained*) or 'shut down' (*restrained*) dialogue, within the intersubjective interaction. This was significant to my data analysis because it provided a way to gain an understanding of the teacher's influence on the infant and peer intersubjective experience. As my unit of analysis was *utterance*, coding of the interactions employed by teachers did not relate to infants or peers as individuals but as a peer group.

- i.) *Sustained* genre definition: Teachers are supportive and promote infant — peer intersubjective experiences in which dialogue is 'opened up'.
- ii.) *Restrained* genre definition: Teachers 'shut down' infant — peer intersubjective experiences.

Simultaneous access to the visual fields of participants enabled analysis of infant — peer intersubjective events in terms of: language forms that were employed by infants and peers during intersubjective experiences; the kinds of intersubjective relations that were taking place between infants and peers; and teacher engagement within these intersubjective experiences.

3.5 Research questions

A dialogic approach enabled investigation to consider the social experience of infant and peer language, its meaning, forms and how they expressed and demonstrated intersubjectivity in the dialogic 'space', based on a Bakhtinian view that knowing becomes possible in the relationship that takes place in the *event-of-being* between self and other.

For the purposes of this thesis my research questions are:

- i. What is the intersubjective experience for infants and peers in early childhood care and education?
- ii. How does the teacher engage in infant—peer intersubjective events?

3.6 Summary

In this chapter I have provided a rationale for a dialogic approach to the exploration of infant and peer intersubjective experiences that take place in infant

and peer interactions. In addition I have provided a rationale for the exploration of teacher engagement within these interactions. I have argued that the employment of a Bakhtinian dialogic approach is a key means of interrogating infant and peer subjectivity because of the potential for infants to be recognised as intersubjective agents in their relationships with peers and with teachers.

The following chapter explores the relations that take place between infants and peers as they interact intersubjectively.

Chapter Four

Results and Discussion:

Infant and Peer Intersubjective Experience

In the previous chapter I presented the methodological framework to the study. This chapter presents the results through a careful analysis of intersubjectivity utilising the unit of analysis of *utterance*. In this dialogic analysis, initiations in tandem with the responses they generate make up the “whole of the utterance” (Bakhtin, 1986, p. 60). Therefore, infant and peer initiated events and how infants and peers were answerable (responded) are presented in the chapter that follows which foregrounds the infant — peer intersubjective experience. This responds to my first research question which is: *What is the intersubjective experience for infants and peers in early childhood care and education?* In the subsequent chapter I present my findings concerning the role of the teacher in engaging with infants in their peer intersubjective relationships.

Three primary types of infant — peer intersubjective interactions were generated out of my unit of analysis. Evident in these three types of interactions was the orientation of the infant or peer toward intersubjective relations that were characteristically either brief (*fleeting*) or longer (*elongated*) in duration or a combination of these two interaction genres (*connected*) (see Table 5).

Table 5

Fleeting, elongated and connected genre definitions.

<i>Fleeting interaction genre definition:</i> brief intersubjective moments with the intended purpose of establishing intersubjectivity. Duration of interaction was less than 20 seconds.
<i>Elongated interaction genre definition:</i> longer intersubjective moments with the intended purpose of extending intersubjectivity. Duration of interaction was 20 seconds or more.
<i>Connected interaction genre definition:</i> a combination of <i>fleeting</i> and <i>elongated</i> genre events which collectively form a wider collective event in time.

In the chapter that follows the findings are presented in relation to the three types of infant and peer intersubjective interactions — *fleeting*, *elongated*, and *connected*. The first two sections present the findings specifically in relation to

infant and peer intersubjective experiences. The third section presents findings in relation to infant — peer experiences, in addition to findings that connect the teacher to these experiences. Quantitative analysis of the language employed by infants and peers are followed by qualitative analysis. Each section presents examples in the form of either narratives or a narrative in combination with an image as evidence of the intersubjective experiences taking place between infants and peers. Overall, there were 53 observed infant and peer intersubjective interactions. Of these, *fleeting* interactions (60%, 32) were the most frequent when compared to *elongated* interactions (40%, 21). There were 10 *connected* interaction events.

4.1 Fleeting genre

Fleeting genre events were characterised by their brief duration of interaction, less than 20 seconds. On average the duration for infant — peer *fleeting* events was 8.7 seconds. *Fleeting* genre events were either isolated events, antecedents to an *elongated* event, or occurred within an *elongated* interaction as a means for the infant or peer to maintain the interaction. Additionally, *fleeting* interactions were often connected across time and space to an event later in time (see section 4.3.1 below).

The ability of infants and peers to engage *fleetingly* for the purpose of achieving reciprocity, mutual intention, affect and shared understandings was evident in *fleeting* interactions; these features are a central component of intersubjectivity according to Selby and Bradley (2003). Although these social experiences were *fleeting* they were not hurried, language was expressed in synchrony with the other in rhythmical, alternating patterns of attuned engagement. In addition, infants respected the initiative of their peer; this was evident by the way each gave the other time to respond during these *fleeting* joint events. White et al., (2015), expanded on Trevarthen's theories of infant intersubjectivity (1979), by suggesting synchronous interaction is not only a primary goal of infant social encounter in mother-infant dyads but is also evident in teacher-infant dialogue. The findings of the present study develop this further to suggest that synchronous interaction is also a feature of infant — peer intersubjective interactions in early childhood care and education contexts. Trevarthen (1979) acknowledges the capacity of infants to invite adults “to share a dance of expressions and

excitements” (p. 347). My findings extend on this view highlighting the capacity of infants to invite and ‘tune in’ to the communicative intentions of their peers.

Infants’ embodied intersubjective language in *fleeting* interactions was employed in what seemed to be moments of either, acknowledging, greeting, affirming, recognising, inviting accepting or empowering their peer. Figure 1 illustrates the frequency of language forms employed by infants and peers in the initial exchange of a *fleeting* interaction.

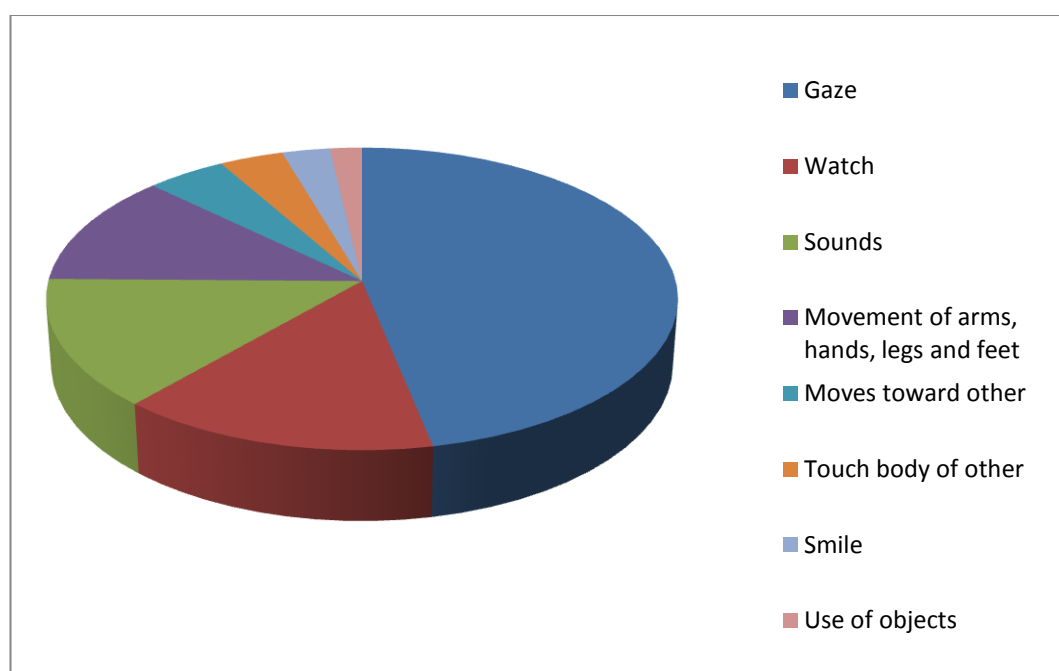


Figure 1. Language forms employed by infants and peers during *fleeting* interactions.

The language form *gaze*, defined as “sustained mutual eye to eye contact” (White et al., in press, p. 10), was a prominent feature of the *fleeting* genre. Of the 32 *fleeting* interactions *gaze* was a feature of infant and peer dialogue during 83% (27) of events. Infants appeared to establish a mutual connection when they shared a gaze with their peers. Qualitative analysis highlighted sounds and movement of the arms, hands, legs or feet as other effective embodied forms of language employed by infants and peers to enter into and sustain dialogue with one another as the following narrative demonstrates:

Lola (Peer) watches Harrison (infant) from across the room. The teacher and another peer are interacting close to Harrison. The teacher touches Harrison’s shoulder, Lola is watching Harrison.

The other peer starts to cry. The teacher responds by picking up the other peer who is crying. Harrison watches the teacher hold the other peer. Lola continues to watch Harrison. Harrison turns to look at Lola and they share a mutual gaze. Lola then responds by making sounds as she continues to hold Harrison in her gaze, and moves her fingers in a fluttering motion. Harrison reaches toward Lola. At this moment Lola reaches with her arm above her head toward a bright light bulb, she looks upward at the light bulb which is switched on. Lola then looks toward the teacher who is still holding the other peer. Lola then turns to face Harrison and once again they gaze.

This narrative provides evidence of the capacity for infants to interact with peers from a distance. Lola's interest in Harrison is evident in the way she watches him from across the room. Intersubjectivity is established with Lola and Harrison's mutual gaze. Although it cannot be known with any certainty, this fleeting moment suggests Lola who had been watching Harrison interact with his teacher, appeared 'tuned in' to his loss of a conversation partner and her response seemed to be intended as a form of invitation to interact. Lola's gesture toward the light bulb suggests she was drawing Harrison's attention to an object in the room which possibly had meaning to both of them.

Analysis suggests, that Lola 'opened up' a dialogic space through this dialogue that was filled with potential learning possibilities. Harrison's response demonstrated his acceptance to engage in interaction with Lola by reaching toward her and mutually engaging in a gaze. This *fleeting* interaction provided evidence of infants' abilities to engage in moments of joint attention with their peers. This was demonstrated by Lola when she drew Harrison's attention to the light bulb above her head.

