He kōpara e kō nei i te ata /

Māori language socialisation and

acquisition by two bilingual children:

A case-study approach

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Abstract

This thesis investigates natural Māori language socialisation and acquisition by two under-three-year-old children within bilingual settings in Aotearoa New Zealand, in which they were learning two languages simultaneously – te reo Māori (Māori language), the endangered indigenous heritage language, and English, a dominant world language.

The thesis explores how Māori language socialisation occurred for the two children, and documents the emergence of Māori grammatical structures in their productive language. In this longitudinal, qualitative case-study, data were gathered by regularly video-recording the children while they interacted with their families. Analysis of input- and productive-language data revealed that whereas English was the principal ambient language for both children at home and in the community, the language used directly with Child 1 was predominantly Māori, and with Child 2 was predominantly English. Analysis confirmed that Child 1 chose Māori as a principal first productive language, while Child 2 chose English.

Since the focus of the study was on te reo Māori, data gathered from Child 1 across 39 months were analysed from a language socialisation perspective. Wortham's (2005) notion of "socialisation trajectory" was used to trace four "trajectories" as the child progressed towards cultural communicative practices such as the *pūkana* 'wide eyes' form of eye-talk, and towards kinship roles. She navigated, and sometimes diverged from, the expectations and guidance of her extended family (*whānau*), while accumulating participant roles and *whānau* values and responsibilities. Each trajectory was closely interwoven with the others, and also with the child's language-acquisition trajectory, and thus contributed to her becoming an L1-Māori speaker. Linguistic analysis of the child's "first words", "first combinations" and "first sentences" revealed the

emergence of Māori grammatical structures in her productive language, and led to a new “Phrasal acquisition of te reo Māori” hypothesis.

The findings direct attention to the important contribution, not only of the language environment but also of a rich, many-faceted process of cultural socialisation, in enabling a child to become a proficient communicator within her *whānau* and an L1-speaker of te reo Māori. The findings therefore contribute to a deeper and broader understanding of natural socialisation and acquisition of te reo Māori, and also carry important implications for the revitalisation of this, and other, endangered languages of the world.

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Language and orthographical conventions

Language

The decision to write this thesis in English was not taken lightly. It was made on the basis of the author's relatively high proficiency in English compared to her proficiency in te reo Māori.

Since this thesis deals with te reo Māori and *tikanga Māori*, Māori vocabulary occurs with a reasonably high frequency. Māori words are shown in italics except the following:

- proper nouns, e.g., Kōhanga Reo
- te reo Māori (the Māori language)
- Kaupapa Māori (Māori philosophy)

I have mostly followed conventions as published in the *Guidelines for Māori Language Orthography* (GMLO) (Te Taura Whiri i te reo Māori, 2012). The following are additional or alternative conventions used for Māori words in this thesis (see also 3.6.1.2 for further orthographical notes).

Citations

Citations are verbatim and may not follow the GMLO. For example, double vowels (e.g., *aa*) are used as an alternative to macrons (e.g., *ā*) in some citations (see also 4.4.1.2). Where a non-conventional alternative is used in citation, this is denoted by '[sic]'. Where required, extra information is provided in the glossary, and the cited word is followed by '[sic, see glossary]'.

Translations

For the sake of those unfamiliar with te reo, each Māori item is translated immediately following its first appearance in each chapter. Thereafter, for the sake of flow for those who are familiar with te reo Māori, items are not repeatedly translated in text. However, translations appear in a full glossary of Māori words (p. 331).

Annotation and numbering

(...)	parentheses enclose: (a) in syntactic formulae, part of the structure that is not an obligatory; (b) in cameos, an interpretation of recorded speech
<...>	angular brackets enclose an English translation of non-English speech in cameos
/.../	slashes enclose a phonemic transcription using IPA characters
[...]	square brackets enclose: (a) additional information in text; (b) phonetic transcription in IPA transcription
“...”	speech marks are used to denote direct quotes in body text
‘...’	inverted commas enclose: (a) quotes within quotes; (b) translation or meaning of non-English utterances
*	an asterisk indicates a form that is considered unacceptable by adult native speakers
?	a question mark indicates doubt, e.g., in interpretation of speech
...	ellipses denote: (a) unclear or inaudible speech in transcription; (b) the omission of irrelevant speech or description in cameos
+	a plus sign indicates a one-second pause
-	a hyphen indicates an incomplete utterance
<i>italics</i>	italics denote non-English words in body text; in cameos all text is italicised;
<i>“italics”</i>	non-English direct quotes are italicised and enclosed in speech marks but speech marks are not italicised.
Name [tab]	In cameos, speech is denoted by an indent following the name or pseudonym of the speaker

<i>Māmari</i>	<i>Kei hea?</i>
---------------	-----------------

Tables, figures and cameos are numbered as below:

Chapter number

Table 7.2. Puhi’s first words

Table number

Table title

Examples are numbered as follows:

The first two numbers are the number of the chapter and the section number.

The second two numbers are the example number. Thus, example (4511) is the eleventh example in Chapter 4, Section 4.5.

Abbreviations

The following are the annotative symbols and abbreviations used in this thesis, and are adapted from W. Bauer (1997). Examples taken from my data are provided for readers who are familiar with te reo Māori.

1L1	monolingual first language
1SG/PL	first person singular/plural pronoun (e.g., <i>au</i>)
2SG/PL	second person singular/plural pronoun (e.g., <i>koe</i>)
3SG/PL	third person singular/plural pronoun (e.g., <i>rātou</i>)
1DUINCL/EXCL	first person dual inclusive/exclusive pronoun (e.g., <i>tāua</i>)
1PLINCL/EXCL	first person plural inclusive/exclusive pronoun (e.g., <i>mātou</i>)
A	A-class possessive
AC	Anglo-colonial
ACT	actual possession
ADT	adult-directed talk
ADDR	addressee
ADV	adverb(ial)
AG	agent argument of verb
B	base
BB	babble-bits
BFL	bilingual first language
BFLA	bilingual first language acquisition
C	consonant
CAUS	causative prefix (<i>whaka-</i>)
CDT	child-directed talk
CLS	classifying particle (<i>he</i>)
CONT	continuous particle (<i>tonu</i>)
DEIC	deictic particle (e.g., <i>nei</i>)
DET	determiner (e.g., <i>ngā</i>)
DIST	distant from both speaker and addressee (<i>rā</i>)
DIR	directional particle (e.g., <i>mai</i>)
DO	direct object
DU	dual
DUP	reduplicated segments (e.g., <i>pekepeke</i>)
EMPH	emphatic particle (e.g., <i>anō</i>)
Eng	English
EQ	equative preposition (<i>ko</i>)
EXCL	exclusive(ly)
EXLM	exclamation
FILL	filler morph (<i>e</i>)
FUT	future tense/time

GMLO	Guidelines for Māori language orthography
IDT	infant-directed talk
IMP	imperative marker (<i>e</i>)
INCL.....	inclusive
INT	intended possession
INTENS	intensifier (e.g., <i>tonu</i>)
INTR	intransitive
IPA	International Phonetic Alphabet
L1	first language
L2	second language
LA.....	language acquisition
Lit.	literal translation
LOC N	local noun
LOC PREP	locative preposition
Mao	Māori
Mao-Eng.....	Forms arising in Māori communities that fit Eng phonological patterns
MEB	Māori-English bilingual
m-forms	<i>mā, mō</i>
MOD	modifier
N.....	noun
n-forms	<i>nā, nō</i>
nom	nominal form
NEG.....	negator
NEU	neutral
NP	noun phrase
NPRED	nominal predicate
NZE	New Zealand English
O	O-class possessive
OBJ	object
PART	particle
PASS	passive ((C) <i>ia</i> and variants
PAT	patient object/subject of verb
PERF	perfect or inchoative
PERS	personal article
PRS	present
PL.....	plural
POSS	possessive
PRED	predicate
PREP	preposition
PRON.....	pronoun
PROX1	near speaker (<i>nei</i>)
PROX2	near addressee (<i>nā</i>)
PST	past tense/time
Q	question word
rep	repeated
S	sentence

SC.....	self-correction
SG.....	singular
S-INTR.....	state intransitive verb
SUBJ	subject
TAM.....	tense-aspect-mood marker
TER.....	term of endearment or respect
TM.....	<i>tikanga Māori</i>
TOP.....	topicalising particle (<i>ko</i>)
TRS	transitive
TR.....	translation
V	vowel/verb
VC.....	verb constituent
VOC	vocalisation

Chapter 1: Introduction

1.0 Māori language socialisation and acquisition

This thesis concerns first-language (L1) socialisation in, and acquisition of, te reo Māori ‘the Māori language’. My study is a longitudinal, qualitative case-study investigation framed around two questions:

1. How does Māori language socialisation occur for two children growing up in Māori-English bilingual environments?
2. In what order are grammatical structures of te reo Māori acquired by these two children as they are socialised as L1-Māori-English bilinguals?

The study follows two children who are now five and six years old. Each child is growing up in a *whānau* where two languages, te reo Māori and English, are spoken. In case the term ‘family’ conjures, for some readers, the notion of a two-parent-plus-child(ren) kinship group, I use the term *whānau* ‘extended family’ in its stead. This latter term covers a much wider range of groups, including the two-parent kinship group, which applies to one case-study child, but also the ‘two-home two-parent two-grandmother plus assorted aunts, uncles, elders and cousins kinship group’ that applies to my other case-study child.

There is an abundance of research into L1 acquisition of English and other world languages (MacWhinney & Snow, 1990; Slobin, 1985). However, there is a dearth of published research that has explored Māori-language socialisation or acquisition from birth, or that has examined the order in which structures of te reo Māori emerge in first-language (L1) acquisition. Nor are there any known published case-studies that show an individual’s progression in te reo Māori proficiency at any age. Since only 1% of all languages have been the focus of any study (de León, 2011), this situation is not unique to te reo Māori. Yet,

whenever a study is undertaken of one of the 99% of the as yet un-studied languages, it has the potential to contribute to a broader and deeper understanding of language learning, since such research can challenge accepted beliefs. For example, generalisations from studies of mainly English language acquisition (LA) led to the belief that subject-verb-object (SVO) word order is easier to learn than other word orders. Studies across a range of speech communities subsequently showed that this is not the case (Slobin, 1982). Thus, my study of te reo Māori socialisation and acquisition has the potential to contribute to a broader understanding of language learning in general, and deeper understanding of how children become first language Māori (L1-Māori) speakers.

1.1 Origins and theoretical connections

The idea for this study developed some quarter-century ago, in 1990, when I was starting my family. As a young-ish Māori mother, my passion for my people, language and culture, and my background in linguistics and bilingual education, convinced me that raising my children to be L1-Māori speakers was a good plan. Nevertheless, I experienced several incidents, while interacting naturally with my children, in which ill-informed strangers felt the need to advise me that speaking Māori to my children was a misguided choice. Furthermore, as a *kaiako* ‘teacher’ and parent I have had numerous conversations over the years with parents who were swayed away from Kaupapa Māori education (education with a Māori epistemological base) (see 4.1) by the negative attitudes of others towards te reo Māori (see L.T. Smith, 1999; Waitangi Tribunal, 1986) and towards bilingualism (see Baker, 1992). Such attitudes were a legacy of colonisation (L.T. Smith, 1999; Skutnabb-Kangas, 1990), intertwined with the widespread promulgation of some early research into bilingual education, which appeared to show that it was detrimental to children’s educational and cognitive development (see Krashen, 1991; Baker, 1992, for review). However, the

breadth of research into LA and bilingualism was increasing at the time (see, for example, de Houwer, 1990; Hakuta, 1990; MacWhinney & Snow, 1990), and fed a growing awareness that bilingualism was not abnormal or harmful (García & Baker, 1995; Skutnabb-Kangas, 1990). Rather, since the majority of the world's population are bilingual, studies into this human phenomenon have an important contribution to make to LA theory in general (Genesee, 2001). Evidence was also mounting that there were cognitive benefits related to bilingualism (see, for example, Bialystok, 1988; Hakuta, 1990), and that knowing one's heritage language was related to cultural identity and higher self-esteem (see, for example, Wright & Taylor, 1995). In Aotearoa¹-New Zealand (hereafter Aotearoa-NZ), a strong Māori language-revitalisation movement had become well established by the early 1990's, within which Kōhanga Reo (Lit. 'language nest(s)', see 4.1) provided opportunity for children and their *whānau* to learn and use te reo Māori outside their homes. When starting my own family, I perceived that a case-study of Māori LA could provide useful information for parents and teachers, and therefore could lend support to the revitalisation movement.

The idea was incubated for some twenty years, until my grand-daughter was born. Her *whānau* (myself included) wanted to raise her as an L1-Māori speaker, and this combined with other factors to create the opportunity for the present study to take flight.

Originally, my study was conceived as a language acquisition (LA) case-study. Specifically, it was to be a longitudinal case-study of natural and simultaneous, acquisition of Māori and English by one child. I formulated a research question that would be addressed by a linguistic analysis of the child's early productive language, to determine the order of emergence of structures of te reo Māori.

