



Infant and teacher dialogue in education and care: A pedagogical imperative



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ABSTRACT

This exploratory study investigated the nature of teacher–infant social dialogue in a high-quality education and care centre in New Zealand. Employing dialogic methodology (Bakhtin, 1986), interactions between infants and teachers were analysed in terms of the language forms used in the social event. Polyphonic video footage of two infants' social experiences and subsequent teacher interviews were coded to identify forms of language that occurred in dialogues and their interpreted pedagogical significance to teachers. The results revealed four central features of teacher–infant social exchange: (i) infants were more likely to respond to teachers interaction initiations when teachers used verbal and non-verbal language form combinations; (ii) when initiations were verbal and non-verbal combinations, both teachers' and infants' responses were significantly more likely to be also combinations of verbal and non-verbal language forms; (iii) both infants and teachers altered their responses to the language forms used by the initiator regardless of whether that was an infant or a teacher; and (iv) when teachers did not respond, they had a pedagogical rationale. Results highlight the multi-voiced and synchronous nature of teacher–infant interactions, the complex nature of communication in a formal out-of-home setting, and the pedagogical nature of teacher dialogue with infants.

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Introduction

Much is now 'known' about infant–adult communication. Numerous psychological studies, spanning more than sixty years, report various aspects of infant interaction, mostly with their mothers. These studies range from observations of infant–adult dyads in laboratory settings (Beebe, Knoblauch, Rustin, & Sorter, 2003; Kretch & Adolph, 2013) to adult identification of interactive style. Many of these studies invite infants and their caregivers to perform various tasks that demonstrate the nature of their relationship (Gibson & Walk, 1960, visual cliff; Murray & Trevarthen, 1985; Murray & Trevarthen's 1985, double television monitor experiment), while other researchers engage in interactions with infants themselves (Meltzoff & Moore's 1983, 1989, experiments with newborn babies poking out their tongues). These studies reveal infants as highly social communicators capable of using whatever is at their disposal (typically their bodies) to engage with others. What is not known, or at least agreed upon, is the significance of these social acts and, their reciprocal nature in educational contexts beyond the home.

This paper article draws on the theoretical perspectives of a Soviet philosopher M.M. Bakhtin (1895–1975) who proposed the important idea that meaning is derived from an understanding of language as a social, interactive and evaluative event. Key Bakhtinian ideas that underpin this article are located within a broad definition of dialogism, which can be loosely interpreted as the experience of language as a social event – that of subjectivities colliding with one another at a particular space and time. Seen in this light, language is not merely given or received as a deliverable trope or an isolated exchange but an act of mutual consciousness, which constantly alters the lived experience of an encounter. Germaine to this view and our research are the ideas that each person brings multiple voices to their language, that language is a *polyphonic* (i.e., multi-voiced) event, and that language is laden with volition, emotion, and ideology. As such, language has a form-shaping potential and acts as the most central means of becoming. From a Bakhtinian standpoint, how communication unfolds in the social world and gives form to the other's experience is therefore integral to the event of learning.

A dialogic approach to the study of infant dialogue, therefore, offers a means of exceeding the limitations of isolated language events and, in doing so, examining subjectivities in action (Sullivan, 2013). Oliva (2000) describes dialogism as "an interaction that values all the discourses in communication" (p. 41). Employing a

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dialogic approach to investigation therefore requires keen attention to the way participants give form to each other's experience through dialogue in its broadest sense. Based on the work of Mikhail Bakhtin (1986) the central premise of dialogism is that any language is half someone else's. Dialogism suggests that words are formed and re-formed through social interaction, through a creative process of communication, rather than as some kind of established, universal code that can be transmitted from one person to another.

A broadened emphasis on "all forms of language as they occur in dialogues" [our emphasis], (Junefelt, 2011, p. 167) and their received meanings by those involved orients the dialogic approach that underpins this study. This framework recognises various forms that language can take, the impact of others, seen and unseen, on language use and, by necessity, the organically generated nature of dialogue (Zinchenko, 2010). From a Bakhtinian standpoint, therefore, dialogue lies at the heart of infant pedagogy.

A dialogic approach to the study of infant social experience

Dialogic researchers posit the importance of studying intersubjectivity beyond dyadic encounters in laboratory settings that pay little or no heed to the social contexts in which ordinary dialogues typically take place (Sullivan, 2013; Wegerif, 2013; White & Peters, 2011). According to dialogic theory, communication resides at the centre of learning because it is a primary means of ontological engagement with everyday ideas, concepts, and problems (Lobok, 2012; Matusov, 2009). For infants, this is especially pronounced in the early stages of language learning, where the emotionally laden value of language by adults towards the infant plays an important role in the developing consciousness. As Bakhtin (1986) explains: "Just as the body is formed initially in the mother's womb (body), a person's consciousness awakens wrapped in another's consciousness" (p.138).

According to this dialogic approach, neither self (in its multiple sense according to the contexts in which dialogue takes place) nor the 'other' can be interpreted outside of social interchange (Hermans, 2008). Here the *event* of dialogue, its form and meaning shape the social experience and the nature of learning and development. Junefelt (2011) invokes dialogism to explain that "dialogues, dialogicity and different speech genres are both taught and caught" (our emphasis; p. 173) in the early years and points out the importance and potential of interactions that not only support intersubjectivity but also provide scope for alterity – a deliberate departure from shared meaning that holds deep significance for learning. Thus, an appreciation of the event of dialogue and its form-shaping potential on 'other,' in the moment of encounter, is at heart of high-quality social exchange. Accordingly, interpretation of baby babble, body movement, and subtle language forms such as a gaze is central to understanding the social experience of infants.

As Wegerif (2013) points out, the combination of contemporary neurological and psychological research into infant social experience suggests that it is no longer possible to ignore the perspective of the infant. When viewed as a dialogic encounter, social experience becomes central to learning in ways that expand well beyond the discrete influence of the primary caregiver. This is especially true for contemporary infant experience in many parts of the world where infants spend long hours with non-familial adults and peers in formal early childhood education (ECE) settings. Since a dialogic approach suggests that the infant can "see oneself from the perspective of a relationship" (Wegerif, 2013, p. 44), an investigation of the social exchange in settings outside the home has the potential to conceptualise infant consciousness as a multiple, constantly altering, event of 'otherness.'

Although dialogic theories have been applied to a small number of early childhood education research studies with older preschool children in ECE settings (Cohen, 2009; Cohen & Uhry, 2009; Dore,

1995; Ishiguro, 2010; Junefelt, 2010; Odegaard, 2007;) the current exploratory study is the first time a dialogic approach has been taken to the investigation of under one year old infant dialogues in this educational locale. Building on earlier studies (White, 2009), the current investigation seeks to understand the social orientations of young children through dialogues with others, in this case, their teachers, in which infant perspectives are interpreted through language exchanges and associated meanings.