Analysis suggests every day social exchanges such as greetings or inviting peers into dialogue take place for infants in *fleeting* peer interactions. This finding concurs with McGaha et al's., (2011) assertion that infants and peers communicate by employing gaze, sounds, smiles, reaching, touching and watching. I concur with Engdahl (2012) that infants' and peers' greetings, acknowledgements, mutual recognitions and invitations to socially engage are

evidenced in the smiles and other forms of embodied language that infants intentionally employ to interact with their peer.

My analysis further suggests that *gaze* is a primary form of infant — peer intersubjective language and was employed by infants for the purpose of establishing and maintaining intersubjectivity with their peers. In line with the results of Vandell and Mueller (1980) and McGaha et al., (2011) my findings illuminate gaze as a language form employed by very young infants to participate socially with peers. Similar to the infants in Selby and Bradley's (2003) study the infants in this study employed gaze, sounds and other forms of language to gain their peer's attention or maintain an interaction. *Fleeting* genre events appeared to establish and sustain intersubjectivity by connecting infant with peer evidenced in the way infants held each other's gaze and seemed 'tuned in' to the other. Degotardi and Pearson (2014) highlight how mutual participation is required by both infant and peer when they share a hug. The findings of the present study suggest this is also the case with gaze as both infant and peer demonstrate a willingness to mutually connect.

Qualitative analysis also highlighted how the mutual gaze shared between infant and peer was often preceded by either infant or peer watching the other as evidenced in the above narrative. *Watching* was interpreted as an interest on the part of the infant in their peer and an effective way to gain their peer's attention and maintain it by sharing in *fleeting gaze* relationship moments. Indeed, my findings suggest infants seek out peers by *watching*. This finding supports Engdahl's (2012) suggestion that infants monitor their peers, McGaha et al's., (2011) finding that infants responded to being watched by their peers, and Davis and Degotardi's (2014) claim that watching is an expression of interest, on the part of the infant in their peer, and an essential aspect of infant — peer relationship formation. In addition, my finding extends on previous findings by White et al., (in press) that *watching* was an effective strategy employed by peers to negotiate their way into dialogue with others. Therefore, *watching*, as a key feature of *fleeting* events, suggests that these social encounters, although brief, are vital to the infant's developing understanding of their social world.

Qualitative analysis highlighted the ability of infants to actively engage with each other regardless of their proximity as a feature of infant — peer intersubjective *fleeting* interaction experience (evidenced in the narrative above). Highlighting the ability of infants to relate with one another at a distance extends on Recchia and Dvorakova's (2012) claim that a preliminary sign of early friendships between infants and peers is being in the same proximity to one another. According to Degotardi and Pearson (2014) children “explore and construct understandings about proximity and affection” (p. 92) in toddlerhood my findings suggest this is taking place much earlier in this early years setting — in infancy. Furthermore, Anjos et al., (2004, as cited in Rossetti-Ferreira et al., 2011, p. 80) highlight the capacity for infants to regulate their peers' behaviours from a distance. This finding suggests that infants and peers although developmentally constrained in their ability to locomote, are able to engage in mutual recognition and mutual awareness regardless of their proximity to each other. This feature of *fleeting* relationship events is consistent with the findings of Anjos et al., (2004, as cited in Rossetti-Ferreira et al., 2011) that highlighted the ability of infants to communicate with their peer partners from a distance.

The intention of infants and peers to engage in a mutual experience with one another was evident in the way they entered into an interaction by drawing the 'other' into dialogue with body language and then reaching or orienting their body toward the 'other' or an object. These intentions to socially engage were reciprocated by infants and peers in a similar way, each infant acknowledging the intention of the 'other' by responding with embodied language in tandem with an orientation toward the 'other'. The following narrative and two images demonstrate a *fleeting* event. Both infant and peer in this exchange appeared to be attuned to the 'other'. This attunement was represented in the mutual connectedness of the engagement as illustrated in the visual fields of each infant:

Lola (infant) sits on her teacher's lap, she watches Harrison (peer) who is positioned on the floor holding a flax flower. Lola leans forward, orienting her body toward Harrison. Harrison responds by turning his face toward Lola. Both Lola and Harrison establish intersubjectivity through their shared gaze. Lola and Harrison each move their body toward the other. They continue to embrace one

another in their gaze. Lola responds with a smile (as evidenced in Image 2), makes sounds and moves the fingers of her hand in a fluttering motion. This response is reciprocated by Harrison in the form of a smile as he moves his feet and reaches out with an extended arm toward Lola. Both infants continue to gaze at one another.

Image 2. *Fleeting moment from Harrison's visual field screen.*



Image 3. *Fleeting* moment from Lola's visual field screen.



Fleeting relations although short in duration enabled the infant and peer to see the point of view of the ‘other’ through a shared focus of understanding. Images 2 and 3 demonstrate the responsiveness of both infants to each other. Evident in the view of Lola's visual field is Harrison holding a flax flower which he had been playing with prior to engaging with Lola. Harrison directed his attention from the object to Lola — she had his total attention. I suggest that the intersubjective connectedness of the *gaze* took precedence over the object as both infants interacted in mutual engagement and were totally responsive and attuned to one another.

Qualitative analysis highlighted the ability of infants and peers to respond to one another in ways that suggested their relationships were developing through the shared understandings that were being constructed in these *fleeting* events — joy expressed in a smile, happiness through laughter or excitement through the waving of hands and feet. *Fleeting* moments provided opportunities for infants to socially connect with peers as they formed an understanding of who they are through their interactions with each other. This is evidenced in how Lola (see

Image 2) responded to Harrison by smiling. Harrison (see Image 3) may have felt a sense of acceptance that he is liked through this recognition or perhaps that he makes Lola feel happy or loved. Harrison's interest in Lola, through his attentive embodied language may have been interpreted by Lola in a way that suggests to her she is interesting. Therefore, the relationships experienced by infants and peers in *fleeting* intersubjective interactions, although short in duration, have the potential to impact on an infant's social understanding and sense of well-being.

Analysis of these events suggests infant — peer *fleeting* interactions are intentional communicative events. The results suggest *fleeting* interactions are crucial to the formation of infant — peer intersubjectivity as they established a shared understanding, focus, knowledge and joint attention between infants and peers. This finding extends Bateson's (1979) assertion that brief moments are pivotal aspects of jointly sustained interactions between adult and infant. The present findings claim that brief *fleeting* moments are also integral parts of infant and peer jointly sustained experiences and that these events provide an important context for learning because of the potential they offer for infants and peers to connect and establish shared understanding in conversations. In line with Bateson's (1979) claims, *fleeting* joint attention interaction events are indicative of the infants' ability to engage in conversation.

My findings suggest that the form shaping experience of being in dialogue with an 'other' takes place in *fleeting* moments and suggests that intersubjective experiences provide opportunities for infants and peers to develop friendships with one another. This finding concurs with Davis and Degotardi's (2014) assertion that infants come to know each other through experiences that generate shared understandings and supports Engdahl's (2012) claims that infants develop friendships by getting to know their peer through mutual recognition.

My findings suggest that by establishing a connection with their peer, infants in the *fleeting* interactions appeared to 'open up' a dialogic space for communication to occur. Taking a similar view as other authors (for example Borelli, 2007; Braten, 1998; Trevarthen, 1998; Rommetveit, 1998) this finding asserts that the purpose of intersubjectivity is to achieve connectedness with an 'other'. Although, the exact intention of these communicative acts cannot be known for

certain, the findings of the present study suggest, the purpose of this connection was for infants to express an intention to engage their peer in dialogue, perhaps to find common ground from which a relationship was able to develop.

This finding concurs with Bakhtin's (1986) assertion that if different voices belonging to different individuals can even slightly share a mutual understanding they will "inevitably enter into dialogic relations with one another (Bakhtin, 1986, p. 115)". My results provide evidence that infants' intersubjective connections in the *fleeting* interactions are evidence of their capacity to interact dialogically. This assertion suggests infant — peer dialogic relations are indeed intersubjective. From analysis undertaken in previous studies great emphasis is placed on sustained interactions in early childhood contexts (Meade, Robinson, Smorti, Stuart, & Williamson, 2012; Siraj-Blatchford, 2010 as cited in White et al., 2015, p. 162). However, my findings suggest that *fleeting* social interactions between infants and peers are also a central feature of infant — peer intersubjective experiences. Therefore, I pose the idea that infant and peer intersubjective experiences may not be determined merely by the length of an exchange, but by their potential to generate a response in another that 'opens up' a dialogic space through relating to one another dialogically.

4.2 Elongated genre

In contrast to the brief nature of *fleeting* moments *elongated* genre events were characterised by their extended duration of interaction, more than 20 seconds. On average the duration for these infant — peer *elongated* events was 38.9 seconds. *Elongated* genre events were either isolated events or occurred in tandem with *fleeting* interactions as a component of a wider more 'connected-up' intersubjective experience. An analysis of *elongated* interaction events made it possible to consider infant and peer intersubjective experiences beyond the *fleeting* moments. Characteristic of *elongated* interactions was the potential for infants to 'open up' dialogic spaces for the negotiation, confrontation and exploration of language with peers in ways that sustained intersubjective relations or offered potential for alteric experiences. The intersubjective experience for infants and peers within *elongated* interactions provoked multiple responses

beyond the initial initiation and subsequent response exchange — what Malloch and Trevarthen (2009) describe as the ‘dance’.

The intersubjective nature of infant language did not appear to predominantly favour one form of language over another in *elongated* interaction events. Although infants and peers used a range of language forms to communicate with one another, gaze, sounds and movement of the arms, hands, legs and feet were employed more frequently than other language forms (see Figure 2). Figure 2 highlights the language forms employed by infants and peers during *elongated* interaction events.