¹ Aotearoa is the Māori name for New Zealand

My search for LA and child bilingualism literature led me to the branch of study termed bilingual first-language acquisition (BFLA) (de Houwer, 1990, 1998, 2009; de Houwer et al., 2006; Genesee & Nicoladis, 2007; Itani-Adams, 2013; La Morgia, 2011), which de Houwer (2009, p. 2) defined as “the development of language in young children who hear two languages spoken to them from birth”. These BFLA researchers had grappled with the question of whether terminology and concepts derived from the study of adult language were useful or not in studies of newly-verbal children. As this was an issue I was facing in my study, it was apparent to me that drawing on BFLA frameworks and terminology, developed specifically for the analysis of young children’s language, would be appropriate for my study. At the same time, I searched for and found a small number of studies on Māori LA. The limited number of studies led me to widen my scope to include LA studies of closely-related languages from the Polynesian branch of the Austronesian language family, where I found Elinor Ochs’ (1988) study of language acquisition and language socialisation in Samoa. Ochs’ two-pronged approach appealed to me because, while it provided a focus on the linguistic detail of LA, it also offered a wider lens to capture what else goes on when children learn language. Ochs’ study led me to her collaboration with Bambi Schieffelin, from which came their “language socialisation” methodology (Schieffelin & Ochs, 1996). Their approach piqued my interest because it directed attention to the situational and cultural contexts in which language learning occurs, and resonated with my own beliefs that the process of learning a language also involved learning a culture, and that raising a child involves the proverbial village. These two important branches of research – language socialisation and BFLA – henceforth guided my study.

In the meantime, I had recruited a second child and her *whānau* into the study, and was gathering data from both children with the idea that a second case-study would provide a useful comparison (see 2.2). Concurrently with reading the language-socialisation literature, it was becoming clear to me that the two

children's language learning was occurring simultaneously with their cultural learning. Schieffelin and Ochs' approach threw light on aspects of communication that were directly relevant to these two young children. For example "recurrent communicative practices" (1996) were observable in interactions in which the children participated. Additionally, Schieffelin and Ochs' approach directed attention to non-verbal practices at which these pre- and newly-verbal children developed competence before they expressed themselves with words, such as connecting with people across space with gaze and body orientation. It also highlighted that there are human universals and cultural particulars in communication, and it drew my attention to the notion that every member of a group has a role in socialising other members of the group, and in socialising the group as a whole. As a result, I began to explore important sociocultural notions, for example: Rogoff's cultural participation structures which describe different cultural models of children's learning (Rogoff, Paradise, Arauz, Correa-Chávez, & Angelillo, 2003), and Vygotsky's notions: (a) that language and other communicative practices, such as dance and song, can be considered as cultural tools; (b) that children learn incrementally as they interact with more expert others; and (c) that children adapt cultural tools for their own purposes, which is how languages and cultures change (Vygotsky, 1934/1986).

Language learning remained a central focus of my study, and a language-socialisation approach maintained that focus, while contextualising learning within cultural and human interaction and development. Thus, while I did not discard my initial research question, I came to see it, not as the sole picture, but as part of the bigger picture of language socialisation. This led to the formulation of a new primary research question, which reflected the wider focus that had become my new aim for the project.

1.2 Aims and research questions

Since my aim was to gain an understanding of the details of language learning as it occurs in a wider social and cultural context, I arrived at the following two research questions:

1. How does Māori-language socialisation occur for two children growing up in Māori-English bilingual environments?
2. In what order are grammatical structures of te reo Māori acquired by these two children as they are socialised as L1-Māori-English bilinguals?

My study aimed to gain insight into BFL (see next paragraph) socialisation in, and acquisition of, te reo Māori. It aims to contribute to an understanding of language learning generally and to a deeper and clearer understanding of the situational and cultural contexts of L1-Māori socialisation and acquisition.

I adopt the “BFL” part of de Houwer’s “BFLA” term to refer to both BFL acquisition and BFL socialisation. I use the term “Māori-English bilingual” (MEB) to describe the particular BFL environment in which my case-study children were growing up. As the English language is now prevalent in Aotearoa-NZ, it can be argued that most, if not all, children who are L1-Māori speakers are also exposed to sufficient volumes of English for the terms MEB and BFL to be applicable.

My study aims to contribute to an understanding of two children’s productive language choices and use. The disruption of intergenerational transmission is implicated as a significant factor in language shift and, conversely, the re-establishment of intergenerational transmission is seen as an important component of the reversal of language shift (Fishman, 2001, pp. 14-15). Transmission of language to young children, and children’s acquisition of language, can be described in terms of “language socialisation” (Ochs, 1986, 1988; Ochs & Schieffelin 2008, 2011; Schieffelin & Ochs, 1986, 1996). Gaining an understanding of factors that lead to language choice by very young children may give *whānau* greater opportunity to maximise the likelihood that their

children will choose to speak te reo Māori, which in turn may help to grow the population of Māori speakers across Aotearoa-NZ.

My study aimed to gain insight into linguistic, cultural and social aspects of two children's language learning. Researchers have identified various factors that are widely believed to play a part in language socialisation and acquisition. These include gaze and attention (Brooks & Meltzoff, 2002; Tomasello & Farrar 1986; Vihman, 2009; see also 2.5.5.1); language input (Chan & Nicoladis, 2010; Gathercole & Thomas, 2009; Meisel, 2011; Vihman, 2009); and gesture (Haviland, 1998). In addition, research implicates many other factors in language learning, including participation arrangements (de León, 2011), conceptual bias (Gentner, 1982; Xuan & Dollaghan, 2012), infant-directed registers (Ferguson, 1964; Fernald, 1985); and repetition (Watson-Gegeo & Gegeo, 1986). Gaining an insight into how, or if, these and other factors relate to the language socialisation of the children in my study will lead to an understanding of the particularities of socialisation in MEB *whānau* and communities, and may deepen our understanding of universalities of language learning.

LA literature is built on longitudinal case-studies of individual children. Multiple corpora from numerous case-studies have built up over the years, and are continually mined by researchers across the world to enhance understanding of all areas of LA, (Talkbank, n.d.). Yet most corpora come from studies of English and other European languages. While these studies may be relevant to Māori LA in terms of language-learning universals, they are removed from Māori language and Māori cultural contexts. My study has the potential to make a specific contribution to the body of knowledge about children's acquisition of te reo Māori, as well as to the body of knowledge about children's language socialisation and acquisition in general.

Further, since the body of research on te reo Māori is small, Māori language teaching and learning practices and theory have relied either on undocumented trial-and-error practice, or on studies of those other languages. MEB readers of this study may recognise practices that relate to the socialisation of children in their *whānau* and, undoubtedly, socialisation in their *whānau* will differ in some ways. The present study has the potential to contribute directly to pedagogy and practices in Māori-medium education settings such as Kohanga Reo and Kura Kaupapa Māori. Since these settings employ natural language learning via an immersion environment (Skerrett-White, 2003; Tawhiwhirangi, 2011), an in-depth knowledge of how natural L1-Māori socialisation occurs is likely to find application in this field.

1.3 Outline of thesis structure

The present chapter has introduced the study and has presented my two research questions. It has explained the origins and theoretical connections of the study, and has positioned my research as a language socialisation and acquisition study which integrates concepts and methods from language socialisation research, LA research, and BFLA research.

Chapter 2 comprises a review of literature from the fields of language socialisation, LA and BFLA. It includes an overview of the small number of studies that have dealt with data collected from children learning te reo Māori. It introduces the main analytic concepts of “trajectories of socialisation” (Wortham, 2005) and “participation roles and arrangements” (de León, 1998, 2012), and explains further terms and concepts that I make use of in my analysis.

Chapter 3 presents the methodological approach of the study. It justifies the use of qualitative case-study methodology, based on its suitability to data-rich, longitudinal studies of human development, and its established history in LA research. It describes how the children and their *whānau* came to participate in the study, discusses some ethical considerations, and outlines the methods

used to gather and analyse the data. It explains that there are three analyses reported in this thesis. Each analysis is presented in its own chapter and is prefaced by a description of methods used for that analysis.

The purpose of Chapter 4 is to provide background information about Māori culture and the structures of te reo Māori, and is aimed at readers who are unfamiliar with either or both of these topics. It begins by describing aspects of Kaupapa Māori (KM) practice and theory as they pertain to my study; it then establishes my position within the study, and locates the study within KM practice and theory. It explains KM concepts, and provides a sketch of the grammar of te reo Māori.

Chapter 5 considers the case-study children's language environments and language choices in order to address aspects of both research questions. It addresses the first research question by presenting my analysis of language input, and my analysis of social aspects of the children's language environments, including their individual preferences and agency in choosing a principal first productive language. It addresses the second research question by presenting a linguistic analysis that compares the case-study children's two-word production with adult te reo Māori syntax, and with two-word structures typically produced by children acquiring L1-English. This linguistic analysis determines that the principal language choice of one child was te reo Māori, and that of the other child was English, which further contributes to addressing Question 1.

Chapter 6 addresses the first research question by presenting the results and discussion of my analysis of one child's socialisation across the first 39 months of her life. It begins by explaining the language socialisation framework and the analytic tools that I use in my analysis. Having established in Chapter 5 that only one child, Puhi, chose te reo Māori as her principal first productive language, my analysis subsequently focuses on data gathered from that child

and her *whānau*. The analysis is presented as four “trajectories of socialisation”, which trace the child’s progress towards communicative and cultural proficiency in four areas:

- *Kōrero mai*: Initiating interaction
- *Pūkana* ‘wide eyes’;
- *Kapa haka* ‘performance’
- *Whanaungatanga* ‘relationships’

Chapter 7 presents a linguistic analysis of Puhi’s productive language. Three overlapping, chronologically-ordered data sets are analysed, and are referred to as Puhi’s “first words”, “first combinations”, and “first sentences”. The analysis explores the grammatical forms and functions of the utterances in each data set, and establishes an order of emergence of structures as Puhi’s proficiency in te reo Māori progresses. Results lead to a new hypothesis of “Phrasal acquisition of te reo Māori”, based on a recurrent pattern in Puhi’s production.

The final chapter presents the thesis conclusions, summarising and synthesising the results of each of the three analyses. It works through the implications of how dynamics such as language environment and input, *whānau* socialisation mechanisms, and child agency relate to the two children’s language choices, and to their developing participation within their MEB *whānau*. Specifically, it gives insight into how these three things may relate to:

- (i) a child’s choice of English or Māori as her initial, and principal language of production;
- (ii) the development of communicative features particular to MEB contexts such as *pūkana*, *kapa haka*, and participation arrangements;
- (iii) the earliest structures that are produced by an L1-Māori child, and those that are missing from her early production; and
- (iv) particularities of te reo Māori acquisition, and features that are universal to LA.

Such insights into contexts that are directly relevant to the intergenerational transmission of te reo Māori may be key to understanding how revitalisation of our language may be facilitated.

Chapter 2: Literature review

2.0 Introduction

This chapter reviews literature relevant to the two main questions addressed in my study. It begins with an outline of language socialisation theory and research, and highlights a selection of studies of language socialisation from around the world. A very few studies that have been undertaken with young children learning te reo Māori are reviewed, and aspects of language acquisition (LA) theory that are relevant to my study are highlighted. Notions and concepts regarding bilingualism are explained, and some studies of bilingual children's LA are overviewed in order to position my study in relation to bilingual first-language acquisition (BFLA) research. The chapter then introduces Wortham's (2005) concepts of "trajectories of socialisation" and "timescales" and de León's (1998) notion of "participation frameworks", which are fundamental concepts to my overall analytic approach.

2.1 Language socialisation theory and research

Schieffelin and Ochs brought together theory, notions and tools from developmental pragmatics, anthropology, linguistics, LA, and socioculturalism, to develop a distinct framework for undertaking what is now referred to as "classic" language socialisation research (Ochs & Schieffelin, 2011; Wortham, 2005). Their approach focussed on how children "become competent members of their social groups and the role of language in this process" (Schieffelin & Ochs, 1986, p.167). "Language socialisation", as used in this thesis, follows Schieffelin and Ochs' conception of individual change that occurs through

participation in communicative practices [that] is promoted but not determined by a legacy of socially and culturally informed persons, artifacts, and features of the built environment. (Ochs & Schieffelin, 2011, p. 4)

2.1.1 Language socialisation and language acquisition

Language-socialisation research shares with LA research an underlying concern with how children become competent language users (Schieffelin & Ochs, 1996). It directs attention to language as the product of socialisation, and thus draws on linguistic tools to analyse and describe features of children's developing linguistic proficiency (see 2.3), while also taking into account cultural values and beliefs, and local theories of child rearing. For example, using an integrated language-acquisition and language-socialisation approach, Ochs (1988) explored the growing cultural and linguistic competence of children in two villages in Samoa. Their approach demonstrated that, as children begin to acquire language, they also acquire variable and context-sensitive phonological, grammatical and lexical structures that index cultural features such as social distance, formality of setting, and gender. The structures included "affect-marked and neutral first person pronouns, and presence/ellipsis of ergative case marking" (Ochs & Schieffelin, 2008, p. 10).