The importance of dialogue in infant education and care contexts

There is now a general consensus in the literature that the quality of formal educational environments is greatly influenced by the teacher's behaviour, their attitudes, and skill in creating strong attachments with infants (Biringen et al., 2012; Dalli, White, Rockel, & Duhn, 2011; De Kruijff, McWilliam, & Ridley, 2000; Stephen, Dunlop, Trevarthen, & Marwick, 2003; Vandell et al., 2010). Drawing on a rich psychological, physiological, and neurological legacy, it has been suggested that high-quality infant education centres are characterised by teachers who have strongly developed emotional attunement and who are skilled at detecting and responding to infants' modes of communication (Tronick, 1989). Teachers who pay careful attention to the communication styles of infants are more likely to understand their priorities, respond appropriately (Johnston, 2011; White & Mika, 2013), and have an awareness of their personal influence within the social exchange (Manning-Morton, 2006; Test, 2006). Through such attunement, teachers are more likely to engage in dialogues with infants that facilitate high levels of intersubjectivity and lead to a better understanding of infants' learning priorities. With this knowledge, teachers can adjust their practice to best meet the individual requirements of learners (Recchia and Shin, 2012).

Tomasello, Carpenter, Call, Behne, and Moll (2005) suggest that the extent to which goals and goal-oriented actions are shared is determined by a variety of factors: age of the infant, age of the social partner, complexity of the task, and mutual understanding of what is required. According to this view, each partner's conception of the activity and its significance has an impact on the extent to which their communication can reach a shared goal. Tomasello et al. (2005) suggest that this compatibility increases with age, as infants learn to strategically manipulate their environment and their relationships. On this basis, it is asserted that very young infants, less than nine months old, engage in dyadic social experiences based on the intimacy of the adult partner who mirrors infant's acts as a means of social intercourse (Carpenter, Nagell, & Tomasello, 1998). According to Meltzoff and Gopnik (1993) while infants can create a "like me" stance, which suggests that infants are imitating others in social exchange based on observations of emotional encounters, they cannot yet take on a third-person perspective of the experience in order to respond to the intentions of their social partners. Consequently, there is a common perception that social encounters for infants under nine months of age are similar to those of apes. Tomasello et al. (2005) suggest this developmental distinction is evidenced in humans by the incapacity of the infant at this age to draw on objects in the environment as a source of intersubjectivity (Tomasello et al., 2005).

On the other hand, Trevarthen's (1986, 1996; see also Delafield-Butt & Trevarthen, 2013) work supports the view that very young infants are capable of orienting dialogues in more sophisticated ways than previously thought. Trevarthen's concepts of 'interactional synchrony' and 'communicative musicality' view infant interaction as a "precisely regulated rhythmical exchange of interests and feelings" (Trevarthen, 2011, p. 127). Such a view suggests that infants' protoconversational behaviours play a significant role in regulating adult language within the exchange. Drawing on these insights, Montirosso, Cozzi, Tronick, and Borgatti (2012)

found significant differences in the use of gesture of the 6–12 month old infant depending on the context of the relationship with their mothers. For instance, infants reduced their dyadic communication when their mothers were less interactive and preferred to use self-directed gestures such as touching a surface, or their own body. These and findings by Gaffan, Martins, Healy, and Murray (2010) suggest that infants' social acts are influenced by the adults' ability to respond to, match or supplement the infant's gesture by jointly attending to infants' experience. Taken together, these findings support the idea that infant interactions are a dialogic event where two distinct consciousnesses meet to try to understand one another. This idea is a central premise of dialogic theory (Bakhtin, 1990).

Dialogue as the core of infant pedagogy

The notion of 'infant pedagogy' is a relatively recent concept arising out of the contemporary international trend for infants to attend formal educational contexts (Johansson & White, 2011), the inclusion of infants in curriculum documents (White & Mika, 2013), and increased attention to the role of the adult as an intersubjective partner in communication. The specialised nature of infant pedagogy emphasises adult interpretations of infant language and its meanings. According to Tomasello et al. (2005), infant language should not be reduced to expressions of communicative intentions but ought to pay attention to the different kinds of motivation involved in infant communicative acts. For example, the objective of getting food when hungry may orient the infant more towards one type of language form – smile, sound, gesture and so on – at the exclusion of another. In order to achieve intersubjectivity the adult must be attuned to infant motivations that orient the language and the language forms that are selected as a combined route to interpretation (a point also made by Snow, 1977).

The additional challenge for non-familial adults (e.g., ECE teachers) to interpret meaning creates the basis of infant pedagogy as a teaching and learning process "that gives primacy to the voices of infants..." (White & Mika, 2013, p. 95). Relationships as a primary source of curriculum are emphasised by Biringer et al. (2012), whose observations of 57 infant–teacher dyads revealed a lack of caregivers' sensitivity towards infant language cues in social exchange. By introducing structured dialogues, the researchers supported teachers in becoming more aware of their own responses in matching infants' intentions. This helped increase infants' emotional security and feelings of connectedness. Similarly, Pinazza's (2012) "explicit pedagogy" (p. 584) also highlights the importance of teachers' awareness of their own responses in communicative exchange with infants for the infant's well-being (Schoonmaker & Ryan, 1996).

While dialogic research has investigated teacher–child dialogue from the perspective of an observer (i.e., researcher), from a dialogic standpoint (Odegaard, 2007; Rasku-Puttonon, Lerkkanen, & Poikkeus, 2012), and by asking teachers to articulate their style of communication (Tam, 2012), less is known about the nature of dialogue that takes place in ECE contexts from the perspective of an infant. Drawing on Siraj-Blatchford's (2010) assertion that quality ECE dialogues are characterised by verbal episodes of sustained shared thinking, a recent New Zealand study compared the duration of verbal dialogues between infants and qualified/unqualified teachers (Meade, Robinson, Smorti, Stuart, & Williamson, 2012). The authors contend that qualified teachers are more likely to engage in 'quality' infant–teacher dialogues through verbal language on the assumption that it invokes cognitive challenge for infants. This finding starkly contrasts with the growing body of work calling for greater emphasis on the use of the *body* in work with very young children. In addition to verbal dialogue, gesture, body movement and silence are also viewed as legitimate

forms of dialogue in infant education (White & Mika, 2013). Such approaches reinforce the claims of Aguiar and McWilliam (2013) whose investigation of 14- to 36-month-old toddlers in ECE highlights the influence of "individualised, responsive, stimulating and affectionate interactions" (p. 108) as forms of engagement (and non-engagement). They respond to Delafield-Butt and Trevarthen's (2013) appeal for studies that investigate "how movements are made and sensed on affective company" (p. 16), Johansson and Lokken's (2013) notion of 'sensory pedagogy,' and Lensmire's (1997) call for teachers to pay attention to the "whispered, unuttered words of the next generation" (p. 381) as a primary source of dialogic encounter are important to this conceptualisation. These features of dialogue that take into account non-verbal forms of communication are viewed as equally important in a dialogic investigation of infant communication (Junefelt, 2011). Here, the body plays a central role in interpretation on the part of the adult who seeks to understand the infant (Cresswell & Teucher, 2011).