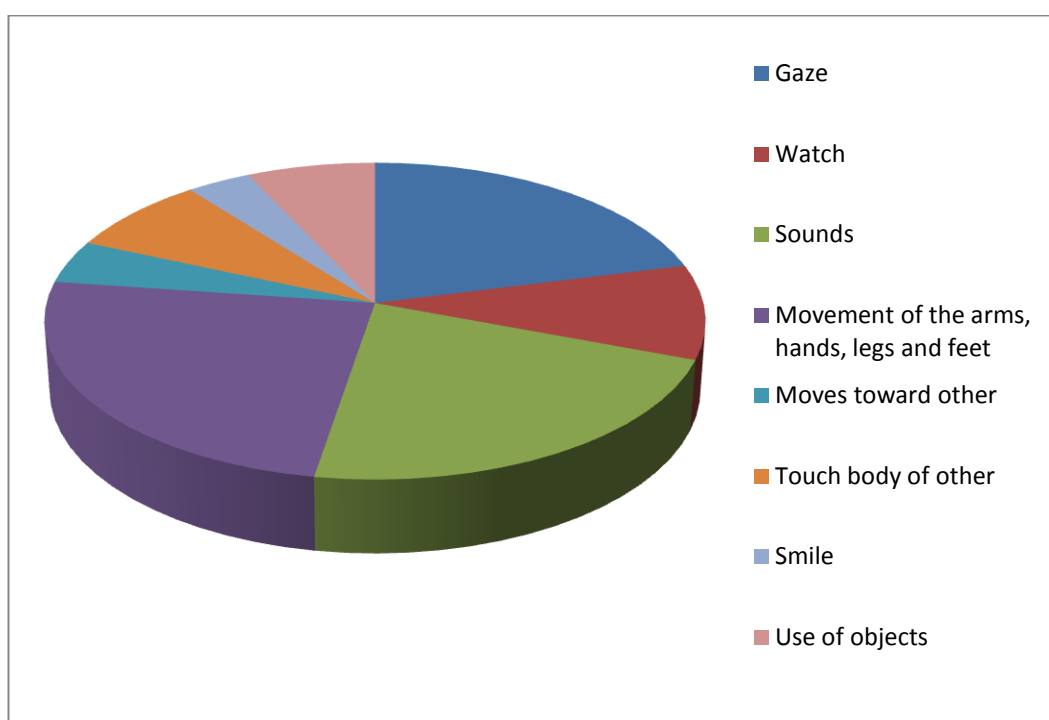


Figure 2. Language forms employed by infants and peers during *elongated* interactions.

However, language forms that were more evident in *elongated* interactions than in *fleeting* interactions were touching the body of the other, use of objects, crying and movement of the arms, hands, legs and feet. In addition qualitative analysis highlighted how *elongated* events occurred almost always when infants were in very close physical proximity to one another.

Elongated genre events not only supported the infant’s ability to sustain intersubjectivity through dialogic relations with peers but also supported learning through dialogic spaces that ‘opened up’ possibilities for alterity and the

negotiation of language in the event-of-being as evidenced in the following narrative:

Harri (peer) approaches Harrison (infant) who is positioned on the floor. Harri moves very close to Harrison and watches him. Harrison turns toward Harri and they gaze at one another. Harri moves closer to Harrison and she touches his body. Harri then offers Harrison a rainmaker toy and laughs. Harrison responds by employing a cry combined with stretching out his arms, which he then waves in tandem with his legs. Harri quickly picks up her blanket and the rainmaker toy and shuffles back on her bottom looking in the direction of the other room where the teacher is.

Harrison and Harri were in very close proximity to one another. Harri's endeavours to socially connect with Harrison through touch and the use of objects are evident in this narrative. However, Harrison's choice to respond by crying and moving his arms and legs generated a response by Harri to move away. Although it cannot be known for certain, analysis suggests Harrison employed the language form cry to alter the orientation of the dialogue as evidenced in the response generated by his peer. Harri's response to move away from Harrison suggests she may have interpreted Harrison's cry response as not wanting to socially interact with her in this way. This implies that Harrison may be learning that his voice can and does make a difference in his interaction with peers.

This narrative also exemplifies how this experience altered the way Harri negotiated dialogue with Harrison in a later *elongated* event. What eventuated in this subsequent *elongated* interaction event was rather than employing the rainmaker toy Harri approached Harrison by offering him her blanket, as a way of engaging with him intersubjectively. Learning here, occurred for both partners in the dialogue. Participation in dialogic relations provided a space for alteric points of difference, and demonstrated the capacity of the infant and peer to change the direction of the social experience from one of alterity to an intersubjective encounter through participation in the lived experience of dialogue — dissensus that eventuated in consensus. The infant and peer achieved this by exercising their agency and expressing their point-of-view evidenced in their responses to one

another, for example Harrison's crying and Harri's choice to move away and return later.

My findings indicate use of objects, touch, cry or movement of the body are more frequent sources of intersubjectivity in *elongated* interaction events. In addition, analysis suggests that the physical closeness coupled with the use of objects, touch, cry or movement of the body has the potential to 'open up' a dialogic space that supports an extended infant — peer intersubjective or alteric experience. This finding supports Davis and Degotardi's (2014) claim that objects can promote a sense of togetherness between infants and peers and often 'open up' experiences for infants and peers to reach a mutual understanding (Engdahl, 2012). This claim supports Wegerif's (2007, 2010, 2013) view that through dialogic interactions partners in dialogue 'open up' dialogic spaces as different points of view are expressed through which learners can engage in 'possibility thinking'. In the narrative above an openness towards 'others' is evident as both Harrison and Harri are open to the perspective of the 'other', evidenced in how each freely expressed their point of view. My findings indicate that *elongated* intersubjective relationships are dialogic in nature and promote opportunities for infants to explore, confront and negotiate different ways of being in dialogue with peers. This finding confirms my earlier claim that infant — peer dialogic relations are intersubjective.

Qualitative analysis highlighted how *elongated* interactions were intentional acts of engagement evidenced in the way infants' and peers' interactions were not only reciprocated but totally responsive and socially directed toward the other. The following narrative demonstrates the infants' capacity to not only be in synchrony with their peers' responses as the dialogue unfolded but to also be 'tuned in' to their peer, as they engaged in dialogue that was unhurried, attuned, mutual and supported a shared understanding. The infant and peer were at a distance of about 1.5 metres from each other, this *elongated* interaction event occurred over a period of 1 minute and 10 seconds:

Lola (peer) moves her body toward Harrison, they gaze at one another. Harrison responds by *reaching* toward Lola. This *elongated* genre event unfolds as Lola employs her body to move

across the floor toward Harrison. Reaching toward Harrison with her left arm, making sounds as they gaze, Lola moves closer to Harrison. Responding by reaching with his right arm Harrison continues to gaze at Lola. Reaching with her right arm Lola is closer still to Harrison. This synchronous pattern of engagement with their arms continues until Harrison and Lola are in very close proximity to each other. Harrison responds to Lola by clasping his hands together, moving them toward his mouth as he makes sounds. Lola responds by moving her whole body forward, reaching with her arm extended, continuing to share their *gaze*, they move their arms and bodies in synchrony one more time until they finally connect.

Image 4. Totally responsive and ‘tuned in’.



This event illuminates the body as a primary feature of the *elongated* interaction genre and another source of intersubjectivity. The body was employed by the infants to express their intention to interact and connect with the ‘other’. This was evidenced in how Lola physically moved her body toward Harrison and he reached with his arms. Both infants recognised themselves in the language that

was shared as they held each other in their mutual gaze, vocalised and reached in their endeavours to touch one another. Image 4 illustrates the ability of these infants to engage naturally in social conversation that was pursued by both infants as agents of their own learning evidenced in their embodied infant language. The infants experienced dialogue within a relationship that was extremely intersubjective. This was evidenced in the reciprocal and responsive language that was employed by both infants in their endeavours to connect with each other by participating in the lived experience of dialogue. The infants' intentions to engage with one another intersubjectively are evidenced in their embodied language.

My findings suggest infants and peers are active intersubjective agents capable of expressing their thoughts, feelings and values through embodied language. According to Engdahl (2012) infants have the capacity to understand each other non-verbally. Various studies report that infants' use of language forms such as touch, vocalisations and a 'look' are evidence of infants' attachments to peers (Goldschmied & Selleck, 1996; Selleck & Griffin, 1996) peer friendships (Engdahl, 2012) and intersubjective peer relations (Selby & Bradley, 2003). My findings confirm that touch, vocalisations and a 'look' are indeed intersubjective forms of language comprising *elongated* exchanges. However, my findings also highlight the point that larger movements of the body such as in the infant's physical orientation toward their peer or reaching toward one another as significant forms of intersubjectivity. This finding supports the claim of Cresswell and Teucher (2011) who propose that agency "is constituted in language and people do not primarily use language as a tool in a functional sense to be agentic. Rather, they live it" (p. 117).

4.3 Connected genre

Further analysis of infant — peer interactions suggests that intersubjective experiences were sustained and further extended when *fleeting* and *elongated* interaction genre events were combined in the social experience to form a wider *connected* genre interaction event. Analysis revealed that there were 10 *connected* events which combined *fleeting* and *elongated* genre interactions. *Fleeting* social encounters were connected to an *elongated* event either as an antecedent or as a connecting feature of intersubjective dialogue within the larger *elongated*

interaction — brief periods that were employed like intersubjective glue with the potential to sustain and extend the intersubjective experience for durations of up to 3 minutes. *Connected* genre interaction events could also be a ‘mix’ of either multiple *fleeting* interactions or multiple *elongated* interactions.

The social nature of infant and peer interaction beyond the infant and peer dyad is highlighted in the following image and narrative of a *connected* event which was initiated by 4 month old Harrison who established intersubjectivity with a *gaze*. Initially this infant — peer interaction was a dyadic experience between Harrison and Lola until an ‘other’ peer Grace approached and was accepted as a partner in the dialogue. This event which occurred over a period of 2 minutes is an example of how infants established and sustained intersubjectivity in their relations with each other by mixing *fleeting* and *elongated* interactions:

Harrison (infant) is positioned on his teacher’s lap. He orients his body toward Lola (peer). Harrison waves his arms and legs as he and Lola gaze at one another. Lola responds by extending her arm outward toward Harrison, expressing her intention to share a toy. However, Harrison is out of Lola’s reach and is not able to accept the artefact. Lola continues interacting with Harrison by employing a combination of language forms (medium level sounds, smile, laugh and gaze) which successfully hold Harrison’s gaze. Both infants notice Grace (another peer) crawling toward them. Harrison glances at Grace and then looks back at Lola employing low level sounds, waving his arms and legs, smiling and gazing in an effort to regain Lola’s attention. Lola responds with a gaze. Harrison invites Grace into the dialogue by reaching toward her making sounds, smiling and gazing. Grace responds with a gaze, turns to Lola and gazes at her. Lola gazes back. Grace moves closer to the peer group picks up a toy looks at it, Lola watches Grace. Harrison responds with low level sounds as he rocks from side to side, mutually sharing a gaze with Grace. Grace turns to Lola and they share a gaze as Harrison watches on. Grace then turns to Harrison and responds with a gaze as she moves toward him, offers him a

toy while at the same time waves her arms and legs and makes sounds.