Arising from the field of developmental pragmatics, language socialisation research takes a broader perspective on communication than LA research. The central focus of LA research is linguistic competence at different developmental points (Schieffelin & Ochs, 1996). By contrast, language socialisation has a focus that extends beyond language to non-verbal and non-vocal semiotic production (Schieffelin & Ochs, 1996), such as gesture (Haviland, 1998), gaze, body orientation, touch (de León, 2011), and eye contact. These "semiotic modalities" (Schieffelin & Ochs, 1996; see also 2.5.5.2) appear before speech in children's development. In order to understand how a preverbal child comes to use, for example, gaze or gesture with "communicative intent" (see also Fernald, 1985; and de León, 2012, re use of this term), a language-socialisation approach focuses attention on the communicative use of gaze and the full range of semiotic modalities in the child's environment.

2.1.2 Language socialisation and socioculturalism

Language-socialisation theory and sociocultural theory are tightly linked. A key tenet of sociocultural theory is that children's learning, including language learning, is embedded within their cultural, social and physical environments (Bruner, 1983; Hohepa, Smith, Smith, & McNaughton, 1992; Rogoff, 1995; Valsiner, 1985; Vygotsky, 1934/1986). That is, children learn and develop through interaction with more knowledgeable others in their culture, who induct them into the ways of being and doing in that culture, with all its symbolic systems, and within particular physical spaces (Vygotsky, 1934/1986).

According to Vygotsky (1934/1986), language is a tool which people use to mediate and regulate their thoughts, their social environments, and their relationships with the world (Lantolf, 2000; Lantolf & Beckett, 2009; Ochs & Schieffelin, 2011; Vygotsky, 1934/1986). Sociocultural theory therefore directs attention to social interaction as a site for learning, and to language as a medium of learning. These two notions are encapsulated in the two-fold focus of language-socialisation research. That is, since language is integral to social interaction, it is therefore integral to the process of learning (Schieffelin & Ochs, 1996).

Members of any social group, including children, negotiate meaning and knowledge by using language and other symbolic cultural tools. Learning therefore occurs incrementally as children participate socially with more expert others across physical and social environments (de León, 1998, 2011; Rogoff, 2003). For example, a child may be familiar with a word without yet having a full understanding of the concepts associated with that word. Understanding develops as meaning is negotiated through social activity with language and other cultural tools (Vygotsky, 1934/1986). This is captured in Rogoff's notion of "guided participation" (Rogoff, 1995; Rogoff et al., 1993), and in Valsiner's notion of "canalisation" (Valsiner, 1985, 1998) through which children are seen

to be guided or canalised to participate in promoted activities, and are restricted from participating in other activities, according to cultural and social norms. Participation includes hands-on activity, observation and communication (Rogoff, 1995). Language-socialisation theory draws on the concept that expert others guide children into culturally-particular activity. For example, although children everywhere learn by repetition, language-socialisation research has shown they are guided to use repetition according to particular cultural norms. Thus repetition is used differently, for example, in Antonero Mayan (Reynolds, 2008), Kwara'ae (Watson-Gegeo & Gegeo, 1986), and Sesotho (Demuth, 1986) speech communities. The ways that children are guided to participate in my study is a focus of attention.

Further, language-socialisation research makes use of the sociocultural notion of "appropriation". This term is defined by Rogoff (2008, p. 65) as "the process by which individuals transform their understanding of and responsibility for activities through their own participation". In other words, language and culture are not reproduced in facsimile across generations. Rather, children appropriate language and knowledge and adapt it to suit their own requirements, while using it to construct meaning and understanding. Language, culture, and knowledge are thus transformed and changed (Vygotsky, 1934/1986).

Additionally, sociocultural theory has as a fundamental notion that learning occurs over time, and must therefore be analysed from a historical perspective, that is, as it develops (Vygotsky, 1934/1986). This is discussed further in relation to my study in 2.5.2.

2.1.3 Language socialisation and anthropology

Language-socialisation research is situated within an anthropological tradition and shares with anthropology an underlying concern with the nature of culture and cultures (Schieffelin & Ochs, 1996, p. 252). However, whereas anthropological research tends not to focus particularly on children, classic

language-socialisation research had children as a central focus. Such research seeks to articulate and understand routine, everyday activities that occur within meaningful cultural contexts, and how children come to participate proficiently within those activities.

Schieffelin and Ochs note that “[a] basic goal of language socialization research is to articulate the organization of *recurrent communicative practices* of novice and expert members” (Schieffelin & Ochs, 1996, p. 253, authors’ emphasis). Recurrent communicative practices are everyday patterns that occur as people interact, and include formulaic language, syntax, gesture, facial expression, stance, participation arrangements, and combinations of any or all of these features. Language-socialisation research has explored recurrent communicative practices in a range of speech communities, for example, Kwara’ae in the Solomon Islands (Watson-Gegeo & Gegeo, 1986); Sesotho in South Africa, (Demuth, 1986); Kaluli in Papua-New Guinea (Schieffelin & Ochs, 1996); Samoan in Samoa (Ochs, 1986; Schieffelin & Ochs, 1986); Rapa Nui in Easter Island (Makihara, 2005); Patwa in Dominica (Paugh, 2005; 2012), and Zinacantec Mayan in Mexico, and middle-class American-English in the USA (de León, 1998; Haviland, 1998). Such studies have provided evidence in support of some long-held beliefs, such as that language and culture are inextricably interconnected. Likewise, evidence against other long-held beliefs has been found. For example Ochs’ (1988) study of language socialisation in Samoa, and de León’s (1998) study of language socialisation in a Zinacantec Mayan community, have both demonstrated that modified speech directed to infants (also referred to as “baby talk”) is not a universal practice (c.f Kuhl, 2010).

The persistent view of the universality of baby talk was one of many that arose from LA and anthropological research that focused only on a narrow group of languages and cultures, but led to the characterisation of features of those

languages and cultures as universal. The many social groups, including Māori, that did not fit those “universals”, came to be categorised as “deficient” (Hohepa & McNaughton, 1993, p. 40). Language-socialisation research therefore distinguished itself from both anthropological and LA approaches (Schieffelin & Ochs, 1986) by focussing on the cultural and linguistic particularities of different cultural and linguistic groups. Such a focus gives breadth and depth to our understanding of language learning by illuminating different cultural particularities of essential human communication tools such as speech, attention and gesture. The sensitivity of language-socialisation research to these particularities, to linguistic structure, and to the notion that children are socialised through using, and into using language (Schieffelin & Ochs, 1986) makes a language-socialisation approach appropriate for my study, as it provides scope to gain a deeper understanding of *te reo Māori me ōna tikanga* ‘Māori language and its associated practices’.

2.1.4 Recent research

Recently, language-socialisation research has shifted its focus from recording recurrent communicative practices towards describing the dynamics of cultural and linguistic change and inter-change (Hua, 2010; Wortham 2005; Nonaka 2012). It has also broadened its focus on young children and has come to be understood as a “lifespan process” that occurs wherever and whenever people communicate (Ochs & Schieffelin, 2012, p. 2). This has seen the field extend across disciplines to include, for example, second-language and heritage-language socialisation. Inevitably it has intersected with the fields of language endangerment and language revitalisation in studies of diaspora and in communities where local languages have been overwhelmed (Hua, 2010). As these fields are particularly relevant to the situation of *te reo Māori*, I review some such literature that is highly pertinent to my study.

2.1.5 Language socialisation and language endangerment and revitalisation

The widespread endangerment and demise of large numbers of the world's languages continues at an increasing pace (Nonaka, 2012). Researchers have recognised the potential for the combination of language-socialisation and language-endangerment approaches to achieve much more than recording a dying language, which is what some past language-endangerment research consisted of (Friedman, 2012). Language-socialisation studies in revitalisation contexts can give insight into what actually occurs for children and adults at the local implementation level of planning and policy initiatives by

documenting everyday linguistic and cultural practices [and] illustrating their delicate and complex interplay as manifested in the process of language socialization. (Nonaka, 2012, p. 615)

In investigating language ideologies and policies, and socialisation practices, Paugh (2005, 2012) studied language socialisation in Dominica. At the time of the study, on-going language shift away from the local language, Patwa, towards English had sparked a drive to establish Patwa as a national icon, and advocacy groups were promoting its use in schools and other official contexts. Paugh (2005) analysed data collected by video-recording and observing six children aged 2 to 4 years of age for 12 months. She found that, despite changing urban ideologies, adults in rural communities continued to discourage their children's use of Patwa in favour of English. For example, when children used Patwa, adults sanctioned them and told them they were acting above their age. Children, in their turn, were sensitive to the indexical links that their adults drew between Patwa and adult status, and to their adults' actual use of Patwa. While the children used English in schools and at home much of the time, their creative response was to use Patwa in their play to "direct and evaluate character, curse at each other, intensify their speech, and enact adult roles" (Paugh, 2012, p. 165). In another longitudinal study, Makihara (2005)

investigated Rapa Nui language use in Easter Island by children and adults. She found that, although the children preferred to use Spanish, and therefore may have been contributing to language shift away from the endangered Rapa Nui language, they nevertheless drew on features from Rapa Nui “stemming out of locally managed conversation contexts and interpersonal power struggles within them” (p. 754) in order to establish themselves in social roles and “so that their voices are heard” (p. 754). All these researchers painted a detailed and nuanced picture of the place of an endangered language in the lives of its users with data gathered from the users of the languages under study.

In the context of revitalising te reo Māori (see 4.1, and 4.3), language-socialisation research such as that conducted by Paugh (2005; 2012) can focus on the real-life responses of children and their families to language policy and planning and therefore has the potential to inform language planning, policy and pedagogy. Having a deeper understanding of processes particular to te reo Māori socialisation can contribute to the development of new Māori language strategies that support revitalisation efforts particular to our heritage language.

2.1.6 Section summary

This brief overview of language-socialisation theory and research has shown how this field draws on, and distinguishes itself from, its antecedent fields of anthropology, developmental pragmatics, socioculturalism and language acquisition. It has positioned my study within the field of language socialisation, with its focus on young children who are being socialised through and into the communicative practices of their particular cultural and language contexts. It has also shown how language socialisation research has been applied to endangered languages, and how this is particularly relevant to a study of te reo Māori.

2.2 Studies of children learning te reo Māori

A small body of research, and associated literature, is growing in concert with te reo Māori revitalisation efforts. This research has focused primarily on pedagogy in the context of te reo Māori revitalisation (a) as it applies to children's BFLA or second language (L2) acquisition, and (b) as it applies to adult L2 acquisition. Some of these studies have involved data gathered from young children learning te reo Māori. I provide a brief overview of that literature here.

In her master's thesis, Ka'ai (1990) investigated pedagogical patterns in Kōhanga Reo and ways in which new-entrant classrooms "matched" any such patterns. She used ethnographic methods of observation and running records to record the activity and language of children interacting in dyadic adult-child and child-child arrangements. Data were gathered over "several months" (p. 60) from six children aged between 4-and-a-half and 5 years, who were in their last months at Kōhanga Reo, or were beginning school. Ka'ai found evidence of distinct pedagogical patterns, such as the use of *whanaungatanga* 'relationships', in all the Kōhanga and some of the schools in her study.

Hohepa et al., (1992) built on Ka'ai's study by investigating the "enculturating context" of Kōhanga Reo. The researchers analysed transcriptions of interactions audio-recorded over two weeks that involved three children aged between 2 years 8 months and 3 years 6 months. The data revealed adults' use of demonstration, questions, and imperatives as "language focussing strategies", and children's verbal expression of three Māori concepts: *whanaungatanga*, *āwhina*, and *tuakana-teina*. The authors found that the Kōhanga Reo was a context for enculturation and socialisation towards an understanding of these concepts.

Skerrett-White's (2003) doctoral thesis investigated one Kōhanga Reo as a site for the re-vernacularisation of te reo Māori and the mechanics involved in this.

Three children aged between 3 and 5 years were video-recorded daily over a three-month period. Skerrett-White argued that the pedagogy of the Kōhanga Reo positioned the children as agents in supporting the Kōhanga Reo's central aim of re-vernacularising te reo Māori and reversing language shift in Aotearoa (Skerrett-White, 2003, p. 302).

In another doctoral study, Royal-Tangaere (2012) video-recorded four children aged 2 years 6 months to 2 years 11 months over a six-month period. Her analysis of dyadic interactions involving the children revealed that cultural practices at Kōhanga Reo provided opportunities for children to acquire Māori cultural practices and te reo Māori, which they demonstrated and expressed both at Kōhanga and in their homes.

In each of the above four studies, the main settings for data collection were Kōhanga Reo, and the children involved in the study were already speaking when the data were gathered. The studies emphasised interconnections between culture, identity and language, and highlighted activities and mechanisms by which Māori cultural practices and language were promoted with children in the Kōhanga Reo settings (Hohepa et al., 1992; Ka'ai, 1990; Skerrett-White, 2003). Each study provides insight into children's cultural and linguistic knowledge, practice and proficiency as expressed in te reo Māori and also, in some cases, English. The studies articulated aspects of traditional and contemporary Kaupapa Māori child-development theory, practices and pedagogy. However, neither these studies, nor any other, consider any of the following:

- incremental development in te reo Māori over time;
- incremental development in other Māori communicative practices;
- non-verbal communicative practices used with and around infants in te reo Māori speech communities;
- preverbal children's language socialisation in te reo Māori speech communities; and

- choice of productive language for young children who are growing up as BFL Māori-English speakers.