ECE in New Zealand: infants as competent learners

The current study was conducted in a New Zealand ECE setting where a unique policy (Mutch & Trim, 2013) and curriculum framework (Ministry of Education, 1996) gives infants status as competent and capable learners alongside their older peers (White & Mika, 2013). New Zealand ECE services are monitored by the Education Review Office who review and report publicly on the quality of education and care against national criteria which requires standards for curriculum, consultation, and governance and specifies the qualifications needed (Ministry of Education, 2008). A qualified ECE teacher in New Zealand – regardless of the age of children they work with – is one who holds an ECE teaching qualification (for example a 3-year ECE degree) that is recognised by the New Zealand Teachers' Council for teacher registration purposes (a subsequent 2-year registration process).

New Zealand ECE services licensed under the 2008 regulations are required to adhere to adult child ratios of 1:5 for children younger than two years (Parliamentary Counsel Office, 2008). Although a key teacher system was not legislated in New Zealand at the time of the study, many teachers were committed to this approach. A key teacher is one who has special responsibility for a particular infant (Dalli, Kibble, Cairns-Cowan, Corrigan, & McBride, 2009; Elfer, 2006; Goldschmied & Jackson, 2004; Rockel, 2003), taking overall responsibility for their education and care as a means of promoting secure attachments in early childhood education (Elfer, 2006; Rockel, 2003).

The present study

The present study examined teacher–infant dialogue as a pedagogical imperative – based on national curriculum goals and standards that emphasise the specialised role of the teacher as an intersubjective partner in the educational experience of the infant. The New Zealand early childhood curriculum framework – *Te Whāriki* (Ministry of Education, 1996) consists of aspirations, principles, strands and goals that are "shared across all age groups, [and which] provide specific guidance, in the form of examples for teachers working with each age category, to meet curriculum outcomes" (White & Mika, 2013, p. 96). For the infant teacher, reciprocal dialogues are central to this curriculum, which fosters experiences where "adults communicate with infants through eye and body contact and through the use of gestures" (Ministry of Education, 1996, p. 75). Associated pedagogy calls for teachers to engage in meaningful encounters with infants as a primary source of intersubjectivity (Dalli et al., 2011;

The aim of this study was to investigate the nature of dialogic experience for infants in an ECE setting. As already explained, a

dialogic experience is interpreted to mean the meeting place of different subjectivities in communication, their interplay and interpreted meanings by those involved. To this end, two questions were asked:

- i. How do infants and teachers initiate and respond to dialogue?
- ii. How do teachers 'see' dialogue as part of their pedagogy?

The first question called for a finely tuned analysis of the different types of dialogue that took place between infants and their teachers in the ECE setting on a moment-by-moment basis; while the second question invited teacher point-of-view on what aspects of this dialogue held pedagogical significance for them. From a dialogic standpoint, both avenues represent an operationalization of the concept of 'utterance,' which is described by Bakhtin as "the language of life" (Bakhtin, 1986, p. 63) where all forms of language are viewed as "a link" in a dialogic "chain" (Cohen, 2009, p. 334). What this meant for the study was that all types of language and their interpreted meanings were viewed as central to the analysis.

Method

Participants

The centre

The research took place in a high-quality education and care centre for children under the approximate age of two years, (older toddlers were located in an adjacent building with a shared outdoor area). The high standard of this centre, based on all global and local 'quality' criteria scales as identified by Zaslow et al. (2010), was determined by a number of features: (i) ratios of no more than 3 infants to 1 teacher (almost half of the prerequisite requirement of 1:5) at the time of this study; (ii) small group size of no more than ten infants in the centre at any one time; (iii) highly qualified teachers who engaged in ongoing professional development; (iv) teachers who were paid well above minimum requirements; and (v) supportive management structures. As such, many of the variables that commonly represent barriers to positive interaction (Ahnert, Pinguart, & Lamb, 2006) are eliminated in this study.

Teachers and infants

Two infants and their two key teachers took part in this study. Both key teachers were experienced, qualified (three year degree plus two-years registration) professionals who had worked together in this centre for a number of years. A commitment to the key teacher system was evident throughout all practices in the centre ranging from settling infants into the setting, to important decisions that were made concerning their welfare throughout the day. The centre additionally offered a 'buddy system' whereby a surrogate teacher had a sufficiently well established relationship with each infant to maintain attachments in the absence of the key teacher.

Two infants were selected for this study on the basis that they were (i) under one year of age, (ii) attended the centre on a full-time basis and had already spent at least three months in the centre, and (iii) remained with the same key teacher during that period. It was anticipated that stable, long-term experience with the same adult (i.e., teacher) would minimise any additional barriers to effective dialogue such as poor teacher–child ratios, large group size, and unqualified teachers, a point also argued by Umemura, Jacobvitz, Messina, and Hazen (2013). A four-month-old male infant had attended the centre full-time (that is, 8 h days, five days a week) for the three months prior to filming, under the care of his key teacher. At the time of the study, the younger infant was not yet able to locomote independently and relied on adults for mobility.

The 10-month-old female had attended the centre full-time for five months prior to filming, under the care of her key teacher. She was on the cusp of crawling at the time of filming and spent considerable time rolling, reaching, and sliding backwards to achieve her goals.

Thirty additional participants were involved in the study and gave their consent for filming. They were either other infants (under-two year old peers) or adults (other teachers who entered into the setting, a buddy teacher, and family members arriving and departing with their infants) who were in the centre during filming and, as a consequence, moved in and out of the camera view.

Approach

Understanding how social events were viewed by participants called for an approach that would provide a means of 'seeing' encounters through the eyes of each participant. Bakhtin explains that 'seeing' is "saturated with all the complexity of thought and cognition" (1986, p. 27) and advocates for approaches to interpretation that take into account the viewpoint of others as a polyphonic (that is, multi-voiced) entreaty offering additional insight (or visual surplus).