Image 5. Beyond the one to one infant — peer social encounter.



It is my interpretation that these infants experienced social interaction that was humorous, stimulating and enjoyable as evidenced in their laughter, tone and pitch of their voices, movement of their arms, and smiles in these types of intersubjective events. These infants demonstrated their capacity to engage with one another intersubjectively in dialogue that was reciprocated, responsive and attentive to each partner in this ‘conversation’. This was evidenced in the way the infants invited an ‘other’ peer into their shared intersubjective experience by holding up toys, gazing or reaching toward their peer, ‘opening up’ dialogue that promoted dialogic relations. Evidence of infants’ strategic employment of language was reflected in the combinations of language forms they used for the purpose of establishing and sustaining intersubjectivity within and beyond the infant – peer dyad.

My results suggest that dialogic relations are further promoted and intersubjectivity is sustained when infant and peer social encounters are

comprised of *fleeting* and *elongated* interactions. By mixing genres (Bakhtin, 1986) dialogic spaces were ‘opened up’ through which infants were able to socially engage in ways that offered these infants the potential to express language freely with one another. This finding concurs with Bakhtin’s (1986) contention that “the better our command of genres...the more perfectly we implement our free speech plan” (p. 80). I contend that infants drew upon different speech genres to competently engage in intersubjective dialogue with their peers.

In addition analysis revealed that *fleeting* moments are essential connectors for intersubjective dialogue because of their potential to establish intersubjectivity and keep the dialogue connected and flowing. In these *connected* events *fleeting* moments seemed pivotal for the purpose of including and accepting others into the shared dialogue in a kind of ‘greet and meet’ ritual. The findings concur with Engdahl (2012) who claim that for infants getting to know and recognising peers is one way of building friendships. My findings further indicate that these intersubjective *connected* experiences are dialogic spaces where infants are gaining a sense of knowing how to relate to others socially by drawing on different genre as they learn how to communicate with others in this social sphere of infinite potentialities.

This finding supports Selby and Bradley’s (2003) observation of infant and peer triadic interactions in which they found infant—peer group interactions involved reciprocity, mutual intention, affect and mutual understandings. The findings suggest that the dialogic space that ‘opened up’ for these three infants in their relationship with one another was characterised by mutual recognition evidenced in the way infants each gave one another time to respond and acknowledged the other through their embodied language. In addition the findings indicate that infants are showing signs of a connected up relatedness with peers earlier than 9 months. Extending on the findings of Murray (2014) and Trevarthen (1979) this was evident in the way the infants in this study engaged in infant reciprocity with one another and drew others’ attention to something by embodied language such as orienting the body and reaching rather than necessarily pointing (Murray, 2014).

4.3.1 The connectivity of the teacher

An integral part of these connected intersubjective infant — peer interaction events was the direct or indirect presence of the teacher, who appeared to be implicated in the dialogue regardless of whether she was present or not. This was evident in the way the *connected* genre interactions involved infants making connections across time and space. Characteristic of this genre was how infants related or connected *fleeting* and *elongated* events that had occurred in different social spaces together. Infants demonstrated that they were not only competent at communicating and relating to peers intersubjectively in the moment but that they were also capable of continuing or ‘opening up’ dialogue’ later in time.

The following narrative is an example of the *connected* genre, the event comprised of a *fleeting* moment which transpired over a period of 4 seconds in tandem with an *elongated* event of 73 seconds, later in time:

The teacher is positioned on the floor beside Lola (infant). Zoe (peer) approaches and watches the teacher interact with Lola. “Hey Zoe” says the teacher, *touching* Zoe’s hand, “Where’s Lola?” Zoe looks directly at Lola and they *gaze* at one other. Zoe then lifts up her shirt revealing her stomach. The teacher gently touches Zoe’s stomach with her finger, “ooo, puku”. Zoe walks into the other room and reveals her stomach to another teacher.

(Five minutes later Zoe returns, the teacher was not present)

“Where’s Lola, hiiee Lola” says Zoe she shares a mutual *gaze with* Lola. Zoe then crawls toward where Lola is sitting, in the same place but on her own and they interact by drawing upon a flax basket as a source of intersubjectivity.

The above narrative demonstrates how the teacher is recognisable in the language that Zoe used and how it was expressed. This language was previously used by the teacher in a different context, at a different time but was connected to the present context through Zoe’s interaction with Lola. I interpreted Zoe’s initiation as a response connected to the earlier event through the teacher’s words which were recognisable in Zoe’s words. I suggest that Lola and Zoe had established intersubjectivity earlier with a *fleeting gaze* and this provided a connection to

enter into dialogue with each other on their terms when the teacher was not physically present.

Analysis indicates that the teacher is implicated in the infant — peer dialogue regardless of whether she is present or not. This finding highlights how connections between ‘voices’ of past experiences with those of present and future experiences, when considered as the whole of the utterance have the potential to form and alter participants in the social encounter. This finding concurs with Junefelt’s (2011) view that intersubjectivity provides a foundation for dialogic exchange and suggests that the teacher ‘opened up’ a dialogic space through which infant and peer established intersubjectivity that was sustained in their social encounter later in time. How people interpret the intersubjective world from a dialogic viewpoint is based upon their previous experiences, present experiences and anticipated future experiences with ‘*others*’ (Bakhtin, 1986).

Employing language in a current event that had been ‘previously owned’ by a peer or teacher in a different event was characteristic of the *connected* genre as the following narrative and image demonstrate:

Zoe (peer) is sitting beside Lola (infant). Harrison is sitting on the teacher’s knee. Zoe shuffles on her knees very close to Lola and gently rubs her back. Lola lifts her hand in response and moves her fingers in a fluttering motion as she gazes at Harrison.

Image 6. *Connected across time.*



This event was related to an earlier interactional experience in which both Lola and Zoe had participated the previous day. In the earlier event the teacher was comforting a doll by rubbing the doll's back gently with her hand while speaking with a soft tone of voice (for further explanation see White et al., 2013).

My findings highlight the interconnectedness of people, places and things in dialogic spaces through which the meaning of language is recognised beyond infant — peer dyads. My findings suggest that infants' social interactions with their peers or with teachers as a wider group shape the way infants interact with peers later in time. This claim confirms the findings of White (2009a) and White et al., (2015) that past experiences provide a source of intersubjectivity for infants' present experiences. I suggest that learning for infant and peer occurs in the infants' negotiation of when to use the language, in which context and its relatedness to 'others' across time and space. This finding supports Bernard-Donals (1994) interpretation of Bakhtinian intersubjectivity which emphasises the space between utterances as the place that a "negotiation of the context" of language occurs (p.37).

My findings suggest that relating with others by participating in the everyday lived experiences of dialogue is how infants learn to relate to the experiences of others. Affection is an aspect of mutual relationships (Howes, 1983, 1988). This finding suggests that touch is part of the infant — peer social culture of getting to know someone and forming friendships. The findings support Cresswell and Teucher's (2011) claims in relation to participation and suggest that emotion is an aspect of the intersubjective experience for infants in relationship with peers. This is evidenced in the expression of emotion via embodied language through co-participation and co-experience in the emotion of another. Bakhtin (1986) viewed language as connected to embodied emotional-volitional tone and emotional experience, like cognitive experience, as a dialogic, inseparable, whole" (White, 2013, p. 64). Braten (1996) highlights a companion space that enables the infant to offer help, comfort or at times alleviate distress in another. The findings suggest that it is the dialogic space that offers possibilities for the infant to develop relationships through co-being with an 'other' and supports the assertion of (Wegerif, 2013) that dialogic relationships foster openness towards others, towards others' perspectives, recognition of others and give agency to infants.

4.4 Summary

The findings in this chapter suggest that when infants relate to peers in an early childhood care and education setting their interactions may be *fleeting, elongated or connected*. Infant — peer intersubjective experiences are characterised by their unhurried, synchronous, attuned engagement that supported a shared understanding. Moreover, infants and peers are active intersubjective agents who draw upon embodied language to express their thoughts, feelings and values in intentional communicative acts. Findings further suggest that infants and peers although developmentally constrained in their ability to locomote, are able to interact intersubjectively regardless of their proximity to one another.

Infant and peer intersubjective experiences 'open up' dialogic spaces which are filled with potential learning possibilities that support intersubjectivity or alterity. The dialogic space that is 'opened up' by infants through the *event-of-being* in dialogue with peers, has the capacity to affirm and empower, depending on the response generated in the 'other' through this interaction. The findings also

highlighted how infant — peer dialogic relations are intersubjective. The final section highlighted the connectedness of the dialogic space of an early childhood care and education setting and claimed that the teacher whether present or not is always implicated in the interactions that take place between infants and peers.

The following chapter explores how the teacher engages in the intersubjective interactions that take place between infants and peers in an early childhood care and education context.

Chapter Five

Results and Discussion:

Teacher Engagement in Infant and Peer Intersubjective Events

In the previous chapter I presented and discussed my findings in relation to infant and peer intersubjective experience. I established that infants are indeed having *fleeting*, *elongated* and *connected* intersubjective dialogue and alluded to the fact that these intersubjective dialogic relationships are implicated by the presence of the teacher, which will be explored further in this chapter.

Sensitive, responsive caregiving in tandem with a dialogic approach to pedagogy, that recognises the significance of infant contributions as integral to teacher engagement or response, is paramount, in order to promote reciprocity in interaction and achieve “intersubjective attunement” (Dalli et al., 2011, p. 3). In this chapter I will be adopting an approach that considers the events in the dialogic space beyond the infant peer dyad. This will be achieved by analysing the infant-peer intersubjective events that are responded to by the teacher through her engagement in the infant — peer intersubjective interactions.

For the purposes of this thesis, and in response to my research question *how does the teacher engage in infant-peer intersubjective events*, this chapter will adopt an approach that considers the event ‘beyond the dyad’ and into the wider dialogic space, by analysing the infant-peer intersubjective events that are responded to by the teacher through her engagement. Therefore analysis will focus on the intersubjective events that take place between infant, peer and teacher as a peer group not individuals.