My study begins to address these important questions by documenting aspects of two children's socialisation in a three-pronged approach: examining environmental factors that contribute to the children's choices of a principal first productive language; tracing the trajectories of one child's socialisation through and into Māori communicative practices across 39 months from birth, and documenting the emergence of structures of te reo Māori in that child's earliest language production from 10 months to 29 months of age. In doing this, my study draws on the language socialisation and te reo Māori literature discussed above, and also on LA research, and BFLA research, which is reviewed below.

2.3 Language acquisition theory and research

A general fascination with child language development has seen many theories of LA proffered across the centuries, and a vast supporting literature. Since the middle of the twentieth century in particular, the quantity and breadth of LA research has increased. Research paths have diverged in a number of directions, exploring an ever-broader range of the world's languages and communities, and simultaneous acquisition of more than one language (see, for example, re English/Mandarin: Chan & Nicoladis, 2010; Xuan & Dollaghan 2012; re Dutch/French: de Houwer et al., 2006; re Spanish/English: Fantini 1985; Lanza, 1998; Paradis & Navarro, 2003; re Persian/English: Keshavarz, 2007), and comparing acquisition across languages (see, for example, Slobin, 1982). The selection of LA studies that are discussed below have a direct relevance to my study.

2.3.1 Acquisition of language structures

It has been widely reported that children's LA progresses in a similar manner around the world (de Houwer, 2009). For example, it is widely cited that, across languages, children's earliest language production demonstrates the following

pattern: holophrases emerge at around 10-12 months, followed by two-word, or two-morph utterances at around 18-24 months, followed by multi-word utterances, or short sentences by around 38 months (see, for example, de Houwer, 2009; Dodd & McIntosh, 2010; Martinez-Sussman et al., 2009). These linguistic “milestones” are useful in that they indicate theoretical lines for the identification of sets of data for analysis. However, I bear in mind that there is evidence to support the hypothesis that LA is a continuous process, rather than a series of stages (see, for example, Israel, Johnson, & Brooks, 2000).

2.3.1.1 First words

Various theories have been proposed for how young children learn words, concepts and meaning. There is debate about the significance of particular mechanisms in vocabulary acquisition including, for example, gaze and attention (Brooks & Meltzoff, 2008; Tomasello & Farrar 1986; Vihman, 2009; see also 2.5.5.1); language input (Chan & Nicoladis, 2010; Gathercole & Thomas, 2009; Meisel, 2011, Vihman, 2009;); generalisation (Bannard & Matthews, 2011); and conceptual bias (Gentner, 1982; Xuan & Dollaghan, 2012; see also Waxman et al., 2013 for review). For example, Gentner (1982) argued for conceptual bias towards nouns on the grounds that, since children can see and touch concrete objects, they therefore learn nouns first, and verbs later. Other scholars (cf. Bloom, 2001; Diesendruck, 2007) are more insistent that a combination of social, cultural, conceptual and linguistic aspects is more significant than a single word-learning mechanism. For example, Tardif et al. (2008) argued that the social functions of people’s names, as well as their classification as ‘nouns’ had to be considered in early word-acquisition. Chan and Nicoladis (2010) expected data from two English-Mandarin bilingual boys to support the hypothesis that vocabulary learning is related to children’s attention to the placement of words, for example, verbs in initial and/or final position. However, their results did not indicate that word position had any great

influence on the vocabulary learning of either child. Instead, sociocultural factors, in this case the desire of one child to participate with his older sibling, seemed to be more significant. The unexpected findings in Chan and Nicoladis' study alerts me to sociocultural aspects of learning in my study, as well as to such factors as input, word classes, and gaze and attention.

2.3.1.2 Combinations of two words or morphs

Roger Brown (1973) identified that, when the three young L1-English children in his study began to combine words, they produced such combinations as actor + action, possessor + possessee, subject + direction, action + object, subject + location, and verb + direction. R. Brown drew attention to word order in the children's utterances, noting that it was the same as the word order of English utterances that adults produce. Further cross-linguistic research has indicated that children's early combinations reflect the word order particular to the language(s) they hear (Slobin, 1982). R. Brown also drew attention to the lack of function words – and therefore functional categories – in early L1-English children's production. More recently, Keshavarz (2007) analysed two-word and multi-word utterances gathered via diary study from a Persian-English bilingual child aged between 16 and 23 months. Keshavarz found that by focussing his analysis on two-morph combinations, rather than two-word combinations, some functional categories of English (e.g., plural *-s*) and Persian (e.g., copula *-e*) were found to be present much earlier than previously thought.

According to Peters (2001; 2009), children learn words by identifying, targeting and approximating sound chunks that they hear repeatedly in the language around them. Since language is a communicative practice, and sounds and certain words recur in interaction, this can be compared with how children target and become proficient in the recurrent communicative practices of their speech communities (see also 2.5.5.5 Formulaic language).

Peters and Menn (1993) explored children's acquisition of grammatical morphemes, a set that

[c]rosslinguistically...include[s] both bound and free morphemes with low phonological salience, ...a range of syntactic functions [and] relatively low semantic content. (p. 742)

The authors described a process by which some children produce approximations of items in this set, which Peters and Menn refer to as "protomorphemic fillers" (p. 750). These protomorphs provide children with "phonological footholds" as they gather information about, and eventually acquire, adult grammatical morphemes such as determiners, pronouns, tense-aspect-mood markers, and conjunctions.

In considering the particularities and universalities of Māori LA, I am aware both of the critical role that function words play in signalling grammatical relations in te reo Māori and also of the phonological salience that many have in sentence-initial or phrase initial positions. I keep the process that Peters and Menn described (1993) in mind in my linguistic analysis of the early combinations produced by my case-study children.

In my study I make use of both words and morphs as units of linguistic analysis, comparing the word order of early combinations in my data with English and Māori word order, and comparing two-word combinations with the typical L1-English combinations that R. Brown identified (1973). I also analyse two-word combinations in exploring the two case-study children's language choice (see Chapter 5). I analyse both the two-morph combinations and two-word combinations of one child. I also use the notion of "protomorphs" as I establish the order in which grammatical structures of te reo Māori emerge in her language production (see Chapter 7).

2.3.1.3 Multi-morph combinations

Researchers have explored notions from various theories to explain children's acquisition of syntax. Peters (2009) argued that there is a close relationship between the acquisition of syntax and phonology, and that the dual abilities of segmenting sound chunks and re-combining them into "combinatorial patterns" (p. 44-45) are developed together, with each supporting the other. She suggested that some children may focus on the "tune" (p. 52) of comparatively large chunks of language (see 2.5.5.5), while others focus on shorter segments such as salient syllables or word-final morphemes, as described in 2.3.1.2. Slobin (1982) reviewed studies indicating that the word order of English was more "natural", and easier to learn than that of other languages. Slobin's cross-linguistic analysis led him to conclude that language particularity, rather than "naturalness" influenced word-order acquisition since, for example, L1-English and L1-German children acquire SVO order, but L1-Japanese and L1-Turkish children acquire the predominant SOV order of those languages (Slobin, 1982).

Researchers have argued that a "natural order" of acquisition means that simple structures are acquired earlier than complex structures. For example, de Villiers and de Villiers (1985) found that, in English, the complexity of passive constructions and relative clauses means that they emerge only at around three or four years of age, and that full understanding and use of these features is not complete until much later. In Ochs' (1988) longitudinal study in Samoa, she found that social factors came into play, so that children sometimes acquired some complex structures earlier than some simple ones, because of social constraints on the use of the simpler structures.

Israel et al. (2000) analysed tokens (see 2.5.4) of passive participles extracted from the spontaneous speech of seven children between the ages of one-and-

a-half and 5 years taken from the CHILDES² database. They found that, through experience with specific utterances in their environment, L1-English children first come to understand and use stative participles (which denote a state; e.g., *it's broken*), and extend their understanding through equivocal utterances (e.g., *it got broken*) into eventive participles (which denote an event; e.g., *this was broken by the dog*). The authors suggested that “syntactic categories and grammatical constructions can be learned gradually on the basis of earlier, simpler sentences” (Israel et al., 2000, p. 103). Other researchers have argued that input is a highly significant factor, and that children learn complex structures earlier if they are prevalent in the input language.

In light of the above research, my analysis explores features of the case-study children's LA such as the emergence of word-order, and of “complex” structures like passive sentences. The acquisition of the passive in Māori might shed some light on issues of “natural order”, “language-particularity” and “input” and social factors in the acquisition of grammatical structures. This is because, although the passive structure in Māori is superficially structured like a passive sentence in English, there are aspects of its use that is unlike English (W. Bauer, 1997; Pucilowski, 2006; Nicholas, 2010; see also 4.4.5). For example, passive forms appear with comparatively high frequency in Māori, and might therefore be learnt early, despite their complexity.

2.3.2 Section summary

The literature I have outlined in this section comprises studies that investigate the significance of particular word- and syntax-learning mechanisms, and studies that investigate how linguistic and cognitive factors combine with social and cultural factors to contribute to child language-learning. It includes discussion about whether there are universal stages in LA such as “one-word”,

² The Child Language Data Exchange System (CHILDES) is an online database of children's language corpora.

“two-word” and “sentence” stages or whether LA is a continual process and that such divisions are simply a useful approach to analysis. I have overviewed literature that has debated notions of “naturalness”, “language-particularity” and “input”. I have drawn a comparison between aspects of syntactic and phonological acquisition discussed in LA literature and “recurrent communicative practices” discussed in language socialisation literature. I have also considered how the emergence of grammatical structures of te reo Māori might compare with the order of acquisition of English structures. It is this focus on the order of emergence that links my linguistic analysis (where I focus on progression towards language proficiency), with my socialisation analysis (where I focus on progression towards proficiency with other practices, roles and responsibilities). The notion of “socialisation trajectory” (see 2.5.1) underpins that link and is the approach by which I address my two research questions.

2.4 Bilingual first language acquisition and bilingual language use

De Houwer (2009) defines bilingual first-language acquisition (BFLA) as

the development of language in young children who hear two languages spoken to them from birth...[with] no chronological difference between the two languages in terms of when the children started to hear them.
(p. 2)

This contrasts with monolingual first-language acquisition (1L1), which describes a child’s exposure to, and acquisition of a single language from birth, and with early second-language acquisition when a 1L1 child is exposed to a second language from a young age, but not from birth (de Houwer, 2009).

2.4.1 BFL children’s language use

Exploring features of BFL children’s language use, de Houwer et al. (2006) showed that bilingual children understand from an early age that more than one form can express a single meaning. The authors examined data from 31 infants,

gathered by asking parents to identify which items their 13-month-old BFL children understood from a French list and a Dutch list of vocabulary items (MacArthur Communicative Development Inventory). The authors concluded that the children were operating with bilingual comprehension by age 13 months.

Knowing that two words can refer to a single entity, and having two sets of vocabulary, is one feature of bilingualism. Baker (1992) argued that a bilingual repertoire involves not only the sum of two languages but also the intersections and interactions between those two languages. For example, having two languages to draw on means that a bilingual may produce either, both, or neither of their languages in any given interaction (de Houwer, 2009; Grosjean, 2004). Moving from one language to another has been termed “code-switching”, or “code-mixing”, and there is a great deal of research on this phenomenon (see Lin, 2013, for review of code-switching in classrooms).

Some BFL children show similar levels of use of their two languages, while others show a preference for, or a greater use of, one language. De Houwer (2009) identifies two patterns of BFLA for normally-developing children, as illustrated in Table 2.1.

Table 2.1. Patterns of BFLA acquisition (adapted from de Houwer, 2009, p. 3)

	Child understands Language A	Child speaks Language A	Child understands Language Alpha	Child speaks Language Alpha
Pattern 1	yes	yes	yes	yes
Pattern 2	yes	yes	yes	no

I highlight two points regarding Table 2.1. First, the table shows polarities in language production, but does not attempt to show the grey areas between “yes” and “no”. The children in my study produced utterances from both languages, but each child had a clear preference for one. Since my study has a

focus on language preference or choice, I use the term “principal first productive language” to refer to that choice. Second, in her survey of BFL children in Flanders, de Houwer (2009) found that in two-parent households where both parents spoke a minority language at home and one parent spoke the majority language (Dutch) as well, 93% of children in these homes spoke both the minority language and Dutch (Pattern 1). However, in two-parent households where both parents spoke the majority language at home and only one parent also spoke a minority language, only 36% of children in those homes spoke the minority language as well as Dutch. These figures tell us that Pattern 2 is much more likely for children of the latter group, and have some relevance to my study, which also involves a minority language and a majority language.

De Houwer (2009) identified five utterance types that young children produce, as in Table 2.2.

Table 2.2: Types of utterances produced by BFLA children (adapted from de Houwer 2009, p. 43)

Language category	Description
Utterance in Language Alpha	The entire utterance is in Language Alpha
Utterance in Language A	The entire utterance is in Language A
Mixed utterance	Utterance combines elements of Language A and Language Alpha
Indeterminate utterance	Utterance could be entirely in Language A, or entirely in Language Alpha (usually short utterances)
Floating utterance	Apparently meaningful utterance whose language cannot be determined

BFL children may begin to produce mixed utterances even when they are producing only single words. De Houwer (2009) refers to single words that combine elements of both languages as “blends”.