A polyphonic method emphasises the importance of allowing multiple voices to speak, as much as possible, for themselves while benefitting from the visual surplus of others. In the present study, this approach captured the complexity of dialogue from the visual perspectives of (i) the two infants, (ii) their key teachers, and (iii) the lead researcher. The method was developed by the first author (White, 2009) to capture complex and subtle language forms and their responses (as genres of meaning) for very young children in dialogue with others. While no claim is made that such visual means can (or should) provide access to an infant perspective, entry into the visual field of infants, provides first-time glimpses of the social world they inhabit from the infant's perspective and, as such, provide important insights into their social world. 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).

The positioning of the cameras on the forehead of each participant allowed the researcher to 'see' the different perceivable visual fields experienced by each participant of the same event. This allowed for interpretation to consider different views of reality according to the visual perspective of each participant. Using four cameras allowed the researcher to capture more than would have been revealed through the lens of a single observer camera. For example, some interactions were not captured by the researcher's camera lens because another person standing in between the infant and the camera lens obstructed this view. Since each event was recorded by at least two other cameras there was a greater potential to capture the event's complexity. This addresses Elwick, Bradley, and Sumsion (2013) suggestion that infants do not have the opportunity to challenge or confirm interpretations of their experience even if their visual field is represented. While this is, in many respects, developmentally inevitable, we argue that the use of polyphonic methodology, and where possible, participants' views on the perceived events, provide a basis for in-depth analysis of experience that transcends previously known perspectives of infants' social experience.

Procedure

During each video recording session, *nano-pods* (a small video camera), safely sewn into soft, foam backed headbands (cam-hats)

were placed on the foreheads of two infants and their key teacher. A fourth *nano-pod* was held by the researcher or, where possible, attached to the wall nearby. *Nano-pods* were lighter than cameras used previously in studies with older infants (Bradley, Sumsion, Stratigos, & Elwick, 2012; Elwick, Bradley, & Sumsion, 2014; Sumsion & Goodfellow, 2012; Sumsion, 2014; White, 2010) and therefore considered more appropriate for the soft head of a very young infant. Due to the age of the infants (4 months and 10 months, respectively), the space (e.g., the size and the layout of the centre) and the complexity of center's routines, only one researcher could be present in the centre during filming of infant–teacher dialogues. Infants' sleep routines, health issues (on two occasions one of the infants was absent due to illness), well-being of the infants (as determined by parent and key teacher), staff rosters, and the wider centre context were taken into account when filming – on several occasions filming was interrupted or cancelled altogether.

In total, across both key infants, 180 min of footage was recorded over four days (morning and afternoon) matching infants' sleeping and waking patterns and the dynamics of the education and care setting. After the initial data cleaning, 163 min of recorded data were processed for further analysis (83 min for one infant and 80 min for the other infant). The four video tracks (i.e., key infant, key teacher, peer, and the researcher) were synchronised and uploaded into video analysis software *Studiocode 3.0*. The two key teachers were provided with a copy of the synchronised film and were invited to independently identify up to 20 min of footage that was of pedagogical significance to them. Teachers were asked to consider the infants' social experiences with teachers and peers, their intentions associated with particular initiations, the teachers' responses the role of the teacher in the selected events, and the pedagogical decisions teachers made and why (e.g., was there a historical and/or philosophical underpinning to their role and decisions). These video-inspired interviews are described by White (2009) as 're-probing interviews' because they provide opportunities for participants to look at previous events with the assistance of probing questions that may invoke new ways of looking at the experience.

According to White (2009), the concept of re-probing interviews provides a richer visual surplus to the participants. It does not merely seek to stimulate memory or recall so much as invites an expanded point-of-view of the events – an idea that is consistent with dialogic approaches and acts as an essential form of validity (Sullivan & McCarthy, 2005). In the present study, the re-probing interview provided important contextual information necessary to grasp the meaning of social events and their relationship to pedagogy from the perspective of the teachers themselves. This provided a level of validity that is achieved when the research is seen as relevant to the participants and their community; the research findings were subsequently shared with teachers prior to public dissemination. This process generated additional levels of analysis that had not previously been available to the researchers, for example the significance of eye contact in infant–teacher dialogue (White et al., *in press*).

Video data coding

Because it was important to understand the visible event of dialogue and the nature of interactions, classification of events was generated out of the data themselves based on the work of Markova and Linell (1996). To this end, we employed a dialogic methodology within a mixed-method approach, including the quantitative analysis of language-use in social contexts. From a dialogic analysis standpoint, actual words, gestures or sounds may not be the central issue; rather what is of interest is what language forms evoke in another. This resonates with Batory, Bąk, Oleś, and Puchalska-Wasył (2010) who suggest that dialogic research is concerned with multiple I–you positions in time and space.

For this reason, data were generated based on what the participants 'see' (captured on video) and how this is interpreted in the event itself. Thus, both language forms and interpretations of meaning were analysed. Teacher re-probing interviews played a vital role in the analysis since there are inevitable limitations to accessing infant perspectives on their experience beyond visual insights. Within *Studiocode*, verbatim transcripts of teachers' commentaries were time-aligned with the coded footage.

For both teachers and infants, codes were created for verbal and non-verbal (separately and combined) interaction initiations and responses. Each instance of an interaction initiation and of a response was coded according to the language form used. When an initiation–response sequence included multiple exchanges between the same two actors, only the initial initiation and the initial response were used in the analysis. Initiation and response actions were categorised into three different types according to the presence or absence of the particular language form: (1) verbal (e.g., vocalisation, sounds), (2) non-verbal (e.g., hand movements), and (3) verbal and non-verbal (e.g., vocalisation and synchronised hand movements). If an interaction was initiated and was not followed by a response, this lack of any perceivable (visually or aurally) response was coded as a non-response; for example if an infant initiated an interaction by making sounds and touching the teacher and the teacher did not respond to this initiation teacher's lack of response was coded as a non-response.

Since a dialogic approach to 'utterance' is determined not only by the forms of language that are employed but also by the responses (or non-response) in the social event, types of language employed were classified in terms of their social orientation. These were evident in the infant and teacher camera lens. Initially, 32 fine-grained categories of 'language' were identified based on multiple viewings of the polyphonic footage. These ranged from verbal forms of communication such as crying, laughing, or mimicking sounds to non-verbal forms such as look or a touch. For quantitative data analysis, these initial categories were compressed into 11 language form categories. Table 1 summarises coding definitions of these language forms.