Teacher engagement appeared to orient either towards engagement that either ‘shut down’ (*restrained*) or ‘opened up’ (*sustained*) intersubjective interactions between infants and peers. The findings are initially introduced by presenting an overview of the teacher’s engagement within infant — peer intersubjective interactions. The following section presents the findings in relation to the teacher’s presence in the infant — peer *connected* interaction events. This section

is followed by two subsequent sections which present the analysis in relation to the *restrained* and *sustained* teacher engagement genres.

Quantitative analysis of the language employed by infants and peers are followed by the qualitative analysis. Each section presents examples in the form of either narratives or a narrative in combination with an image as evidence of the teacher engagement unfolding within these intersubjective interactions taking place between infants and peers.

5.1 Teacher engagement within infant – peer intersubjective interactions.

Out of 53 infant — peer intersubjective interactions teachers were observed engaging on 31 occasions. When teachers engaged in the interactions between infant and peer they were more likely to *sustain* (20) rather than *restrain* (11) interactions.

Although both infants were constrained to some extent by their locomotion capabilities there were four observed events when infants, who were being held by the teacher, communicated to the teacher their intention to enter into dialogue with a peer. Qualitative analysis highlighted that in these events teachers were attuned to the ‘voice’ of the infant. Teachers responded dialogically by following the infant’s lead and in doing so ‘opened up’ infant — peer relations and potential intersubjective experiences as evidenced in the following narrative which was part of a *connected* interaction genre event:

Harrison (infant) was sitting on his teacher’s lap facing away from Lola (peer). Harrison was able to ‘speak’ to his teacher by reaching with his arm and physically moving his head and orienting his body toward Lola in a way that captured Lola in his visual field. The teacher ‘tuned in’ to Harrison’s request by turning Harrison to face Lola and intersubjectivity between Harrison and Lola was established with a gaze.

Analysis highlights the potential of teacher engagement to either support or thwart infant and peer intersubjective interactions. The power of adults to ‘open up’ or ‘shut down’ infant — peer relations was a point raised by Whaley and Rubenstein

(1994). Drawing attention to this assertion, Page (2005) suggests that if adults do have the power to engage in ways that stifle or support infant and peer relations, then the key teacher is pivotal in ensuring infants are supported in their relationships with peers. The finding of the present study supports both claims and further asserts that the role of the teacher is central to the ‘opening up’ of intersubjective experiences within the dialogic space of an early childhood care and education context.

Qualitative analysis highlighted the teacher’s capacity to ‘tune in’ to Harrison’s request to interact with Lola. By picking up on Harrison’s strategic employment of his body to communicate his intention to interact with Lola and responding in this attentive way the teacher respected Harrison’s right to make a choice with whom to interact. In addition, the teacher promoted this antecedent *fleeting* interaction to a *connected* infant — peer interaction event, which continued for almost 3 minutes, by listening to Harrison’s embodied voice and following his lead.

The findings concur with Page (2005) that “caring and significant” (p. 100) teachers are important to infants’ learning, development and well-being. In addition to empowering the infant by supporting his choice of peer partner, the teacher contributed to the infant — peer intersubjective experience by ‘tuning in’ to the infant’s social cues. Recchia and Shin (2012) accentuate the significance of teachers reading and interpreting infants’ social cues as an essential intersubjective skill. My findings are consistent with this view and further suggest that teacher engagement, that is not only sensitive and responsive but also ‘connected’, supports the intersubjective experiences of infants and peers as they navigate their way through the dialogic space of an early childhood care and education setting. Drawing upon Wegerif’s (2007, 2010, 2013) interpretation of Bakhtinian dialogic spaces, I suggest that the teacher in this example not only ‘opened up’ the dialogic space through her interpretation of Harrison’s social cues, but she also ‘widened’ the dialogic space through her connection to this event by fostering the opportunity for Lola’s voice to also be included in the dialogue.

5.2 Teacher presence within *connected* infant – peer interactions

Connection appears to be an intersubjective thread that ties the events in-between and beyond the infant —peer dialogue together. In chapter 4 analyses highlighted the connectedness of the teacher within infant and peer relations, irrespective of whether she was present or not. In total, there were 10 *connected* genre infant — peer intersubjective interactions which were comprised of multiple *fleeting* and *elongated* events. When analysis considered the teacher’s engaging physical presence within these *connected* interactions it was evident that teachers engaged during 9 out of the 10 *connected* interactions. Of these 9 infant — peer *connected* events teachers either *sustained* (3), *restrained* (2) or *sustained and restrained* (4) interaction.

Qualitative analysis suggests that the teacher was central to infant — peer *connected* interaction events regardless of her role in supporting or thwarting these intersubjective peer relationship experiences. The following narrative and image highlights how the teacher is implicated as a connecting feature of the infant — peer dialogic exchange. It is an example of a selected *connected* interaction genre event comprised of one *elongated* and 2 *fleeting* genre events, which took place over a period of 1 minute and 41 seconds. The teachers engaged by *sustaining and restraining* infant and peer interaction evident in the teacher’s words and the infant being picked up which ‘shut down’ the interaction:

Harrison (infant) is positioned on the floor playing with a wooden toy. Zoe (peer) approaches and stands over him watching. Harrison stretches out his arms and cries. Zoe stretches her arms out too and then takes the toy from Harrison. Zoe then moves closer and touches Harrison. Harrison stretches out his arms but this time does not cry. His key teacher says “Zoe please don’t touch Harrison”. Zoe refrains from touching Harrison. Harrison starts to cry. Zoe replies by making sounds and touches Harrison with her foot; “nice talking to him” says the key teacher as Zoe touches the pocket on Harrison’s clothes. Zoe leans very close to Harrison’s face and makes sounds. Harrison responds by looking at his key teacher and smiles. Zoe responds by shaking a rainmaker toy above Harrison’s

head. Harrison starts to cry. “Oops I don’t think he likes that” says the key teacher as Zoe puts the rainmaker under Harrison’s chin. Zoe picks up the rainmaker toy and shakes it again. Harrison watches Zoe shaking the object moving his arms and legs and appears interested in the sound the toy is making. “That’s a bit scary right by his face Zoe” responds the key teacher watching as she holds another infant. Zoe puts her face even closer to Harrison’s face. The key teacher laughingly replies “What’s that like Harrison?” “Awww that’s ok” says the key teacher. Harrison moves his arms and legs and cries even louder. The key teacher looks at the ‘buddy’ teacher who is in the adjoining room. Harrison’s ‘buddy’ teacher enters the room picks him up saying “awww, awww” as she hugs him and sits him on her lap.

Image 7. The *connectivity* of the teacher.



The narrative demonstrates the connectedness of the teacher in the event beyond the dyad, evident in the teacher’s capacity to alter the course of dialogue between Harrison and Zoe. However, what is also evident is the impact of Harrison and Zoe’s dialogic contributions on the teacher’s role as a *sustainer* or *restrainer* of peer exchange. For example the course of the dialogue was also altered through

Harrison's cry in response to Zoe's engagement with the toy. Harrison's response did not just alter his dialogue with Zoe, it also impacted on events beyond the dyad as evidenced in how his teacher 'switched' from her role of 'sustainer' to 'restrainer' after interpreting the infant's response to his peer as a request to be picked up.

It cannot be known for certain if the infant by crying was seeking the teacher's engagement as a partner in the dialogue and his cry was an invitation to the teacher to join the interaction with the peer, or if perhaps he was expressing his intention to no longer participate in the dialogue. Either way, this example highlights the challenge for teachers to read and interpret infant social cues in order to effectively promote intersubjectivity with peers.

The analysis highlights the subjective nature of teacher engagement and the challenges faced by teachers in relation to their pedagogical decisions to responsibly *restrain* or *sustain* infant-peer interactions. The findings suggest that the presence of the teacher is a feature of infant — peer *connected* intersubjective interaction events. This finding emphasises the key role of the teacher, possibly as a *connector* of infant and peer intersubjective interactions that together, form a much wider *connected* event in time. This finding extends on those from previous studies (White et al., in press; White et al., 2015) which highlighted the significance of the dialogic space and the infants' attention being drawn to events beyond the teacher — infant dyad to the wider social space. In this present study, analysis suggests the dialogic exchange between an infant and their peer is influenced by the events in the wider social space and that regardless of the teacher's intention to either *restrain* or *sustain* interaction the teacher is an implicated part of this intersubjective mix.

5.3 Restrained genre

Analysis of the teacher's role in *restraining* infant — peer interaction provided an insight into how the teacher's engagement appeared to impact on the nature of the infant and peer intersubjective experiences. As reported earlier, when teachers engaged in infant — peer interactions (31) the teacher *restrained* 11 of them. When teachers engaged by *restraining* interaction their actions and words appeared to thwart infant — peer relations by 'shutting down' the interaction.

Analysis of the 11 teacher *restrained* engagement events showed that one third took place during *fleeting* intersubjective interactions (4) and almost two thirds took place when intersubjective interactions were *elongated* (7). In chapter 4 it was reported that touch was a language form employed most frequently when infant and peer interactions were *elongated* as opposed to *fleeting*. Analysis of the teachers' engagement suggests that teachers were more likely to *restrain* interactions that involved infants and peers touching one another.

Qualitative analysis revealed that when the teacher 'shut down' the infant — peer interaction it appeared that she created distance between the infant and peer by separating them. Teachers separated infant and peer by picking them up five times across all 11 *restraining* events and only *restrained* interaction in this way when infants were in very close proximity to their peers. When teachers 'shut down' interaction, regardless of whether or not they picked up the infant, this typically occurred in response to infant—peer interaction involving touching or infants and peers moving toward one another. The qualitative analysis across several episodes (not all revealed in this thesis), also suggests that 'no touch' was a feature of the *restrained* genre as evidenced in the following two narrative examples (the image relates to the first narrative excerpt):

The teacher watches Harrison (infant) and Lola (peer). Just as Lola extends her arm and is about to touch Harrison, the teacher engages by positioning her body between Harrison and Lola separating the two. "He's worried about you" says the teacher, as she rolls Lola to the side, rubbing the stomachs of both Harrison and Lola. Harrison responds by moving his arms and legs very quickly and his head from side to side, crying. The teacher picks him up, sits him on her knee facing Lola. "Do you want to have a look?" asks the teacher as Lola rolls closer to the Harrison. Lola and Harrison gaze at each other, "Yubba, yubba" says Lola; she then turns away to play with a basket of toys, her back to the teacher and Harrison.

Image 8. “No touch”.