Another form of mixed utterance has been termed “cross-linguistic transfer” or “cross-linguistic influence”, which involves “the structural influence of one language on another” (Nicoladis, 2006, p. 15). Nicoladis studied adjective-

placement by preschool French-English children. French has N + ADJ order, while English has ADJ + N order. She found that the bilingual children in her study were more likely than the monolingual children to use other-language adjective-noun order, but that the bilinguals were “more often correct in their adjective placement than incorrect”. She found that “knowing another language” was less influential on the children’s adjective placement than “knowing the syntactic strings in each language” (Nicoladis, 2006, p. 24). That is, the bilingual children produced appropriately-ordered strings more often than not.

It is clear that some BFL children use more of one of their languages than the other. Some researchers refer to this as a “passive” or “weaker” knowledge of one language, and an “active” or “stronger” knowledge of the language they produce more often, though de Houwer (2009) has pointed out that there is nothing passive about knowing two languages, but speaking only one. Another way of characterising different production levels is as a choice or preference to use one language over another.

Chan and Nicoladis (2010) explored the relationship between input – specifically, exposure time – and early vocabulary in two BFL English-Mandarin children growing up in Canada. The two boys in the study both heard significantly more Mandarin than English, and for one of them, the results showed a correlation between his early vocabulary and the proportion of each language that he was exposed to. However, the second child spent considerable time and effort attending to the English spoken by his older (by ten years) sister. This skewed his vocabulary learning towards her language of choice – the dominant language of the community – and away from the general proportion of language in his environment. Chan and Nicoladis’ findings suggested that vocabulary learning is influenced by young children’s desire to participate with older children (see 5.4.3.3). In my study I also bear in mind the possibility that young children may be sensitive to the status of languages in

their community, and I consider young children's desire to participate with *whānau* members of different age groups.

Makihara's (2005) research indicated the importance of social aspects of the language choice of the Spanish-Rapa Nui children in her study (see 2.1.5). While the children chose to speak mainly Spanish overall, they also chose to use features of Rapa Nui for social and communicative functions. Patwa-English bilingual children in Paugh's (2005; 2012) study also chose to use Patwa in some contexts, despite heavy adult sanction against such use (see 2.1.5).

Evidence for the importance of exposure to minority-language input comes from six studies of bilingualism that Gathercole and Thomas (2009) undertook in Wales, where English is the dominant language and Welsh a minority language. Participants spoke both Welsh and English and included adults, and groups of children with mean ages of 5, 7, and 9 years. The studies tested participants' knowledge of vocabulary and idiom in Welsh and English. The researchers found that the amount of exposure to Welsh highly influenced test results in that language at all ages. In other words, both adults and children who received high levels of Welsh input at home or at school performed better in Welsh tests than those whose Welsh input was not as high. Similarly, younger children from English-only homes and those from Welsh-English schools performed better in English tests than other children. However, the differences in English performance lessened with older children, and disappeared altogether with adults, leading the researchers to conclude that the prevalence of English as a dominant language in the broader community provided sufficient input for acquisition to occur. This link between acquisition and language prevalence and dominance is one that must be considered in my study of BFL socialisation and acquisition involving a minority language.

The studies reviewed here underline Baker's (1992) point that, in researching the language of BFL children, it is important to consider both languages, and the interactions between those languages; and also to consider factors such as input, language status, and children's language development and choice, when analysing the productive language of young children.

2.4.2 Section summary

It is clear that de Houwer's (2009) BFLA research approach has some relevance to my examination of the language development of two young children who are growing up in MEB environments, not just because de Houwer's approach concerns children who hear two languages from birth but because terminology and concepts that she employed within her approach were developed specifically for young children whose language proficiency is still emerging. An overview of studies on bilingualism such as those by Chan and Nicoladis (2010), de Houwer et al. (2006), Gathercole and Thomas (2009) Nicoladis (2006), and Paugh (2005; 2012) provides useful perspectives from which to consider the MEB environments and the language use of the children in my study.

2.5 Analytic approach

Studies of language socialisation have used units of analysis that preserve interconnections between children and their sociocultural and linguistic environments (Vygotsky, 1934/1986; Valsiner, 1985; Rogoff, 1995; 2003; de León 1998; 2012; Wortham, 2005), while permitting the close examination of those environments. For instance, de León advocated "participation arrangements" as units for the analysis of the process of socialisation, while Wortham used "activity" and "events" in his "socialisation trajectories" model. Since this latter model provides a frame within which to attend to children's progression towards cultural and linguistic norms, and to individual particularities in achieving (or not achieving) those norms, I have chosen

Wortham's model as a framework for my analysis. Within that model, I make use of the concepts and units de León uses within her participation frameworks model, and I use linguistic analytic tools and units to compare the children's productive language data to patterns considered to be universal in language and LA, and to patterns considered to be particular to English and Māori.

2.5.1 Trajectories of socialisation

Wortham used the term "trajectories of socialization" to describe "linked series of events... across which an individual participates, becomes socialized, and thereby develops" (2005, p. 97). In a socialisation trajectory, development and learning unfold over time "as signs and segments from several events converge and come to presuppose each other" (Wortham, 2005, p. 98). A trajectory can be revealed by analysing events over time, and signs in individual events can be linked to other signs across events and sub-events to reveal an individual's socialisation along a timeline.

Wortham (2005) likened establishing a trajectory of socialisation to "establishing coherence in a single speech event" (p. 97) because, in each case, it is the contextual information that links signs. A trajectory is revealed across a number of tacit signs that can only be seen to "presuppose" each other on historical reflection. Occasionally, "denotationally explicit metasigns" occur that give greater meaning to less obvious signs (Wortham, 2005, p. 98). In Wortham's study, for instance, a teacher's comment, "You're a bad student," to a teenager in her class meant that earlier tacit and subtle signs regarding the student's developing identity became meaningful in light of this one denotationally explicit metasign.

Wortham's (2005) approach differs from, but builds on, classic language socialisation, which focussed on "recurrent communicative practices" (Schieffelin & Ochs, 1996, p. 253). Wortham argued that recurrence of practice was not sufficient to show why some individuals take on those practices, and

others do not. Just as the use of formulaic utterances (see 2.5.5.5) in a speech event cannot be presupposed to indicate how a conversation will end, so also recurrent practices are not sufficient to explain why individuals learn differently. Speech events and socialisation events must be contextualised in order to discover why some individuals follow expected pathways of socialisation, and yet others diverge. This approach is useful to my study because it can explain a child's unique language socialisation trajectory.

A child may be guided along certain pathways towards the preferred roles and activities of a social group, but different social groups and different individuals within groups can project different pathways. Equally, the child may, as an agent of her own learning, choose whether to take the expected pathway, to take an alternative route to the same end, or to otherwise diverge (de León, 1998; 2012; Martinez-Sussmann et al., 2009). Thus, "we cannot tell ahead of time which events will form the relevant trajectory for an individual" (Wortham, 2005, p. 99). Wortham suggests that, the concept of "timescales" facilitates understanding of unexpected individual trajectories that cannot be explained by attending only to recurrent events.

2.5.2 Timescales

"Timescales" are periods across which "every process, action, social practice, or activity occurs", and complex processes occur on "more than one timescale" (Lemke, 2000, p. 275). In studying a complex process such as the academic socialisation of a young adult, or an infant's acquisition of language, it is useful to identify several relevant timescales, since development "depend[s] on processes from disparate timescales" (Wortham, 2005, p. 99). This is because development can only be observed historically (Vygotsky, 1934/1986; see also 2.1.2), or as it occurs. However, different historical periods, and different historical perspectives, reveal development in different lights, and any number of timescales exist,

forming a continuum of timescales relevant to describing processes in the human and natural worlds—ranging from processes that characteristically take fractions of a second to processes that take thousands of years. (Wortham, 2005, p. 99)

In order to understand how the unique trajectory of a child's language socialisation develops over a three-year period, I have identified five relevant timescales. Two are "sociohistorical" timescales and the other three are local, ontogenetic (Wortham, 2005), and interactional timescales (Lemke, 2000). "Sociohistorical" patterns emerge "over decades and centuries" (p. 100), and understanding those patterns requires data from these timescales. The lives of the children in my study occur in cultural flows that are indexed or symbolised in both the Māori and English languages. This signals two major sociohistorical timescales: a traditional *tikanga Māori* (TM) timescale, which references Kaupapa Māori and *iwi* 'tribal' values, beliefs and communicative practices, and an Anglo-colonial timescale which references English and settler values, roles, and communicative practices. The intersection of these two timescales is reflected, for example in songs that have European tunes, but Māori lyrics related to local and international political issues (Ka'ai-Mahuta, 2010). The third relevant timescale is an "ontogenetic timescale" (Wortham, 2005). "Ontogenetic" patterns are those that relate to a child's development over months and years, such as moving from producing high-frequency holophrastic utterances to generating original multi-morph structures. Understanding these patterns requires data over that time period. The fourth relevant timescale is a "*whānau* timescale" which is similar to Wortham's (2005) "local timescale". Local and *whānau* patterns, such as the way a *whānau* interacts with infants, emerge over days, months, and years, but may also draw on wider circulating TM values such as *manaakitanga* 'care, hospitality', and rituals of greeting. Finally, a smile, a word or a sentence occurs across an "interactional timescale" (Lemke, 2000) of micro-seconds, seconds, and minutes. The five-strong configuration of timescales I have identified provides a particular set of historical

perspectives from which to analyse my data and to understand a child's progression as she learns language and accumulates participant roles while interacting with her *whānau*.

2.5.3 Participation: roles and arrangements

Children learn language as they participate socially while acting in a variety of “participant roles” (de León, 2012) within varied “participatory arrangements” (de León, 1998). Young infants have been characterised in research as “hearers” who are addressed by, and later become, “speakers” in dyadic participatory arrangements (Ferguson, 1964; Fernald, 1985). The caregiver-as-speaker and child-as-hearer dyadic participatory arrangement has received a great deal of attention in psychological, psycholinguistic and LA research (see, for review, Tomasello & Farrar, 1986; Haviland, 1998; de León, 1998; 2012; Solomon, 2012; see also Bronfenbrenner, 1979, on the dyad as a unit of analysis). However, de León's research revealed inadequacies in a dyadic speaker-hearer model and led her to argue that this participatory arrangement, on its own, is “probably too impoverished” to explain LA. De León advocated paying attention to many kinds of interaction and participation occurring in “complex participation frames” which involve

dynamic learning situation[s] where vocal and nonvocal phenomena, simplicity and complexity, dyadicity and polyadicity, sociocentrism and childcentrism are in constant flux, both synchronically and diachronically. (de León, 1998, p. 153)

The wider lens advocated by de León allows exploration of other arrangements such as triadic and multiparty interactions. It also allows for the exploration of other listening roles, such as “overhearer” and “eavesdropper”, and of roles that describe infants' preverbal facility with symbolic tools other than language, such as gaze and gesture. Thus a “proto-speaker”, is one whose communicative intent is indicated by an older participant who glosses an infant's multimodal actions as reported speech to a third party (de León, 2012). In de León's (1998)

longitudinal study of socialisation in a Zinacantec Mayan community, she gives the example of a baby who moved and vocalised in a particular way on her carer's back, who was then assigned “proto-speaker” status by her carer reporting, “she said she wants to pee” (p. 139). The characterisation of a child's role in an interaction is dependent on local values and beliefs. Children's actions may be eagerly interpreted by interlocutors, as in the Zinacantec community that de León (1998) and Haviland (1998) studied, or not, as Ochs (1998) found in Samoa where, she argued, cultural beliefs restricted people from guessing at what others were trying to express.

Table 2.3. Participant roles and their definitions

ROLE	One who participates, by:
Addressee	having a communicative practice, such as speech or eye talk, directed to her
Proto-speaker/singer	vocalising or otherwise expressing herself, and whose vocalisations or other expressions are interpreted and reported by an interlocutor as speech or song
Proto-eye-talker	gaze together with facial expression that is interpreted and reported by an interlocutor as intentional communication
Observer	directing attention to the actions or practices of one or more other participants
Overhearer	hearing the communications of one or more other participants, without being directly addressed
Audience member	watching, listening to, and engaging with performers
Respondent	responding to communication by one or more other participants
Initiator	initiating an interaction with one or more other participants
Dancer	moving rhythmically to music
Eye-talker	using gaze together with facial expression to communicate
Speaker	using words to communicate
Singer	singing (with or without words)
Performer	singing and moving rhythmically to music when one or more other participants acts as an audience

My interest in cultural patterns of non-verbal communicative practices that tie in with te reo Māori, and the fact that my study subjects were pre- and newly-verbal children, led me to use de León's (1998) notions of "participant roles" and "participatory arrangements" to investigate how one child gained proficiency in the communicative practices of her *whānau*. Table 2.3 presents my definitions of the participant roles I identified in my study (see Chapter 6).

2.5.4 Linguistic analysis

In tracing LA in my study, I use a linguistic description framework and linguistic analysis tools and concepts. For example, in my analysis I make use of the terms "types" and "tokens". "Type" refers to each discrete language form, and "token" refers to each time a "type" occurs in the data. For example, in the utterance *ka kihi, ka kihi anō*, there are three word types: *ka*, *kihi*, and *anō*; there are two tokens each of *ka* and *kihi*, and there is one token of *anō*.