Validation variables

To establish reliability throughout the coding process, all 163 min of footage were independently coded – firstly by the lead researcher and subsequently by the research assistant. Due to the visual nature of recorded data, it was possible to check and re-check classifications and coding to ensure accurate analysis. Added, altered, or deleted instances were manually recorded and aligned with the time each addition or amendment occurred, enabling identification of any alteration that required review. These were checked with the lead researcher who agreed with all amendments. To assess the level of agreement between the two coders, we calculated the Cohen's Kappa statistic. In our study, the number of observed agreements between the two coders was 447 (91.41% of the observations) and the Cohen's Kappa was 0.72 (95% CI: [0.65, 0.80]), indicating a good (substantial) strength of agreement. We suggest this high level of agreement may be partially attributed to a coding system that was bottom-up, data driven, in contrast to top-down, pre-existing-codes driven systems (as is typically the case in social scales – see Colwell, Gordon, Fujimoto, Kaestner, & Korenman, 2013).

Data analysis

Out of 180 min of video footage, 200 teacher-to-infant initiated interactions and 79 infant-to-teacher initiated interactions were coded. Data from *Studiocode* were analysed using Statistical Package for the Social Sciences (*SPSS*, v.20) software. An alpha level of at least .05 was used for all tests of statistical significance. Two

Table 1
Initiation and response language form categories, coding and definitions.

| Type of initiation and response | Source | Code | Definition |
|---------------------------------|----------------------|---|---|
| Verbal | Infants and Teachers | Sounds | Non-linguistic noises, excluding cries (e.g., high pitched /æ/) |
| | Infants and Teachers | Other vocalizations | Words and sounds as in singing crying or laughing |
| | Teachers | Verbalises | Utterances of more than one word |
| Non-verbal | Teachers | Emotional gesture | Body or facial movements conveying emotion (e.g., hugs, smiles) |
| | Infants and Teachers | Touches body of other | Using hands or body to make contact |
| | Infants and Teachers | Extremities movement | Movement that involves the head, hands legs or arms (e.g., reaching, nodding) |
| | Infants and Teachers | Gaze | Extended 'look' into the eyes of other |
| | Infants and Teachers | Use of object | Offers or receives food item or object |
| | Teachers | Puts down | Infant is placed on the floor, in bed or in a chair |
| Teachers | Picks up | Infant is picked up off the floor, out of bed or out of a chair | |
| Infants | Whole body movement | Rolls or shuffles body | |

tailed p -values are reported throughout the results section. Non-parametric tests (i.e., χ^2 test) were used to explore the differences between the frequency of kinds of initiations, responses, and forms of language used.

Teacher re-probing interview data was considered against the findings by time aligning each transcript against the relevant poly-phonic video footage. With the insights of teachers, the researchers were able to gain additional understanding of the meaning of specific events and, in many cases, return to the data for further investigation (White, Redder, & Peter, 2013). Contrary to our expectations, there was very little difference in the number and type of interactions between the 4-month and 10-month old infant in dialogues with their key teachers. Consequently the data from both infants were aggregated for the analysis.

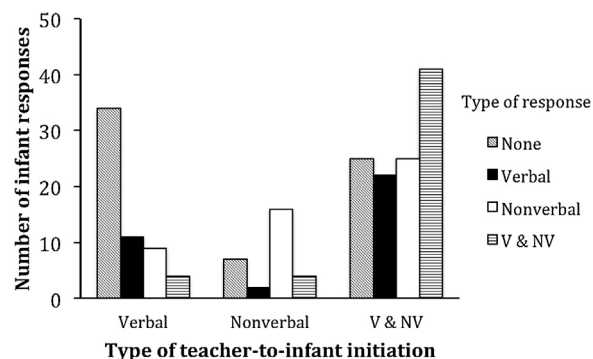
Results

The findings are presented in two sections: (1) analysis of the nature and frequency of teacher–infant communicative initiations and the nature and frequency of infant responses to those initiations, and (2) analysis of the nature and frequency of infant–teacher communicative initiations followed by the nature and frequency of teacher responses. In both sections, quantitative analysis of language forms in infant–teacher/teacher–infant dialogue is followed by qualitative examples of their pedagogical significance. Together, they elucidate the dialogic experience for participating infants and their teachers.

Teacher initiations and infant responses

Overall there were 200 teacher-to-infant initiated interactions. The most frequently occurring initiations were verbal and non-verbal combinations (113). These were followed by verbal (58) and non-verbal initiations (29). The difference in the frequency with which these three types of initiations occurred was significant, $\chi^2(2) = 54.61$, $p < 0.001$. Namely, combinations of verbal and non-verbal teacher initiated interactions occurred significantly more often than the other types of initiations.

Out of 200 teacher initiations, infants responded 134 times. On 66 occasions, they did not. As Fig. 1 conveys, infants were

**Fig. 1.** Number of infant responses to teacher initiations.

significantly more likely to respond when the teacher made a verbal and non-verbal combined initiation (88) compared to verbal (24) or non-verbal (22) initiations, $\chi^2(2) = 63.10$, $p < 0.001$. Conversely, infants most frequently *did not* respond when the teacher initiation was verbal (34) or verbal and non-verbal combined (25) while the non-verbal initiations resulted in significantly fewer infant non-responses (7), $\chi^2(2) = 17.18$, $p < 0.001$.

As can be seen in Fig. 1, across all types of teacher initiations, there were 49 infant verbal and non-verbal combined responses. They occurred significantly more often when teachers initiated the interaction using verbal and non-verbal combinations (41) than only verbal (4) or only non-verbal initiations (4), $\chi^2(2) = 10.12$, $p < 0.01$. Table 2 summarises the types and frequency of teacher interaction initiations and corresponding infant responses.

When initiating an interaction, the most commonly used non-verbal language form by teachers, either in combination with verbal language or not, was to offer an object or touch the body of the infant. In their verbal initiations, teachers tended to use words rather than sounds or other vocalizations such as laughter. Infant non-verbal responses were typically comprised of bodily movements, such as waving arms, and offering or receiving objects. Verbal responses by infants were most often characterised by sounds. Table 3 highlights the combined verbal and non-verbal language forms used by infants in their responses to teacher initiation. It clearly shows that infants responded to teachers predominantly

Table 2
Type and number of infants' responses (including non-response) to teachers' initiations.

| Type of infant responses | | | | | | | |
|-----------------------------|--------|------------|--------------------------------|--------------|----------|------|-------------------|
| Type of teacher initiations | Verbal | Non-verbal | Verbal and non-verbal combined | Non-response | χ^2 | df | Total initiations |
| V & NV | 22 | 25 | 41 | 25 | 7.88* | 3 | 113 |
| Non-verbal | 2 | 16 | 4 | 7 | 15.83** | 3 | 29 |
| Verbal | 11 | 9 | 4 | 34 | 4.00* | 1 | 58 |

* $p < .05$.** $p < .01$.