The following narrative is the second example of *restrained* genre teacher engagement characterised by the ‘no touch’ feature:

The teacher moves Harrison’s feet with her hands. Lola (peer) who is beside them moves toward Harrison (infant) and touches Harrison’s body with her hand. Harrison is positioned on his back and repeatedly responds by making sounds as he, waves his arms and reaches toward Lola as they gaze at one another. The teacher moves Lola’s hand away from Harrison’s body. Lola touches Harrison again. Once more the teacher moves Lola’s hand away. When Lola attempts to respond to Harrison for the third time, the teacher picks her up and sits her on her lap. Lola communicates to the teacher her intention to interact with Harrison by pushing her body forward toward him. The teacher responds to Lola by positioning her back on the floor beside Harrison. Lola touches Harrison’s legs and makes sounds. The teacher watches. Lola looks at the teacher, then turns back to Harrison and touches his legs. Harrison responds by making sounds as he moves his arms and legs. Lola again turns to look at the teacher. The teacher responds with a ‘look’ toward Lola. Lola turns to respond to Harrison, looks

at the teacher again and then moves physically away from Harrison. The teacher engages intersubjectively with Harrison, touching his feet and smiling as they share a mutual gaze. Lola turns her back on the interaction, then turns to look at the teacher who does not respond to her. Lola moves away into the other room.

Analysis highlights the complex and challenging role for teachers in deciding when and how to engage during infant — peer intersubjective relations. Both narratives and image above demonstrated the infants' intentions to engage with one another intersubjectively evidenced in their use of gaze, touch and vocalisations. However, both examples show that when the peer touched the infant this response resulted in the teacher responding by 'shutting down' the interaction.

This 'no touch' feature of the teacher *restrained* interaction genre, suggests that there may have been an anxiety on the part of the teacher and that her engagement, which *restrained* interaction between the infant and peer, may have been due to fear of them being hurt. The teacher's decision to separate the infants may demonstrate her anxiety, this was evidenced in both narratives. In the first narrative she rolled the peer on to her back and then rubbed both infants' stomachs before picking the infant up. In the second narrative she moved the peer's hand away from the infant's body before picking up the peer. This finding supports the claims by McGaha et al., (2011) who highlighted the anxiety of the teachers in their study surrounding infants' interactions with their peers because of the uncertainty concerning infants' safety with peers. My finding highlights the challenging role faced by teachers in deciding when to engage in infant — peer interactions. It further implies that like the teachers in Degotardi and Davis' (2014) and Williams et al's., (2010) studies that teachers employ strategies that separate infants from peers to avoid potential harm or conflict.

Qualitative analysis highlighted how the impact of the teacher on the nature of Harrison and Lola's relationship, each time she 'shut down' their interaction with a 'no touch' response, appeared to have influenced Lola's subsequent interactions with Harrison as evidenced in the above two narratives and image example. Through the Bakhtinian notion of alterity qualitative analysis reveals how the teacher's engagement in these *restrained* events altered the course of the infant —

peer dialogue and influenced Lola's subsequent interactions with Harrison and the teacher beyond these events. There was another observed event following the two described above where Lola related to Harrison by employing touch, the teacher engaged and Lola responded by moving away from and turning her back on Harrison. Further evidence of the teacher's impact beyond the immediate infant — peer intersubjective interaction was evident in these 3 observed 'no touch' teacher *restrained* events in which Lola responded by moving away, turning her back or shaking her head from side to side when she was touching Harrison.

Analysis reveals how teachers' *restrained* engagement responses to infant — peer intersubjective interactions in the present, have the potential to alter how infants relate to peers in the future. The results highlight how events in the wider social space beyond the infant and peer dyad have the potential to 'open up' or 'shut down' dialogic spaces and as a result the possibilities that these spaces offer for intersubjective relationships to be sought. From a Bakhtinian stance communication is not just about the decoding of words it is a complex process that takes into account, context, social relationships and 'common ground' (Bakhtin, 1986).

This finding indicates that when teachers 'shut down' infant — peer interaction comprising of touch this may generate a response in the peer that does not support the intersubjective experience of infant and peer relationships later in time. Translational research highlights the significance of affective experiences on learning and memory, regardless of their positive or negative nature (Geake & Cooper, 2003). This finding draws attention to the impact of teacher responses on early infant and peer experiences and relationships. Similar to the claims by Dalli et al., (2011) and Mathers et al., (2014), this finding indicates the importance of teachers engaging in emotionally attuned interactions in order to support infants' abilities to regulate emotions. This finding also supports claims by Campos, Frankel and Camras (2004 as cited in Dalli et al., 2011, p. 58) that "emotional regulation is a culturally determined response that draws on the social cues offered by significant adults to the infant". In line with the OECD (2007) this result suggests that infants who are able to regulate their emotions are more likely to have strong social networks.

The potential for teachers to *restrain* an infant — peer interaction by not responding during an interaction that had initially been *sustained* was also observed in this study. The selected narrative demonstrates how the infant — peer interaction was ‘shut down’ when the teacher entered into dialogue with another teacher, the teacher appeared to ‘tune out’ after having been ‘tuned in’ as the following narrative explains:

Lola (infant), Harrison (peer), and the teacher are interacting with one another. Another teacher approaches and both teachers enter into dialogue momentarily. Harrison starts to cry, turns with his arms outstretched to look at Lola and stops crying. Lola’s attention is now focussed on the wider social space beyond the event. Lola does not respond to Harrison. In response to Lola’s lack of response, Harrison begins to cry again still watching Lola. The teacher is physically present and watching Harrison and Lola but this time she does not respond or enter into an interaction with either of them.

Analysis suggests that the teacher’s engagement in interactions do matter. This finding supports Reddy’s (2012) claim that being recognised does matter and that infants are communicative partners in dialogue (Reddy, 2008) this is evidenced in the distress that is felt when Harrison does not receive a response from either the teacher or the peer. In the same way that infants became distressed in Tronick’s (1989) still face paradigm or the blank face test (Murray & Trevarthen, 1985), so did Harrison in this study. This finding highlights the importance of connections, and suggests that even though physically present, if the teacher is not ‘tuned in’ but instead ‘tuned out’ the course of the dialogue can be altered. This finding further confirms the significance of sensitive and responsive pedagogy. Although the teacher was physically present in the social space she appeared to no longer be connected or present – she had “fallen out of dialogue” (Bakhtin, 1986, p. 168).

5.4 Sustained genre

Analysis of the teacher’s role when she engaged in infant — peer interaction by *sustaining* interaction provided an insight into how the teacher’s engagement appeared to impact on the nature of the infant and peer intersubjective

experiences. As reported earlier, when teachers engaged in infant — peer interactions (31) the teacher *sustained* interaction 20 times. When teachers engaged in infant — peer intersubjective interactions, they seemed to play a vital role in their *sustained* capacity to ‘open up’ dialogue as a partner in ways that included, connected and recognised each partner’s voice in the dialogue and valued infant and peer agency by following their lead. Characteristics of this genre were *elongated* and *connected* infant — peer events. Teacher’s *sustained* infant — peer interaction by promoting and nurturing the connection between infant and peer through inclusion, support and enhancement of the relationship that was taking place. This was evidenced in the way teachers encouraged ‘connection’ through language and body positioning during *sustained* events.

Qualitative analysis highlights that objects were a feature of teacher *sustained* engagement in infant — peer intersubjective interactions. When teachers ‘opened up’ dialogue in infant — peer intersubjective interactions, they drew upon objects as a source of intersubjectivity and alterity. Teachers often employed objects to draw peers closer to infants. Objects were effective in sustaining interactions by offering infants the opportunity to negotiate dialogue and relate in collaborative ways. Teachers in each *sustained* event recognised the ‘voice’ of both the infant and the peer, within the *event-of-being*, by watching, listening and paying careful attention to infant and peer responses. The following selected event is characteristic of teacher *sustained* engagement within infant — peer interaction events. The teacher is positioned on the floor beside Harrison, with Lola utilising the teacher’s leg as a support to interact with her peer:

Initially Lola (peer) and Harrison (infant) establish intersubjectivity with a gaze; Lola makes breathy sounds as she reaches for Harrison’s wooden toy. Harrison responds by pulling back on the toy and waving his arms and legs. Leaning forward, the teacher initially engages by making breathy sounds then says to Lola “are you interested in what he’s got?” “Awww, awww” sounds the teacher playfully saying “look he’s going to fight for it”. Harrison drops the wooden toy. Moving closer, the teacher passes Harrison a small wooden bird and says to him “would you like that thing it’s nice and softer?” Lola orients her hand toward the bird toy, then

pauses and picks up the bigger wooden toy initially dropped by Harrison. The peer leans forward and drops the bigger wooden toy close to Harrison. Harrison and Lola mutually gaze at one another as they make sounds. The teacher smiles and passes Lola a blue ball which Lola offers to Harrison, he lets go of the wooden bird (it remains on his upper chest) reaches for the blue ball but drops it in his attempt to hold it. Lola reaches for the ball and when it is in her grasp she rolls the ball toward Harrison; together they each hold one side of the ball, until Harrison successfully holds onto it. Lola reaches for the wooden bird on Harrison's chest, picks it up and places it to her mouth.

Image 9. Teacher as *sustainer* of dialogue.



The teacher did not dominate this conversation. Instead she ‘tuned in’ to the infant’s embodied language, engaging jointly in ways that acknowledged and respected the infants’ perspectives and ensured their contributions to the dialogue were valued. This was demonstrated when the teacher engaged by entering into dialogue with Lola and Harrison by employing infant language in the form of smiles, breathy sounds and aww awww sounds as she oriented her body toward Lola and Harrison.

The results of analysis suggest that infant and peer relations are *sustained* when teachers recognise, understand and employ language forms that infants use in dialogue with one other. “Meaning belongs to a word in its position between speakers... meaning is realized only in the process of active, responsive understanding” (Clark & Holquist, 1984, p. 232). The findings suggest that by employing sounds, a language form that the infants frequently used in their dialogues with each other (see chapter 4) the teacher became a participant in the infant dialogue. This finding supports Bakhtin’s assertion that the person that understands becomes a participant in the dialogue (Bakhtin, 1986). Here the teacher is not just ‘tuning in’ to the social cues of the infants she is actually becoming a participant in the interaction. The teacher’s employment of infant language is not only evidence of her participation but also evidence of her learning being influenced by the infants as much as they are influenced by her engagement. Wegerif (2013) explains that learning that takes place in the dialogic space is not one way, both teacher and learner are influenced by the point of views of the ‘other’.