Some terminology that is used to describe children's early LA has its roots in descriptions of adult language (de Houwer, 2009). This is likely due, at least in part, to the fact that many researchers analyse children's language in relation to adult language norms. Stoel-Gamon and Sosa (2007) call this "relational analysis" in their studies of children's acquisition of phonology. These researchers also use "independent analysis" in their approach, whereby children's phonology is analysed independently of adult phonology. I found Stoel-Gamon and Sosa's approach to be generally applicable in my analysis. I use "relational" analysis to describe adult grammatical norms that the children in my study may be targeting, and "independent" analysis, for example, to describe what may be the children's own experimental rules. I linked these notions of independent and relational analyses to de Houwer's (2009) argument that adult language terms are not always appropriate for very young children, whose language is still developing. For example, she avoided using terms such as "unbalanced" or having a "strong" and a "weak" language, and used "mixed

utterance” rather than “code-switching” or “code-mixing” (see, for example, Gathercole & Thomas, 2009; Qi, 2010; La Morgia, 2011, Lin, 2013). I use “mixed utterance” and other terms from BFLA to describe my case-study children’s actual language production (see Table 2.2).

When analysing my data to reveal the order of acquisition of structures, I compare the structures with adult norms, and use terms that reflect my comparison. Thus, I use the term “adult-acceptable” to denote structures that accord with sentences found acceptable to L1-Māori adults as documented in grammars of te reo Māori. I use the term “adult-approximate”, to denote structures which differ from those expected by and from adults, i.e., the structures which adults expect their children to acquire.

Because my linguistic focus in this study is on the emergence of grammatical structures, my units of analysis relate mainly to syntax, although phonological units also feature. A glossary of abbreviated linguistic terms used in my analysis is provided (p. 331). Further linguistic concepts are defined in the following section, in 4.4, or as they occur in text.

2.5.5 Further concepts and terminology

My analytic approach in this study also draws on notions such as joint attention, semiotic modalities, agency, baby talk, frequency and formulaic language that are used across disciplines. These concepts are defined and discussed briefly below as they apply to my analysis.

2.5.5.1 Attention

I use three attention terms in my thesis: joint attention; mutual attention; and keen attention.

“Joint attention” (Bruner, 1983; P. Brown, 2012; Melzoff & Moore, 1998; Morales, Mundy, & Rojas, 1998; Liszkowski, Carpenter, Henning, Striano, & Tomasello, 2004; Tomasello, 1988; Tomasello & Farrar, 1986) is the attention

of two or more people directed at the same entity at the same time, when each person is aware that the attention of the other(s) is thus engaged (Bruner, 1983). Within the first few days or weeks of birth, infants begin to “coordinate attention” or “manage joint attention” by means of, for example, mutual gaze (eye contact), smiles, and vocalisations (P. Brown, 2012).

Joint attention is a vital aspect of early language development because, in order to be able to talk about an entity (e.g., a thing, person, place or event) with others, a child needs to be able to make reference to that entity jointly with one or more others (P. Brown, 2012; Bruner, 1983; Farroni, Csibra, Simion, & Johnson, 2002; Tomasello & Farrar, 1986). Joint attention and joint referencing are “clues to non-verbal intersubjectivity” (Meltzoff & Moore, 1998, p. 48), and therefore to a child’s ability to conceive of others as “entities with whom one can share actions...goals, and intentions” (p. 49).

In my study I define “mutual attention” as similar to joint attention except that two (or more) people are attending to each other rather than to an independent entity.

I define “keen attention” as the careful observation of an activity or event by a novice, in order to learn (see, for example, Rogoff, 2013).

2.5.5.2 Semiotic modalities and multimodal semiosis

Language is one of a range of semiotic modalities that also includes, for example, rhythm (e.g., rocking), gesture (e.g., pointing with lips, eyes or index finger), stance, touch, gaze aversion, and body orientation. All cultures draw on a range of semiotic modalities in communication (de León, 2012). “Multimodal semiosis” (de León, 2012) refers to combinations of semiotic modalities, including language, which make up communicative practices that are particular to a cultural group. Haviland (1998) observed Zinacantec Mayan infants using gesture and the “absence of gesture” with communicative intent in complex ways that echoed structures and functions of speech. He concluded that the

infants used gestures not only to manage joint attention (e.g., “look over there”) but also to communicate indexical content, for example, an invitation to sit in a particular place, the whereabouts of a person, or a request for an item. In each case the child’s gesture was interpreted and glossed by an adult.

2.5.5.3 Child agency

Children are not merely passive recipients of ways of doing and being but are novices within sociocultural contexts who are developing social skills and knowledge. They are active members who contribute to the socialisation of others (of all ages) and of themselves (Ochs, 1986), and who transform the language, knowledge, ideologies and practices that are promoted by their social groups (Friedman, 2012; Schieffelin & Ochs, 1986). According to de León (2011), infants are aware of and exploit the semiotic potential of their own actions, and actively engage in their own socialisation by, for example, listening in, interpreting and responding to adult talk.

Adults may exploit or restrict child agency as a socialisation mechanism. For example, Reynolds (2008) observed Chamula Mayan children sometimes being deliberately placed between adults to parrot insulting and offensive language chunks (see 2.5.5.5) for the embellishment of an interaction, for the amusement of the adults, and for which – because of their young age – the children faced no disciplinary consequence. Reynolds argued that this practice acknowledged and exploited children’s status as active members of their communicative group, giving children “an opportunity to adopt powerful voices and test the strength of social ties within relatively safe interactions” (p. 83).

Furthermore, children have been recognised as active agents in the context of language revitalisation (Skerrett-White, 2003; Friedman, 2012; Nonaka, 2012). Nonaka’s (2012) and Paugh’s (2005; 2012) studies indicated that forms and directions of child agency are not necessarily predictable at a policy and planning level (see 2.1.5). A language socialisation approach can reveal links

between, for example, *whānau* intent and hope that their children will use te reo Māori and their children's own agency in choosing to use te reo Māori productively.

2.5.5.4 Infant-directed registers

A notion that has received attention in linguistic and psycholinguistic research is “baby talk”, also referred to as “motherese” or “child-directed speech” (Ferguson, 1964; Fernald, 1985; Fernald & Simon, 1984; Fernald & Morikawa, 1993; Kuhl, 2010; Peters, 2009; Snow, 1977; Solomon, 2012; Stoel-Gammon & Sosa, 2007). These terms refer to special registers that caregivers use with infants in many speech communities (Ferguson, 1964). Some features that these registers may share include: a simplified lexicon, exaggerated intonation, a wide pitch range, a high proportion of content words placed in sentence-final position, and emphasis on meaning and emotion (see, for example, Baldwin & Meyer, 2007; Fernald, 1985). Fernald (1985) found that babies are attuned to high pitched IDT, and Baldwin and Meyer (2007, p. 88) found that exaggerated prosodic qualities and salient word positioning may give babies cues in isolating words, and working out meaning and structure. However, studies have shown that special IDT registers are particular to cultures, and may have any, all, or none of the features described above (P. Brown, 1998; de León, 1998; Diesendruck, 2007; Schieffelin & Ochs, 1986). For example, P. Brown (1998) studied LA in a Tzeltal Mayan community, analysing audio- and video-taped interactions involving infants collected over 4 years. She observed that Tzeltal Mayan adults seldom directed talk to young children, but that the ambient language is replete with a particular form of conversational or “dialogic” repetition in which the same information is repeated across two conversational turns in adult discourse. Brown argued that this, combined with “some [child-directed] repetition” and prompting gave young children ample opportunity to parse speech and acquire language (Brown, 1998, p. 213).

While some cultures change their language to accommodate young children, as with baby talk, Schieffelin and Ochs (1986) did not observe this to be the case in the Samoan and Kaluli communities they studied. Rather, children were expected to accommodate adults by, for example, pitching their language respectfully.

2.5.5.5 Formulaic language

The concept of “formulaic”, or “routine” language appears in literature across language-focussed disciplines (Bannard & Matthews, 2011; Burdelski & Cook, 2012; Demuth, 1986; Duranti, 1997; Ellis, 2005; Reynolds, 2008; Tomasello, 2000; Watson-Gegeo & Gegeo, 1986) to refer to single-item combinations of words and morphs (Peters, 2001) and also “string[s] of up to a few words used repeatedly in interaction across various settings as an index of sociocultural meanings” (Burdelski & Cook, 2012, p. 177).

Language socialisation research identifies formulaic language chunks as integral to recurrent communicative practices. Many speech communities practice “repeating”. Demuth (1986) observed adults prompting children to repeat linguistically- and socially-appropriate forms in a Sesotho speech community in southern Africa, and Watson-Gegeo and Gegeo (1986) observed “calling-out” and “repeating” routines in West Kwara'ae in the Solomon Islands. They found that adults guided children’s acquisition of phonology, morphology, syntax and vocabulary by demonstrating “familiar and contextually relevant sentences” for young children to repeat. Children thus had the opportunity to practise adult-acceptable forms as their language developed. The authors argued that the children in their study learnt and used formulaic chunks as holophrastic items at first, but also developed understanding of underlying rules that allowed for the generation of novel utterances.

2.5.5.6 Diachronic change

Diachronic change is the change that occurs in language over time. It can result from drastic events, such as contact with another language, and also occurs slowly across generations. Keegan, King, Maclagan, Watson, and Harlow (2009) examined recorded language to explore diachronic change in vowel articulation in te reo Māori in the 20th Century, and found that Māori vowels were converging towards NZ-English vowels. Meisel (2011, p. 121) noted that “[c]hildren acquiring their first languages are frequently regarded as the principal agents of diachronic change”. Meisel’s review of his own and others’ research led him to conclude that diachronic change is more likely to result from children being exposed to significant and protracted input from L2 speakers than from BFLA, even when one language appears “weaker” than the other. This literature raised two points which are relevant to my research. First, analysis of the language in the environments of my two case-study children could give clearer insight into the children’s own productive language use. Second, careful analysis of the case-study children’s language production, in light of traditional norms, could reveal differences that indicate diachronic change. Diachronic change and other possibilities are considered when divergence from adult-language descriptions arises in my analysis (see also 4.4.5).

2.5.5.7 Communicative functions

“Communicative functions” are the communicative and/or social purposes of sentences or utterances. Five basic categories of communicative function are: personal, interpersonal, directive, referential, and imaginative (Minnesota Articulation Project, 2002). These five categories (see Table 2.4) are not specific to early LA contexts, but were devised for general education contexts. I used these categories to explain the communicative purpose of utterances in my linguistic analysis (Chapter 7).

Table 2.4. Communicative functions (adapted from Minnesota Articulation Project, 2002)

<p>Personal</p> <ul style="list-style-type: none"> • expressing one's thoughts and feelings (e.g. pain, love, joy, pleasure, happiness, surprise, likes and dislikes, distress, pain, anger, fear, anxiety) • expressing everyday feelings of hunger, thirst, fatigue, sleepiness, cold, and warmth • clarifying or arranging one's ideas
<p>Interpersonal</p> <ul style="list-style-type: none"> • greetings and farewells • <i>whanaungatanga</i>: getting to know people and developing relationships • extending and accepting invitations • showing <i>manaakitanga</i> • being polite and showing respect • indicating agreement or disagreement • arguing or debating • offering food or drinks and accepting or declining such offers • offering compliments
<p>Directive</p> <ul style="list-style-type: none"> • influencing the actions of others • giving instructions or directions, and responding to same • accepting or refusing direction • persuading • requesting items, attention, or information • asking for help and responding to a plea for help • giving warning
<p>Referential</p> <ul style="list-style-type: none"> • identifying or describing items or people in environment • understanding messages or descriptions • translating, or interpreting information • requesting or reporting facts about events or actions • formulating and supporting opinions • evaluating the results of an action or an event
<p>Imaginative</p> <ul style="list-style-type: none"> • story-telling, narrating events • proposing alternatives • creating words, rhymes, poetry, stories • recombining familiar texts creatively • experiencing and/or discussing a simulation (e.g., of an historical event) • expanding ideas suggested by others • solving problems or mysteries

2.6 Chapter Summary

In this chapter I have shown how key concepts from language socialisation research are combined with theory and notions from the fields of LA, bilingualism, and BFLA in the construction of the theoretical framework of my study. The combination provides a perspective that addresses the research questions by:

- focussing on the language socialisation of pre- and newly-verbal children;
- emphasising the interconnectedness of culture, language, and learning;
- highlighting cultural particularities and human universalities of communicative practice;
- broadly considering communicative practice in children's environments, i.e., all languages and other semiotic modalities, and participatory arrangements, while focussing on te reo Māori, and recurrent communicative practices particular to the children's cultural contexts;
- considering the role of language as both process and product of socialisation.