Table 3
Infant verbal and non-verbal combined responses.

| Infant verbal language form | Infant non-verbal language form | | | | | Total |
|-----------------------------|---------------------------------|-----------------------|---------------------|----------------------|------|-------|
| | Use of object | Touches body of other | Whole body movement | Extremities movement | Gaze | |
| Sounds | 15 | 4 | 8 | 13 | 2 | 42 |
| Other vocalizations | 2 | 1 | 2 | 2 | 0 | 7 |
| Total | 17 | 5 | 10 | 15 | 2 | 49 |

using combinations of sounds and large or small body movements. To a lesser extent, infants responded using combinations of laughter or crying and large or small body movements. Of particular note is the larger number of responses employing sounds in combination with the use of objects. Although gaze was used in combination with sounds only occasionally, this finding was of great significance to the teachers in their commentaries (a point we will return to shortly).

The following excerpts highlight examples of teacher initiation and infant response characterised by these language form combinations accessible through multiple lenses:

Key teacher says, “Here you go, look some Harakeke (flax plant)” as she offers the ten-month old infant a flax flower. The infant makes accentuated breathy sounds as she accepts the flax flower, rolling her body from side to side while watching the teacher. The teacher and infant both make “aaahh” sounds while the teacher tickles the infant’s feet and the infant sucks the flax flower.

These types of interactions were typical of the way teachers and infants in this centre engaged in sustained dialogue that teachers described in their interview as being “totally responsive” and

Word + touch + offers object teacher initiation x body movement + sounds + receives object infant response



Key teacher verbalizes: “Heeey, whaaat, I have to go and look what the time is, yes I do” to the four-month-old infant as she simultaneously touches his body. She then offers the infant a wooden toy. The infant waves his arms and legs whilst making “ouh aah” sounds in response. He receives the toy.

Word + offers object teacher initiation x sounds + body movement infant response



Table 4
Teacher verbal and non-verbal combined responses.

| Teacher verbal language form | Teacher non-verbal language form | | | | | Total |
|------------------------------|----------------------------------|-----------------------|----------------------|------|-------------------|-------|
| | Use of object | Touches body of other | Extremities movement | Gaze | Emotional gesture | |
| Verbalises | 7 | 4 | 4 | 1 | 3 | 19 |
| Sounds | | 4 | 1 | 2 | 1 | 8 |
| Other vocalizations | 2 | 1 | | 1 | 3 | 7 |
| Total | 9 | 9 | 5 | 4 | 7 | 34 |

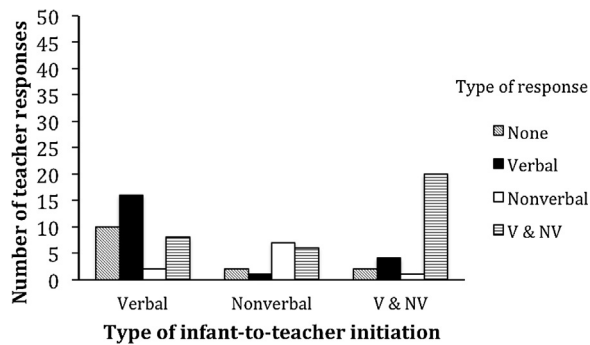


Fig. 2. Number of teacher responses to infant initiations.

“fully present” with infants. Teachers commented that their primary pedagogical responsibility was to “tune in” to the language of the infant. As one teacher said: “It’s what we do.” Teachers highlighted non-verbal language initiations to be of considerable pedagogical significance and a potential source of intersubjectivity. This is further illustrated in the following example, which the teacher selected as a significant pedagogical event.

Demonstrates with object + smile + offers object teacher initiation x reach + receives object infant response



The teacher explained its significance: “...I provided the provocation for her at the beginning [by banging the blocks together, leaning forward and smiling] and then invited an extension on that [offering the blocks to the infant]. ... She takes the blocks; I just love that, straightaway.”

The pedagogical importance of this teacher–infant dialogue, for this teacher, lay in the fact that it highlighted the importance of initiation–response sequences even when no oral language is used. This was especially prominent when infants were initiating the interactions as the following section conveys.

Infant initiations and teacher responses

Infants initiated interactions with teachers on 79 occasions. Of these, they most frequently used verbal (36) and verbal and non-verbal combined language forms (27) while the non-verbal initiations were the least frequent form of initiations (16), $\chi^2(2) = 7.62$, $p < 0.05$ (see Fig. 2).

For verbal infant initiations, sounds (24) were employed significantly more often than other vocalizations (12) such as cry or laughter to initiate interaction with the teacher, $\chi^2(1) = 4$, $p = 0.05$. When infants employed non-verbal forms of language to initiate an interaction, they most frequently waved their arms and legs, offered an object, or touched the body of another.

To 79 infant initiations, teachers responded on 65 occasions and did not respond on 14 occasions. Of the 65 responses, 34 were verbal and non-verbal combinations (see Table 4). They occurred

significantly more often when infants initiated the interaction using verbal and non-verbal combinations (20) than either verbal (8) or non-verbal initiations (6), $\chi^2(2) = 55.88$, $p < 0.001$. Looking just at infant’s verbal and non-verbal combined initiations, teachers responded significantly more often with verbal and non-verbal

combinations (20) then either verbal (4), non-verbal (1) or a non-response (2), $\chi^2(3) = 35.37, p < 0.001$.

Table 4 highlights the combined verbal and non-verbal language forms used by teachers in their responses to infant initiation. As for the infant responses, teachers tended to use combinations of verbalising in tandem with objects or with use of the body. An additional language combination employed by the teachers was the use of verbalising alongside emotional gestures such as kissing and hugs. Noteworthy is the additional emphasis teachers placed on sounds in association with body movements and emotional gesture demonstrating the teacher's tendency to match infant's styles of communication.

The following excerpt is typical of the kinds of infant–teacher dialogues that took place:

Sounds + body movement infant initiation x touch + sound teacher response



The 4-month-old infant looks at his key teacher and makes low, growly sounds while waving his arms and legs. The teacher responds by touching the infant's body and making similar low growly sounds.