Results further suggest that the teacher’s attuned dialogic approach to engagement was evident in the way she appeared to ensure Harrison and Lola had *time* ‘to be’ in their relationship. By engaging in this way, an unhurried experience resulted for the infant and peer to reciprocate dialogue in ways that were meaningful to them and achieved intersubjectivity. When both Harrison and Lola wanted the same toy the teacher did not direct the dialogue. Instead she acknowledged that there was possibly an element of tension “look he’s going to fight for it” and then gave Harrison and Lola ‘time’ to respond on their own terms as agents of their own learning. When Lola was successful in gaining possession of the toy the teacher responded to Harrison by offering him another object.

The teacher’s interpretation of Harrison and Lola’s toy possession disagreement, and the manner in which she addressed it, did not ‘shut down’ the interaction. Instead this moment of alterity ‘opened up’ a dialogic space, this promoted new possibilities for Harrison and Lola to negotiate the direction of the dialogue and their learning. Evidence of this was visible in Lola’s strategic use of language to collaborate and then ‘trade’ with Harrison. The teacher engaged by becoming a partner in the infant — peer interaction, promoting both alterity and

intersubjectivity by ensuring both infant and peer voices were heard and by supporting the participation of both infants in the dialogue. Results imply that a dialogic approach to infant pedagogy is a feature of teacher *sustained* engagement in infant — peer intersubjective interactions. This finding supports claims by Dalli et al., (2011) that a dialogic approach to pedagogy and sensitive, responsive attuned caregiving that recognises the significance of infant and peer contributions is vital for the sustainability of infant and peer intersubjective relations. My finding re-inforces the claims by others (Mathers et al., 2014; Page, 2005; Recchia & Shin, 2012; White, 2009a; White et al, in press; White et al, 2015) that advocate for an approach to pedagogy that is sensitive, responsive and attuned. My finding also supports the views outlined by teachers in White et al's., (2015) study who highlighted objects as a source of intersubjectivity and in this study as a source of alterity.

A key feature of the *sustained* genre was the positioning of the teacher's body so that it could be easily accessed by infants to communicate with peers intersubjectively. When teachers *sustained* dialogue they frequently leaned toward the infant or peer at some point during their engagement. For example they whispered in the infant's ear while gazing at the peer or sometimes the teacher moved forward in synchrony with the infant, or placed their face at the same level as the infant's face. Another feature which enhanced the *sustained* genre was the positioning of the teacher's body so that each participant in the dialogue was visible to the 'other' or physically connected to the other for example by holding the 'other's' hand, an object or the touch of the 'other' with one's foot. A developmental reality for infants is that they cannot locomote as easily as older peers. Consequently, the teacher's body was pivotal in *sustaining* and 'opening up' infant-peer dialogue and, I suggest, an integral source of intersubjectivity (see Image 9).

Often infants in order to face a peer with whom they were interacting utilised the teacher's torso as a support – leaning against it when sitting on the teacher's lap, holding onto it in order to stand, reach or move toward a peer. In these situations the teacher, regardless of whether she was sitting on a chair or stretched out on the floor manoeuvred her body and used her arms, hands and legs in a manner that could be openly communicated and seen by both infant and peer. Regardless of

whether the infant or peer were being held by the teacher or positioned on the floor, in teacher *sustained* intersubjective interactions the language of the teacher's body appeared to be accessible and understood by all partners in dialogue. Image 9 illustrates this point. The teacher was positioned on the floor and the infant leaning over her knee. Throughout this *elongated* and *connected* interaction the teacher was observed bending her legs higher or lower gauged by the movements and pressure of the infant's body against her body. Being positioned on the floor, the teacher's body provided the infant with numerous other possibilities to establish and maintain intersubjective dialogue with their peers.

My findings suggest that the way in which teachers engaged in infant — peer interactions often determined the orientation of the teacher's body positioning. This finding concurs with Mussatti and Mayer's (2011) assertion that the teacher is central to infant— peer sustained interaction and also substantiates their view that teacher positioning supported infant and peer engagement and participation in shared experiences. This finding suggests the unspoken language of teachers' bodies, when they *sustain* infant — peer intersubjective interactions, is pivotal and directly implicates the teacher in the dialogue. Often, importance is placed on the spoken word as evidence that teachers are engaging with infants (Siraj-Blatchford, 2007). My finding expands on those of White et al., (2015) which emphasise the significance of the *body* in infant — teacher dialogues. I argue that the teacher's body language should also be considered as a central means for 'opening up' dialogue that sustains infant — peer intersubjective experiences.

At times teachers engaged in infant and peer interaction as the event was unfolding and at other times teachers provoked the opportunity for intersubjectivity to occur by 'opening up' dialogic spaces through which infant and peer relationships could develop. The selected event is an example of teacher provocation for infant-peer interaction:

Image 10. 'Opening up' dialogic space.



Lola (infant) is sitting at the infants' table exploring the leftover vegemite sandwich from her lunch. Sitting very close by is the teacher who is holding Harrison (peer) on her knee – initially he is facing away from Lola. The teacher notices that Harrison has turned his head and is watching Lola so she moves him to her other knee facing toward Lola. “Look Lola”, says the teacher, “Harrison”. Lola turns toward Harrison, both infants gaze at each other, “gaga galuugaluuglug” says Lola, as the teacher gently touches Harrison’s hand. “Look she’s talking to you” verbalises the teacher as she gestures with her hand in a waving motion. Lola and Harrison respond by waving, gazing and making sounds. “Hiee, Hiii Harrison” exclaims the teacher waving her hand, as Harrison and Lola continue to gaze at each other and wave their hands.

In my view this narrative highlights not only the valuable social learning that took place between Lola and Harrison but also how the teacher responded by promoting opportunities for both infants to participate in the dialogue. This was evidenced in the teacher’s words and hand gestures. Harrison’s embodied voice appeared to initiate the interaction alongside the possibilities for dialogue that

were provoked by the teacher resulting in a dialogic exchange that recognised the value of each voice in this interaction which included infant, peer and teacher.

Results suggest that teacher engagement that is attuned to the social cues of infants not only sustains infant — peer interaction but may establish opportunities for infant and peer intersubjective interactions to occur. This example confirms my previous finding, which suggests, that when teachers employed language that was recognised by the infant the potential for teacher engagement to ‘open up’ possibilities for infant — peer dialogue was enhanced. The teacher’s use of mutually shared language was evidenced in the way she waved her hand. This finding concurs with Sumsion and Goodfellow’s (2012) assertion that if researchers are to better understand the lifeworlds of infants, then it is imperative that ways are sought to better understand infant language. This finding further confirms that when teachers participate in the lived experience of dialogue by employing infant language, that this engagement ‘opens up’ a dialogic space through which a better understanding of the language of the infant can be sought.

When teachers engaged for the purpose of *sustaining* infant-peer relationships, their responses were more likely to generate responses from the infant that optimised positive intersubjective experiences with their peers. The following selected *elongated* event took place over a period of 44 seconds it was also part of a *connected* genre event with a total duration of 2 minutes and 4 seconds:

Image 11. The kiss.



Lola (infant) is positioned on her teacher's knee and is interacting with Harrison (peer). Lola turns to look at the teacher, they gaze at one another. The teacher smiles, touches Lola and says "I was going to give you a kiss". "Awwwww, awwww" replies Lola. "Awwwww, awwww" responds the teacher as the two share hugs and kisses. Lola then turns her body toward Harrison they gaze at one another. Lola smiles at Harrison and then purses her lips together and makes a kissing sound. Both Lola and Harrison gaze at one another. Harrison responds by reaching toward Lola and laughs. The teacher puts her arms around Lola, smiles and says to Harrison "you all happy now".

The above narrative demonstrates how the teacher positively influenced the relationship between infant and peer by giving 'form' to the infant through her affectionate response - "...it is his mother's loving embraces that 'give form' to him axiologically (Bakhtin, 1990, p. 50). In turn, the teacher's intersubjective response generated a response in the infant, and the infant subsequently imposed intersubjective form on her peer as evidenced in her kiss. The expression of language is a significant aspect of intersubjectivity because it influences

interpretation and meaning (Sullivan, 2013). In this case how infant and peer made sense of language in the form of a kiss and its purpose in this particular context. In this social encounter between infant, peer and teacher language was expressed affectionately. From a dialogic point of view, this form of expression will impact on each participant in the dialogue, as each comes to know who they are through their relationship with the other in their process of *becoming*. Consequently, affecting what they will bring to interactions with ‘others’— “One’s own word is always the others” (Petrilli & Ponzio, 2013, p. 125).

My findings confirm that dialogic spaces go beyond one to one infant — peer or infant — teacher dyads. Extending on Wegerif’s (2007, 2010, 2013) concept of the dialogic space, my findings highlight the vital role of the teacher in interpreting, widening and deepening the dialogic space through participation in dialogue with infants and peers in the present moment. This was evidenced in the way the teacher ‘opened up’ a dialogic space through her interpretation and deepening of Lola’s orientation toward her, evidenced in the teacher’s words and Lola’s response. The teacher’s participation in the dialogue in this way resulted in Lola widening the dialogic space to include Harrison in this shared experience.

This finding supports Sullivan’s (2013) view that human beings are influenced by the form shaping experience of being in dialogue with an ‘other’. It also concurs with Sullivan’s (2013) claim that social encounters with ‘others’ not only influence how human beings define themselves but how experiences with ‘others’ may be anticipated and how they evolve. Therefore, this finding highlights the importance of the relationships that infants are experiencing with their peers and their teachers in the dialogic space of an early childhood care and education centre. As Kernan (2010) suggests, a sense of belonging is achieved through the experience of common ground and togetherness in peer relationships. My findings stress how teachers have the potential to form and alter the experience of belonging for infants in relationship with their peers. “How a voice sounds is a function of where it is and what it can ‘see’; its orientation is measured by the field of responses it invokes” (Bakhtin, 1986, xvii).

5.5 Summary

Using a Bakhtinian notion of utterance, analysis considered the ways in which teachers responded during infant and peer intersubjective interactions as a primary means of answerability in an early childhood care and education context. The findings suggest that whether directly or indirectly involved in a peer interaction the teacher is always implicated. When the teacher engaged in the infant — peer interactions she either ‘opened up’ dialogue by *sustaining* the experience or she ‘shut down’ dialogue by *restraining* the interaction. When teachers *restrained* the interaction they most often did this by separating infant from peer. The findings suggest that this form of engagement had the potential to alter infant dialogue with peers later in time. When the teacher engaged by *sustaining* the dialogue, the strategy she employed, that appeared most effective, was becoming a partner in the dialogue herself. In these interactions the teacher not only paid close attention to the social cues of infants but drew upon infant language which ‘opened up’ a dialogic space through which both infants and teacher could relate to one another on common ground.