I have overviewed a sample of the available literature on language socialisation, LA, BLFA, and young children's use of te reo Māori that is relevant to my study. The literature has provided a number of important insights that inform the methodology for my research. Drawing together the theoretical threads from the literature, I have explained my analytic approach, based on Wortham's (2005) "socialisation trajectory" and de León's (1998) "participation framework", and have defined other relevant theoretical notions and terminology. I have shown how my study will both build on existing research, and make a new contribution to that body of research, by:

- focussing on the order in which grammatical structures of te reo Māori emerge in MEB children;
- contributing to knowledge of the wide variety of ways in which children are socialised in the many different cultures of the world; and
- throwing light on aspects of an Māori-English environment that may feature in children's language choice.

In the next chapter I present the methodological framework of my research project. I explain how my case-study children and their families came to participate in the study, and discuss some ethical considerations and concepts. I then describe my initial data-analysis methods and conventions, and outline the data sets that I analyse in later chapters.

Chapter 3: Methodology

3.0 Introduction

This chapter provides an overview of the longitudinal, qualitative, case-study methodology of my research project. This approach is appropriate for my study because it allows for the capture of rich data from people's lives, and because of its established history in language acquisition (LA) and socialisation research.

The chapter presents the methods I used to gather and transcribe data. It includes discussion of the selection of participants, and the relationship of the researcher to the research. It describes the ethical framework for the study, including defining and discussing five Kaupapa Māori (KM) research principles that guided my approach. It then describes my data-collection and transcription methods, and discusses my approach to analysing the data from the twin perspectives of linguistic analysis and language socialisation analysis.

3.1 Qualitative case-study methodology

This study is a longitudinal, qualitative case-study of bilingual first-language (BFL) socialisation and acquisition. Qualitative case-study methodology permits rich description of participants' language environments, and of events and interactions. It allows for close, in-depth inquiry into natural human development in context (Flyvbjerg, 2006). Such in-depth enquiry is essential in a study that deals with the highly idiosyncratic phenomena of bilingualism (Grosjean, 2004) and LA (Fernald & Marchman, 2011). Longitudinal case-studies also have a long tradition in LA research (see, for example, Chang-Smith, 2010; Chomsky, 1957; de Houwer, 1990; de León, 1998; Duff, 2008; La Morgia, 2011; Mills, 1985; Nieto, 2011; Schieffelin & Ochs, 1986; Slobin, 1971).

Case-studies of individual children contribute to the accumulation of knowledge about natural LA by providing detailed description of the learning of those individuals. Case-studies can provide evidence that either supports or contradicts current hypotheses about LA (Flyvbjerg, 2006). As case-studies accumulate, research across numerous cases, such as Slobin's (1985) cross-linguistic study, becomes possible. The CHILDES database makes available, to researchers worldwide, numerous language corpora that have been collected from young individuals in longitudinal case-study research over many years (MacWhinney & Snow, 1990).

As occurs in case law, individual qualitative case-studies provide information and learning that may apply to other cases (Flyvbjerg, 2006; Stake, 2006; Toma, 2006). Toma terms this "transferability" which, he argues, is a more suitable term to apply to qualitative research than "generalisability". Toma also notes that another important concept in qualitative research is "credibility", where the researcher "describes the reality of the participants who informed the research in ways that resonate with them" (p. 415.) While I do not rule out the possibility of generalisation from my findings, I aim for credibility and transferability in my study.

3.2 Participants

3.2.1 Recruitment

The impending birth of the primary case-study child provided the impetus for the present study, rather than her being recruited for it. Opportunities to undertake a case-study of a child's Māori language socialisation from birth are rare, since Māori-speaking *whānau*, and children being born into Māori-speaking *whānau*, are far fewer (see 4.3). Time, researcher, child, *whānau*, languages, and research opportunity came together fortuitously when my granddaughter, Puhi, was born in 2010. I began making video recordings of Puhi, with permission from her parents, a few weeks after her birth. At that time my purpose was two-

fold. The first was to make a family record of my grandchild's development, including her language development. The latter was motivated in part by a second purpose, which was my awareness of the lack of research into natural acquisition of te reo Māori. Once my study got underway, and I made the decision to include others in Puhi's environment within the data, her *whānau* members were also invited to participate in the study (see also 3.3.1).

I recruited another child, Jessica-Lee, and her *whānau* through my social networks, in order that some comparison of data might be made.

3.2.1.1 Child 1: Puhi

Puhi was the first child of young parents who, at the time of her birth lived in closely located but separate houses, with their respective mothers (Puhi's grandmothers), on the same street in a semi-rural town in the North Island of Aotearoa-NZ. Puhi spent time in each household. Puhi's parents, Te Puawaitanga (Māmā) and Te Tahi (Pāpā) are bilingual and have been socialised and educated through Kōhanga Reo (see 4.1), Māori-medium primary-level and English-medium secondary-level schooling. Both parents expressed a determination to raise their child as an L1-Māori speaker. Both grandmothers are L2-Māori speakers. In addition, Puhi's paternal great-grandfather, who she saw on a regular (at least fortnightly) basis, is an L1-Māori speaker in his seventies.

Various *whānau* members lived in each of Puhi's homes over her first months of life. For example, in one house there were two teenagers, a couple and their baby (four months older than Puhi), a young single mother and her baby (eleven months younger than Puhi) and Puhi's grandmother. The household situations can be described as fluidly stable, as *whānau* members stayed regularly or for long periods. Almost all members of both households were Māori-English bilinguals (MEB).

3.2.1.2 Child 2: Jessica-Lee

Jessica-Lee is the third child and first daughter in a family of three children. Throughout the study, she lived with both parents and her two older brothers in a suburban setting. Both parents are L1-English and L2-Māori speakers. Māmari, Jessica-Lee's mother, is a proficient speaker of te reo Māori, and Jessica-Lee's father, Maynard (Pāpā-M), regularly used some words and phrases of te reo Māori at the time the study began. Māmari reported that she had used some Māori language with Jessica-Lee's brothers from birth. The oldest brother, Te Rangihuia was aged eight years and Havelund was aged four years at the start of the study. During weekdays, while both parents were at work, Jessica-Lee was cared for at home by Jess, a family friend and L1-English speaker. Te Rangihuia, Havelund, Maynard and Jess productively used an occasional Māori word or phrase. Jessica-Lee's parents had expressed their desire for Jessica-Lee to become a speaker of te reo Māori before the study began, hence the *whānau* was invited to participate in the study.

3.2.2 Setting

The regional setting for the study is Te Ūpoko o te Ika a Māui, the southern portion of the North Island of Aotearoa-NZ. The data for this study were predominantly gathered in two locations. The first was Ōtaki, Puhi's *papa kāinga* 'ancestral home', where she was born and resided for most of the study. The second was a suburb in Wellington City, where the secondary case-study participant, Jessica-Lee, resided with her family. Puhi also resided in Wellington City for several months of the study. Undertaking research in Ōtaki and Wellington, I was mindful that I was doing so outside of my own tribal regions. Like many Māori today, I was raised and continue to reside outside those boundaries. As such, it was incumbent upon me to have regard for the *tikanga* 'practices and values' of the participant *whānau* and local *iwi* 'tribe(s)'.

3.2.2.1 Puhi's place

As noted in Chapter 1, this research is conducted with members of my own *whānau*, who are placed within and belong to local *iwi*, including Ngāti Raukawa te Au ki te Tonga. Here I describe the community into which Puhi was born, and present some background to the Māori community that nurtured her.

Ōtaki is a semi-rural town with a total population of approximately 5,500 people of whom some 34% are Māori. My study began 35 years after the adoption by local *iwi* of a long-term, tri-tribal strategy with goals of cultural and language revival and educational success. That strategy, Whakatupuranga Rua Mano: Generation 2000, was conceived by Whatarangi Winiata and adopted by the Raukawa Marae Trustees in 1975. It was "an experiment in tribal development which [aimed] to prepare the people of Te Atiawa, Ngāti Toa and Ngāti Raukawa and their 18 hapū, for the twenty-first century" (Winiata, 1979a). At the time the strategy was conceived, intergenerational transmission of te reo Māori had effectively ceased in the region, as it had in most Māori communities in New Zealand (Benton, 1996), and only about 5% of the adult population of Ngāti Raukawa, Ngāti Toa or Te Atiawa was able to converse in te reo Māori (Winiata, 1979b). The ensuing years saw the establishment of four Kōhanga Reo, four Māori-medium primary-school programmes, two Māori-medium high schools and a Whare Wānanga 'tertiary education centre' (Lit. 'house of higher learning') in Ōtaki. The renaissance of Māori language, art and culture, now apparent in the town, is attributable to the Whakatupuranga Rua Mano strategy. In 2013, about 50% of the town's Māori population and about 16% of the town's entire population had some ability in te reo Māori (Statistics New Zealand, 2013a).

3.2.2.2 Jessica-Lee's place

Jessica-Lee lives with her parents and brothers in a suburb of Wellington City, the capital of Aotearoa-NZ. The population of Wellington City in 2013 was about

191,000, of whom around 9% were Māori. As in Ōtaki, intergenerational transmission of te reo Māori effectively ceased in Wellington many decades ago, and speaker numbers in the area continue to show a decline, as they do across the national population (see 4.3). In 2013, about 2.4% of the population in Wellington City spoke te reo Māori (Statistics New Zealand, 2013a), compared to 3.3% in the Greater Wellington region, and 3.5% nationally (Statistics New Zealand, 2013b). No figures were available for particular suburbs in Wellington City.

3.3 Ethical considerations

3.3.1 Consent

The parents of the case-study children, and of all other children who contributed to my data, were provided with written and verbal information about the study, and asked to give their written and/or verbal consent. In Puhi's case I asked permission from her parents to video-record their infant from the age of 0;6 (months;weeks), prior to the start of the study proper. I wanted to begin recording Puhi as soon as possible, in order to establish systematic data collection. At the time, I discussed with Puhi's parents the possibility of documenting her LA, and explained that any footage I captured might be used as data for an academic research project of that nature. If not, the footage would simply be a *whānau* record. Puhi's parents gave verbal agreement at that time, and later, once the study proper was underway, her parents gave their formal written permission for continued gathering of data from Puhi, to age 30 months, and from themselves as participants over that time (Appendix 1A). When it became desirable to include data gathered over a longer time period than initially anticipated, Puhi's parents gave their verbal consent for this to occur. Since the additional period extended to nine months, I later asked them to formalise their consent in written form (Appendix 1F).

Consent was also sought from other *whānau* members who were participants in the study through their presence in Puhi's life, and thus in the research project (Appendix 1B and 1C). It was also necessary to gain consent from the first Kōhanga Reo that Puhi attended, where three recording sessions occurred, and from her second Kōhanga Reo, where another recording session occurred. This involved face-to-face *tono* 'request(s)' to the *whānau* of the Kōhanga at a *hui* 'meeting', as well as written information and consent forms (Appendix 1D). Almost all consenting participants gave permission for their own names, and/or their children's names to be included in my thesis. However, I use abbreviated, identification terms (e.g., B = 'boy'; Unc = Uncle) with names to assist the reader (see Tables 4.1 and 4.2) to keep track of the large number of participants.

3.3.2 Researcher influence and interference

As a member of the research community and as Puhi's grandmother, I shared with her the same social context and speech community and contributed to her language-learning history as it unfolded. As her grandmother it was natural for me to have a close relationship with my *mokopuna* 'grandchild' and to influence her LA whether or not the research was taking place. However, I aimed to maintain my awareness of the fine line between the role of researcher and that of grandmother. For example, at times I felt concern that my granddaughter would be adversely affected growing through her earliest months and years with a camera pointed at her. I then observed that the research camera was only one of several cameras that were aimed at her. On most days, family members took photos and filmed her on ever-present cell-phone cameras. Puhi has grown up with cameras being a normal part of her everyday life. I believe, therefore, that the research camera was no more invasive to her than the others. Indeed, Puhi, Jessica-Lee, and other participant children showed an interest in the research camera that was so often present, as they did in all the

other electronic devices that *whānau* members used around them. They often approached my camera, touched it, and looked at the viewfinder-screen, and occasionally one of them knocked it over or turned it off. Adults, including myself, were regularly captured on camera saying *waiho te kāmera* ‘leave the camera’. An example of this is illustrated in Cameo 3.1 below. One way I addressed the children’s interest was to include them by encouraging them to look at the viewfinder-screen, playing video-footage back to them, and talking with them about what I was doing. On at least two occasions, I gave the children earphones so that they could hear their voices through the microphones they wore. The children responded enthusiastically in those interactions, which were also captured as data for the study. The children were present at times that I discussed footage with *whānau*. I also arranged for *whānau* members, including children, to be involved by asking them to operate the camera at times. This approach and the resulting footage contributed richness to the data.

When I transcribed video-recordings, I noted several events in which participants, myself included, adapted what we did and said because of the presence of the camera. For example, at times I interrupted interaction to remind *whānau* members that the camera was recording, such as (a) when Kui arrived home from work during recording, (b) when two participants argued loudly, and (c) when a participant walked into camera-shot and, oblivious to the camera, began changing clothes on-screen.

It was incumbent on me, as caregiver-researcher to be mindful of social, cultural and linguistic practices that I brought to the study as a grandmother, and the influence that, regardless of research, I inevitably exerted on my *mokopuna*. It was necessary to cultivate self-awareness and reflection during data-collection and at every step in the data-analysis process. For example, I have reflected on some recording sessions that I arranged to capture specific socialisation events,

such as when I read a book to Puhi. I am aware that I had a great deal of influence over her socialisation in that session, and that the session was contrived to the extent that the recording and reading sessions did not randomly occur together. However, because I read books to Puhi regularly, the result was the capture of such an event.