Teachers placed a great deal of value on infant initiations in their interview, seeing them as the source of pedagogical intervention, or non-intervention because they invited dialogue. As one teacher explained, the significance of these invitations to their overall pedagogical engagement meant that she had to maintain constant vigilance concerning the cues that were being offered and associated judgments about when to respond appropriately: "I'm obviously watching this very closely, and responding to, to carry on that dialogue with him." Teachers also explained the significance of deliberately standing back from initiating dialogue themselves in order to create further opportunities for the infant to convey their priorities, utilising the language forms at their disposal. The following commentary highlights the teacher's vigilance in response to the infant's initiation of offering an object, in this case a doll:

Word + offers object infant initiation x word + touch teacher responses



Teacher explained . . . so we did boo this day. Lots of talking and I'm responding – saying "baby" when she says it . . . sometimes it's not even about the verbal communication it's—I'm there and I'm watching what she's doing with the scarves and it's OK not to talk all the time. Like I'm there and she knows I'm there. . . Role modelling here for [peer and infant] is completely watching what I was doing with that baby (doll). And she passes the baby (doll). . . This is what I call totally in the moment, like totally engaged in what we are doing.

Teachers also explained the pedagogical significance of infant-to-teacher eye contact, which they described as a gaze that might take place across a room or during an intimate exchange

during routines such as bottle-feeding or sleep time. One of the teachers interpreted this act as a further invitation to interaction. In the following example, selected by the teacher for its pedagogical significance, the importance of catching the infant's eye as a source of initiation is conveyed:

Sustained look + sound “B” x sustained look + sound “Boooo”



...so I'm feeding [four-month-old infant] with his bottle and she's [ten-month old infant] sitting nearby where she has been for a long time . . . she looked at me first, so she saw that I was looking at her and she looked up and looked through the basket frame and said “boo” and so we responded with that 15 seconds of total responsiveness to each other. That was significant to me because things like that must happen all the time and you don't notice.

Discussion

Taken together, these results convey the dialogic exchange in this high-quality ECE setting as one that is highly responsive to the types of language forms employed by the initiator, regardless of whether they are teachers or infants. However, the nature of initiations differed between the two parties—infants were more likely to respond to teachers when teacher initiations were comprised of verbal and non-verbal combinations. That the responses to both teachers' and infants' initiations, when these were verbal and non-verbal combinations, were significantly more likely to be also combinations of verbal and non-verbal language forms is of special significance. The greater number of combined types of responses to verbal and non-verbal combined initiations indicates that dialogue can be conceptualised as a series of communicative exchanges that are much broader than merely words. Indeed, words alone held the *least* potential for reciprocal dialogue over all types of language exchange. These findings expand on the thesis of Trevarthen and his colleagues (2009, 2013) by suggesting that synchronous interaction (i.e., physical and verbal orientations between infant and other as a means of intersubjectivity) is not only a primary goal of infant social experience in mother–infant dyads but is also reflected in teacher–infant dialogue in ECE. Here, Junefelt's (2011) assertion

that language is both “taught and caught” (p. 173) is evident in the use of matching, mirroring, and expanding dialogues that are consistently utilised by teachers and infants alike.

The strategic employment of gesture on the part of both infants and teachers (with or without verbal combinations) is a strong

feature of these interactions. Infants readily utilised their bodies to initiate and respond to teachers while teachers keenly observed infants for language cues that they could employ in their responses. These findings corroborate substantial evidence supporting the existence of coupling between arm movements and vocalisation as early as six months (see Iverson, 2010). They also support the assertion of Goldin-Meadow and Alibali (2013) that gesture is central to language meaning and, when considered in educational situations, play an important role in generating meaning. For the teachers in this study, establishing and maintaining dialogue in its broadest sense was central to their pedagogy.

The results suggest that infants were trying equally hard to play their part in this dialogic exchange by using every language means at their disposal to initiate and respond to teachers. While infants employed a variety of language forms to initiate and respond to teachers, the strategic use of objects warrants special attention in light of prior claims for this age group. In the present study, infants and teachers alike employed objects as a means of initiating dialogue. Teachers offered objects to infants as a form of initiation on 17 out of 49 occasions, while infants offered objects to teachers 9 out of 34 times. In contrast to the assertions of Tomasello et al. (2005), it seems that these young infants are not only able to respond to teachers' use of objects as an invitation to dialogue but they are also capable of drawing on objects as a potential source of intersubjectivity. This may be due to the modelling of object-use by their teachers together with the fact that these dialogues are located in an ECE environment that is rich with resources that are readily available to infants. In a dialogic sense (Bakhtin, 1986) it seems that the use of objects is an important genre for infants in this setting and, along with the use of gesture and sound, plays an important role in establishing and maintaining shared meaning between teachers

and themselves. A further consideration lies in the key teacher system in this ECE setting where infants and teachers knew each other intimately and had already established a shared understanding which [Tomasello et al. \(2005\)](#) consider to play a key role in the type of goal-oriented language events that took place in this study.

Turning to [Bakhtin's \(1981\)](#) dialogic imperative that language gives form to another, these findings extend the field of infant communication well beyond a one-way 'gifting' or transmission on the part of the adult to the infant. Teacher responses called for a combination of forms that drew from the familiar, embodied language of the infant rather than their own (verbal) language preferences. [Gaffan et al. \(2010\)](#) suggest that this ability to respond by appropriately matching or supplementing infant gesture is key to the quality of the exchange ([Johnston, 2011](#); [Manning-Morton, 2006](#); [Test, 2006](#)). At times, infant gestures were very subtle, such as a gaze or wave of the hand, but were nonetheless seen as highly significant pedagogical cues by the teachers who oriented their responses accordingly. In keeping with [Cresswell and Teucher's \(2011\)](#) claim that the body plays a central role in dialogue, infant-teacher dialogues were characterised by the work of the body as a primary source of communication.

In alignment with [Pinazza's \(2012\)](#) suggestion that being attuned to the significance of one's response is a key feature of effective pedagogy, our findings highlight the attention teachers pay to infant non-verbal cues as a means of perceiving infant motivation (a point also raised by [Snow, 1977](#)). This was evident in the teachers' additional use of emotional gestures such as hugs or kisses, in response to perceived infant orientations. Teachers' responses varied in accordance with their understanding of infant priorities, ranging from expansions of non-verbal initiations with verbal and non-verbal combination responses or, conversely, teachers' non-responses which they described as pedagogically oriented acts of "standing back" or "being present".

At both extremes of teacher responses – those that sought to expand on the dialogue by supplementing non-verbal language with words and those that appeared to be completely non-engaged – there was a persistent purposeful articulated pedagogical rationale for the nature of response (or non-response). The sophisticated nature of response to the subtle orientations of infant language is articulated by [Recchia and Shin \(2012\)](#) as a means of being 'in synch' with infants: a feature of practice now considered to be a pedagogical priority for infant teachers.