The chapter that follows will summarise the findings and present implications for infants in early childhood care and education and future research.

Chapter Six

Conclusion and Implications

In this thesis I set out to investigate the intersubjective relationships between infants and peers in an early childhood care and education context and how teachers engaged in these relationships. The intersubjective experience of infants and peers was investigated in chapter 4. Chapter 5 explored the teacher's engagement in these infant — peer intersubjective interactions. The employment of a Bakhtinian dialogic methodology and *utterance* as my unit of analysis enabled infant — peer interactions and the teacher's engagement within these events to be analysed as a means of answerability.

Through a dialogic exploration and analysis I discovered the intrinsic connectedness of events within the dialogic space of an early childhood care and education setting. In this chapter I present a summary of my findings in response to the two research questions. This chapter will conclude with a section on implications for infants in early childhood care and education and provocations for future research.

6.1 Summary of the findings

In response to my first research question which asked *what is the intersubjective experience for infants and peers in early childhood care and education* and my second research question which asked *how does the teacher engage in infant—peer intersubjective events* the findings are summarised in the following two sections.

6.1.1 Infant and peer intersubjective experience

My results suggest that in the case of these infants and their peers, in a New Zealand early childhood care and education setting, intersubjective interactions are *fleeting*, *elongated* or *connected* events. These intersubjective events were determined by the duration of the interaction that unfolded between infant and peer in the event-of-being. Infants related to their peers intersubjectively from a range of vantage points and positions. Indeed, the results of this study highlighted the ability of infants to interact with one another from a distance. Yet, regardless

of their position or proximity, infants demonstrated their capacity to relate with peers in social interactions that promoted ‘dialogic spaces’ through which intersubjective relationships were sought.

The findings of this study confirm the assertions of Engdahl (2012), Degotardi and Pearson (2014), Selby and Bradley (2003), White (2009a), White et al., (2015) and White et al., (in press) to suggest that infants are intersubjective agents in their relationships with peers. Infants intentionally communicated with peers in lived experiences regardless of whether their interactions were *fleeting*, *elongated* or *connected*. In addition, infants and peers engaged in interactive dialogue with one another by employing a variety of language forms that were embodied, often silent and most often drew upon sounds or a ‘look’ as a primary source of intersubjectivity.

The results of this study further suggest that very young infants may be participating in dialogic relationships that promote the agency of infants and their capacity to express themselves autonomously through embodied language that fosters the partnership of both infants in dialogue. I contend that it is this intersubjective experience of ‘co-being’ and co-participation in lived language that empowers and supports a sense of agency for infants as evidenced through the embodied nature of infant language. Evidenced in this thesis was the infants’ ability to exercise their agency through the choices they made to enter into dialogue with a peer *fleetingly* or by relating over an extended period of time in an *elongated* interaction event. Furthermore, a feature of these infant — peer intersubjective experiences was the unhurried, synchronous and rhythmical patterns of engagement in which both infant and peer ‘opened up’ opportunities for the other to respond. Consequently, this study implies that infants are relating dialogically with one another and these dialogic relations are intersubjective.

The results of this study suggest that the nature of an intersubjective interaction is not simply determined by its duration or proximity but by the dialogic relationship that is developing between the infant and peer through the open communication and intersubjective nature of infant — peer social encounters. *Fleeting* encounters are significant for what they can offer and perhaps fundamental in order for infants to be able to develop an intersubjective relationship with their peers. The

results imply that *fleeting* events provide the base for dialogic exchange because they establish intersubjectivity through the mutual recognition and connection with another. If intersubjectivity is a base for dialogic exchange (Rommetveit, 1979) then *fleeting*, *elongated* and *connected* interactions provide a dialogic space for infants and peers to have their voices heard as they respond, confront and negotiate the dialogue in the *event-of-being*. Consequently, the results support the view of Wegerif (2007, 2010, 2013) that dialogic spaces ‘open up’ opportunities for different points of views to be expressed.

6.1.2 Teacher engagement in infant and peer intersubjective relations

In the dialogic space of an early childhood care and education environment infants can and do draw upon objects, bodies, language forms, and whatever is at their disposal as a source of intersubjectivity. Indeed, the teacher’s body was employed by infants to interact with peers as a feature of infant — peer intersubjective engagement. The results indicate how teachers engaged in the interactions that were taking place between infants and their peers often determined the orientation of the teacher’s body positioning. The findings suggest that the dialogic space of an early childhood care and education environment is a place where, what teachers pay attention to and how they respond to infants’ intersubjective interactions with their peers may either ‘open up’ by *sustaining* or ‘shut down’ by *restraining* positive, responsive and reciprocal relationships with infants.

The teacher is always implicated whether she engages directly or indirectly in the intersubjective events that take place between infants and peers; teachers were present either in a physical form or in the language that infants and peers were employing. The teacher in her capacity to either *restrain* or *sustain* peer interaction is a pivotal *connecting* feature in infant — peer intersubjective experiences, in the now moments and across time and space. It was noted that when teachers ‘shut down’ infant — peer intersubjective dialogue, this form of engagement had the potential to alter how infants related to peers in subsequent interactions, highlighting the importance of sensitive, ‘in tune’ teacher engagement. The findings further suggest that when teachers related to infants and peers by participating with them as a partner in dialogue as opposed to a mediator

of dialogue, opportunities for the infants to assert their agency intersubjectively were promoted.

6.2 Implications and future research

A strength of this thesis is the contribution that it makes to a neglected area of research — infant and peer intersubjective relationships. The results of the present study should be considered with caution due to the small number of infants involved. The small number of infants as participants limits the extent to which these findings can be generalized, even in a New Zealand context. A subsequent implication is the need to take into account a cultural consideration to this study because of its single location. According to White (in press), dialogues may place different priorities on the use of the body, sound and language in different cultures. Despite the limitations, this study contributes to current knowledge in relation to infant and peer relationships and gives an insight into the intersubjective experiences for infants and peers in an early childhood care and education context.

Regardless of one's conception of intersubjectivity, the findings imply that how infants relate to peers and how teachers' engage within these events will impact on the relationships that are taking place for infants in the present but also later in time. Recent developments in neuroscience in tandem with translational studies highlight the paramount importance of experiences and relationships in the early years (Berk, 2012). The findings of this study confirm the assertions of Campos et al., (2004, as cited in Dalli et al., 2011, p. 58) that sensitive responsive caregiving enables emotion regulation in infants and toddlers and wires up the brain for learning. In addition, this study also highlights the infants' capacity to regulate the emotions of peers through their intersubjective experiences.

Current international literature reviews confirm the significance of these neurological findings (Dalli et al., 2011; Mathers et al., 2014) and emphasise intersubjective experiences and reciprocal relationships as key aspects of quality relationships for infants. With increasing numbers of infants attending early childhood services and the positioning of infants in curriculum documents across the world (White & Mika, 2013) there is an agreement that the provision of pedagogy for infants is a specialised area and therefore policy and practice should

be shaped and supported specifically for the very youngest citizens (Dalli et al., 2011; Mathers et al., 2014). The findings of this study support this view, highlighting the intersubjective agency of infants in relationship with peers and teachers that extends well beyond one on one interaction, when the dialogic space of an early childhood context is considered in its entirety. The findings of this thesis illuminate infant and peer relationships as key to learning in curriculum that positions infants as intersubjective agents in their own right.

The findings of this study foreground the essential role that learning through dialogue plays in infants' lives — dialogue that embraces the embodied language of infants alongside intersubjective interactions that are *fleeting*, *elongated* or *connected*. The challenges faced by teachers when deciding whether or not to engage in the intersubjective interactions between infants and their peers were recognised in this thesis. In addition, the lack of research from which teachers of infants can draw upon to guide their practice was also illuminated. The findings of this thesis suggest that the teacher's role within these relationships is pivotal to 'opening up' dialogue and maintaining dialogic spaces through which infants can express their ideas, feelings and thoughts in embodied ways through interactions that are intersubjective.

The expectation that infants will enjoy positive, reciprocal, responsive and secure relationships is central to the curricula of a growing number of countries around the world (see for example Ireland, New Zealand, The Netherlands and the countries of the United Kingdom as cited in Kernan et al., 2011), particularly as these documents emphasise relationships as key to learning. The results of this study highlight the importance of pedagogy that is not only sensitive, attuned and responsive but also dialogic. Learning occurred for these infants in relationship with their peers and also when their teachers joined in these interactions, particularly when teachers engaged by 'speaking' infant language. Learning did not always unfold in experiences that were intersubjective but it also occurred in experiences that were alteric — indicating the important learning that can take place in moments of tension that may be perceived by teachers as negative. Most curriculum documents that acknowledge the significance of relationships also recognise the infant as a capable and confident communicator (see for example *Te Whāriki*, *The Early Years Foundation Stage* and *Pre-birth to Three*). The results

of this study confirm White and Mika's (2013) notion which expands on this view and recognises the infant as a *dialogic agent* — and therefore one who is intersubjective.

The results of this investigation highlight the importance of interactions that although *fleeting* have the potential to sustain interactions between infants and their peers. Signalling to policy makers and educators that if future research considered infant intersubjective communication with peers this may help inform teacher practice, particularly strategies in relation to 'opening up' dialogic spaces through which to support infant and peer relationships. Research that involved a greater number of infants and teachers could potentially give greater insight into the teacher's role as a dialogic partner in infant peer interactions. In addition, research that occurred over a greater period of time could also give more insight into the ways in which infants' experiences are connected across space and time. The results further highlight how events in the wider social space beyond the infant and peer dyad warrant further investigation because of the potential for these 'other' events to 'open up' or 'shut down' dialogic spaces.

This research informs early childhood curriculum, policy and practice by highlighting the key role that intersubjective interactions play in the everyday relational experiences of infants with their peers. Taken together the findings may have implications for policymakers, educators and teacher education by 'opening up' dialogic spaces through which infants are *seen* as intersubjective agents and dialogic partners.

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Appendix A. Studiocode Timeline