Limitations

The results of this study need to be interpreted with caution due to the very small number of infants involved. A larger study, with more participants, over a longer period of time and across multiple sites would generate a much richer understanding of the dialogic experience of infants. Not only would a larger study enable comparisons of the nature of language initiations and responses between multiple sites, but it would also yield a greater understanding of the pedagogical significance different teachers place on specific language acts. The teachers in the present study shared a similar philosophy and brought shared experience to their interpretations of infants' interaction initiations. Further investigation with a wider group would highlight the different pedagogical priorities and practices for teachers across diverse sites. Moreover, a larger sample size and/or a longer period of fieldwork would provide a greater reliability and generate more opportunities to observe statistically significant differences in the frequency of different interaction initiation and response types.

A further area of consideration our current research design did not allow for was the analysis of interaction sequences over time. In keeping with [Volosinov's \(1973\)](#) consideration that dialogues are not always "integrated into one unified context" (p. 116)

dialogues can take place over intervals of time and may be interpreted outside of a single exchange. [De Jaegher, Di Paolo, and Gallagher \(2010\)](#) describe such dialogues as "synchronisation sequences" (p. 441). Analysis of the present study reveals a fundamental issue in viewing any language form as a discrete phenomenon, suggesting the need to devise an approach to coding that includes both duration and structure of dialogues beyond the immediate exchange. This paper has not explored duration of events (for example which combinations of forms generate longer sequences) nor has it fully considered the impact of one event upon another – all of which are important in a dialogic context. The pedagogical significance of aspects of dialogue such as tonality are also important components of the dialogic experience ([Junefelt, 2011](#), see also [Malloch & Trevarthen, 2009](#)) which were not captured in the present research design. This is an important consideration in future dialogic research with very young infants in ECE settings.

Implications for future research and practice

In light of these findings, [Meade et al. \(2012\)](#) exclusive emphasis on verbal language as a primary indicator of quality ECE for infants requires significant revision. Future research in ECE settings could benefit from taking a much more expansive view of language in attempting to understand the experience of infants as collaborators in the dialogic exchange rather than as merely recipients of transmitted language. The extent to which infants shape the nature of teachers' responses appears to hold as much, if not more, significance than the influence of teacher initiations on infant responses and, by association, learning. This is also an expansion on [Bakhtin's \(1990\)](#) early assertions that infants 'receive' language from the adult. While there is clear evidence that the teacher plays an important role in using verbal language in interaction with infants in the present study, this is by no means the only form of language that plays a role.

These findings validate the importance of seeking teacher point of view concerning the nature of their initiations and responses. Through this route, greater attention could be paid to teachers' articulation of their pedagogical priorities in tandem with associated responses or non-responses. In so doing, a much richer picture of the pedagogical event will emerge, especially if this is considered from diverse cultural perspectives. It would be interesting to discover, for instance, if teachers working with infants across diverse curricula give the same priority to dialogues of this nature, and how these are seen in relation to learning. Not only would such insights reveal the different types of dialogues employed by teachers across different pedagogical sites but they could also provide a useful tool for the professional development of teachers who seek to understand the nature of their dialogues in accordance with their pedagogical goals. As [Manning-Morton \(2006\)](#) and others have considered, investigating the relationship between espoused and real practices (as well as their perceived purposes) is an important focus for infant teachers who seek to understand and improve their practice.

The results of this study position the infant as an intersubjective partner in the dialogic space(s) in which they are located. On the basis of these findings, we are less convinced than [Tomasello et al. \(2005\)](#) that the different types of language employed by older infants are an indication of more intentional awareness of the other. While we do not discount such a proposition, this study does not suggest a developmental distinction, rather that the intention of younger infants language acts may be subtler and therefore less obvious to the adult. We concur with [Vaish and Woodward \(2005\)](#) who state caution in drawing universal conclusions regarding infants' intentions as an indication of social competency, since researchers, like teachers, assign motivational propositions to language that are culturally and

ideologically asserted. Notwithstanding this cautionary note, paying attention to the orientations of infant language and its complex forms in each moment-by-moment encounter through the visual surplus offered in polyphonic footage clearly makes an important contribution to research on infant–teacher dialogue.

Through the infant visual field, this research has had access to infant experience beyond third-party observation, revealing the subtle interplays that take place. These go beyond mere imitation, transmission, or replication to reveal strategic language encounters by both teachers and infants in this ECE setting. Increased attention might also be given in future related research to the indirect language of the infant in the wider social milieu of the ECE setting. The additional presence of the peer group and other adults creates a further contextual variation for investigation of the dialogic space that makes up this context. A more sophisticated camera would illuminate the wider visual field of the infant thus providing greater insight into the dialogues that take place around the infant. From a dialogic standpoint, this is particularly significant because indirect language, including language that is brought into the dialogic space from elsewhere, or which ignores the initiations of infants, is likely to contribute to the form-shaping event of dialogue for infants in ECE.

Conclusions

The dialogic interplays revealed in this study, coupled with their significance to teachers, represent the sophisticated, deeply emotional nature of teachers' work with the very youngest in early childhood education settings. These findings contribute to a growing body of research that represents infant pedagogy as an attuned relationship through dialogue, and a complex dialogic encounter that heralds exciting possibilities for greater understanding of our youngest: "It is here where the very young child may be best appreciated as a personality in her own right, and the potential for interpretation is most keenly realised" (White, 2011, p. 42). As the findings highlight, such dialogue is not only nuanced and subtle but strategically oriented. Dialogue thus plays a central role in an infant 'becoming' part of the early childhood education community and playing an agentic role through everyday language encounters in their broadest sense.

This research makes an important contribution to the field by expanding the study of language far beyond verbal exchange as a discrete phenomenon. Moreover, drawing on the visual field of infants, teachers, and researchers, it documented detailed insights into the interactive experience of very young learners in out-of-home contexts in tandem with teachers as pedagogical partners in ways that are hitherto unexplored. On this basis, it becomes possible for researchers to generate data in collaboration with the communities in which they undertake research and, in particular, to observe the social world of infants – literally through their eyes in polyphonic dialogue with others both in and outside of the event itself. Notwithstanding the importance of these insights, this paper also stresses the deeply ethical nature of such an approach, and ends with a cautionary note in this regard. As Bakhtin suggests, the distance between those who seek to understand and 'other' is not only an important source of visual surplus, but it is also a necessary stance for any form of evaluation. Any claim to fully know infants, by whatever means, is not only dangerous but also profoundly limiting for all concerned. Instead, we invoke the polyphonic 'eye' in tandem with the (inter) subjective "I" as a source of reflexion and authorship, a positionality that lies at the heart of understanding and which underpins the complex pedagogical work of these teachers in dialogue with infants.

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