I was present during most of the recordings of Puhi, and Jessica-Lee's mother Māmari was present at every recording of Jessica-Lee. Our presence influenced the data in numerous ways, for example, by increasing the amount of te reo Māori used with the two children. This may have skewed the data towards te reo Māori input (see 7.3.3). In Jessica-Lee's case, Māmari noted that participating in the research had considerable influence, not only on her daughter's language socialisation and acquisition, but on the language use of the *whānau* as a whole. She explained:

It has made me conscious of what language I'm using to her. Just having to think about it every week or every two weeks has made me use te reo Māori a lot more [than I might have were it not for the research]. It's also had a big effect on Maynard's language. He is using a lot more Māori than before [the research began]. It's been great. I'm also using it a lot more with the boys. The older one... he wants to learn Māori now, and both of them are understanding what I say.
(Māmari Stephens, unsolicited comment, 10 April 2012.)

Interference of other types also occurred, for example, if music or television was playing loudly, the camera operator and/or researcher sometimes asked for it to be turned down, as illustrated in Cameo 3.1.

Cameo 3.1. Researcher interference
Puhi's age: 2;0 (months;weeks)

4:39	MH (to Unc-Awa) Can you turn that [recorded music] off please, so we can hear while we record? ...
5.05	G-Waiaio(24;0) approaches the camera. MH takes her arm, saying gently: MH Waiho, waiho. Waiho te kamera <leave [it] (rep) leave the camera>

A further consideration was the tension that arose between my position as Puhi's grandmother and my position as researcher. For example, Puhi refused to allow me to attach the microphone to her clothing during several recording sessions and on more than one such occasion I used my status as her grandmother to try to persuade her to accept the microphone. As a researcher I have reflected that, ethically, I could have allowed Puhi to decide whether or not to participate at any given time, though potentially, this might have resulted in a premature halt to data-gathering, and thus to the whole project. If she was stressed and not willing to be recorded, I did not attempt to persuade her otherwise.

3.3.3 *Family members in research*

When preparing to embark upon a study that involved my own *whānau*, and that focussed on my infant granddaughter, I was aware that in LA and BFLA research, family-member study was standard practice historically (Genesee & Nicoladis, 2007), and longitudinal case-studies of children who are family members – often the researcher's own children – were common in these fields (see, for example, de Houwer et al., 2006; Fantini, 1985; Halliday, 1975; Peters & Menn, 1993; Skinner, 1948; N. Smith, 2010; Wells, 1986). In addition, research methods I was planning to use involved insider research. Qualitative research relies on the researcher being, or working towards becoming, an insider (Toma, 2006; Flyvbjerg 2006). Kaupapa Māori researchers stress the importance of an insider perspective if the research is to resonate with the researched (Higgins, 2004; L.T. Smith, 1999). Language socialisation researchers have noted that the subtleties of group meaning-making are more accessible to a researcher with insider status (Ochs, 1988; Schieffelin and Ochs, 1986), and De Houwer (2009) has argued that in BFLA studies, a thorough knowledge of the child's languages, and familiarity with his/her social contexts, speech communities, and language-learning history is not merely

desirable but is essential. This is because those who are closest to the child are better able to interpret a child's efforts at early communication because they have sound, insider knowledge of linguistic and social contexts and history, and are members of the child's speech community. In addition, it was my belief that *whānau* have a vested interest in their children's language socialisation, and that it is their role to contribute to a child's socialisation through and into language. However, when I consulted with two *kaumātua* 'elders' immediately prior to my study, Professor Wally Penetito and Leon Hunia (my father) urged me to carefully consider issues around research with *whānau*, including possible risks to participants. Professor Penetito (personal communication, 2011) warned that there was danger in simply thinking that, "this is my *whānau* and, of course, I'm not going to hurt my *whānau*". Drawing from their knowledge of traditional ways of dealing with issues that affect *whānau* and *hapū*, they outlined the need for *manaakitanga* 'care' of all involved in the research (see also 3.4 and 4.2), and advocated transparency as an important methodological approach, so that the *whānau* could contribute as a whole (*mahitahi*) to watch over (*mataara*) the safety and *mana* 'dignity' of participants, particularly of children. Thus I was guided to, and thereafter my study was guided by, a set of Kaupapa Māori 'Māori philosophical' principles described in 3.4.

3.4 Kaupapa Māori principles

In recent times, Māori communities have articulated their expectation that research be conducted within a KM framework or, at the very least, that it be guided by KM principles. Such principles have been discussed in academic literature (Bishop, 2003, 2008; Eketone, 2008; Pihama, 2001; L.T. Smith, 1999; Walker, Eketone & Gibbs, 2006) in regards to their relevance to KM research methodologies (see 4.1) and there is some variation in their definition and use. Five principles, *mataara*, *mana*, *mahitahi*, *manaaki* and *whanaungatanga* are

integral to the ethical framework of this study and are explained in sections 3.4.1 to 3.4.5.

3.4.1 Mataara ‘alert watchfulness’

The practice that I refer to as *mataara* is one whose value I identified from my own upbringing, and one that I adopted as a fundamental guiding principle in my study. *Mataara* is defined in dictionaries as ‘alert, watchful, vigilant’, and ‘to watch, observe, witness’ (Te Aka; Williams). *Mataara* was promoted to me in my own *whānau*, through, for example, directives such as *mahia ō karu*, and its English equivalent “use your eyes” (see 4.2.2), games that involved gaze, and pointed questions such as “Are you watching the little one [child]?” In addition, the call *kia mataara* ‘be alert’ was broadcast in my home each day when state-run television reluctantly conceded a four-minute slot for Māori-language news programming from the early 1980s (Fox, 2014). *Mataara* as a traditional practice in my *hapū* allowed many people to work together in close and hazardous settings, such as in a *wharekai* ‘dining hall’, with knives, fire, steam, hot fat and hot ovens, while children came and went, and infants were indulged. I recall no injuries as continuous meals were prepared, and hundreds of people were fed and thereby shown *manaakitanga* (see 3.4.3). In such settings, children observed and practised their way into their roles and responsibilities in our *whānau*, *hapū* and *iwi*.

In this thesis I define *mataara* as:

- alert watchfulness over and around people;
- awareness of individuals who are present, and those who are absent, of those who have gone on, and those yet to arrive (physically and in spirit);
- bearing risks in mind, predicting and mitigating harm to others, especially to young children;
- watching others closely in order to see, understand, and learn;
- being in the right place, and acting in the right way by watching and moving with others; and

- a reciprocal notion of being alert through watching, and being alert to the watching of others.

In my study, the principle of *mataara* guided me to stay alert, and to observe carefully in all contexts throughout the study. It meant that I closely observed the two case-study children in interactions with their *whānau* as a researcher. *Mataara* meant that, as a newcomer to the two participant *whānau*, I observed in order to learn how to conduct myself, to move with the *whānau* (and to avoid getting in the way), to be aware of reactions and judge what was appropriate and what was not, to understand that I was being closely observed in return, and watching over children as a responsible *whānau* member. *Mataara* tied in with the principles defined below because it meant being conscious and careful of participants' *mana* (see 3.4.2), being aware of and present for *mahitahi* (see 3.4.3), being sensitive to participants in order to *manaaki* (see 3.4.4), and understanding and practising *whanaungatanga* (see 3.4.5). *Mataara*, as it relates to Puhī's socialisation, is discussed further in Chapter 6.

3.4.2 Mana 'status, prestige, dignity'

In my study the principle of *mana* meant respecting my participants' contributions and wishes; being transparent and keeping participants informed about the study, the data and my analysis; being careful about the material I shared in the thesis; and cross-checking to ensure that my interpretations of speech and social situations aligned with those of other *whānau* members. It also meant appreciating the honour that was afforded me by participants allowing me into their homes; upholding the values of each participant's *whānau*, and conducting myself according to those values; reading non-verbal communication and being open to participants' wishes, including when they wished to not participate at times over the duration of the study.

3.4.3 Mahitahi ‘working and acting together’

This principle is about working together towards collective goals that have shared benefits, and involve shared discovery (Durie, 2004). There were four major collective goals and many sub-goals over the course of the study. One of the major collective goals was the completion of the study, indicated by the encouragement and support given me by the two participant *whānau*. The three other major goals were: raising young children as contributing *whānau* members; socialising young children towards speaking te reo Māori; and revitalisation of te reo Māori (see 4.1). As *whānau*, we worked together towards these tightly-interwoven goals. Examples of the many sub-goals are: holding a *whānau* celebration; sharing a meal; and travelling together to attend a *kapa haka* competition (see 4.2.1.3.). Throughout the study I worked closely with my participant *whānau* on their terms while in their homes. This involved negotiating meaning, learning new ways, and contributing to *whānau* well-being by, for example, feeding, listening, talking, cleaning, nurturing, healing and *manaakitanga* (see 3.4.4). It also involved sharing my findings regularly with participants. I did this in a range of ways that included informal face-to-face and email discussion with individual *whānau* members, sharing results informally with individuals and with *whānau* groups, presenting formally to over 100 attendees at a reunion of Puhī’s *whānau* in October 2014, and inviting participants to attend formal presentations on the university campus.

3.4.4 Manaakitanga ‘caring, hospitality’

Manaakitanga ties in with *mana* ‘prestige’, and status. *Manaakitanga* can impact on the *mana* of those who are well-looked-after because their status is honoured, and of those who *manaaki*, as their prestige is heightened. The reverse is also true. In my research this principle guided my concern with making participants feel comfortable, involved and informed (see 3.3.3). *Manaakitanga* also ties in with the practice of *takoha*, which is concerned with

contributing materials, food and services for collective well-being in order that *manaakitanga* can be achieved. Over the course of my study this meant being involved and present at important *whānau* events, and helping out with work and resources. With Jessica-Lee's *whānau*, whom I visited once a month, I made dessert to share, and took produce from my garden, while they shared their evening meal with me. I was in almost daily contact with Puhi's *whānau*, since we shared Puhi in our lives, and because we lived nearby. Puhi's *whānau* showed their *manaakitanga* by including my *whānau* in their special occasions, to which I contributed, as all her *whānau* members did, with signature dishes, and other goods, and by helping out in such ways as washing dishes and setting tables, acting as photographer, and taking responsibility as required.

3.4.5 Whanaungatanga 'relationships'

The concept of *whanaungatanga* is "one of the most fundamental ideas within Māori culture" (Bishop, 1995, p. 3). Perhaps due to orthographic and semantic overlaps, the word has been linked to *whānau* 'extended family' (see, for example, Bishop, 1995; Mead, 2003; Royal-Tangaere, 2012; see also Te Aka), but is morphologically linked more closely to *whanau* 'to lean' (Williams), which I interpret as 'to connect'. Regardless, it now expresses the concept of relationships that are cemented by shared *whakapapa* 'genealogy'; by new *whakapapa* formed through the birth of children; and by shared experience (Mead, 2003; Royal-Tangaere, 2012). The importance of relationships in the Māori world is captured in the *whakataukī* 'adage'

He hono tangata e kore e motu, kāpā te taura waka ka motu
Human bonds cannot be broken,
whereas the rope binding a boat can be broken

Mead notes, however, that such bonds require *manaakitanga* 'nurture', *aroha* 'love' and reciprocity of support in order to remain strong.

Bishop's (1995) doctoral thesis focussed on *whakawhanaungatanga* 'establishing and maintaining relationships', which he described as an essential

value, process and strategy in KM research. He noted that *whanaungatanga* was more than “kin connectedness and task engagement [as] it is also a matter of there being a focus on the group rather than on the self” (p. 223). *Whanaungatanga* thus ties in with *mataara* (see 3.4.1) since it expresses the cultural notion of an awareness of the collective with all its intra-connections, as well as of particular kinship connections between individuals. Bishop argued that undertaking KM research meant committing to long-term relationships, and becoming “physically, ethically, morally and spiritually” involved (Bishop, 1995, p. ii), both in the research and in the relationships that are built in the process of the research. *Whanaungatanga* positions the researcher within the research community, where dealing with, and being accountable to, the research community is a reality.

As a fundamental value, *whanaungatanga* is closely interwoven with language and language socialisation. In their study, Hohepa et al. (1992) defined *whanaungatanga* as

...language behaviour that expresses or reinforces identity as part of a whaanau or family group (both actual blood ties and the whaanau made up by those [e.g.,] on the marae complex...), that identifies belonging, responsibilities and roles inherent to that whaanau [sic, see glossary].
(p. 336)

Royal-Tangaere (2012) proposed in her study that language socialisation is “an aspect of *whanaungatanga*”, and also that *whanaungatanga* is “an aspect of language socialisation” (p. 194).

In my research the *whanaungatanga* that connected me to my participants was multi-layered, and different in the two participant *whānau*. I was connected to Puhi primarily as a *whānau* member and secondarily as a researcher. Ideally, I would always have prioritised the roles and responsibilities I had as a *whānau* member over those of being a researcher, but sometimes the time I was required to spend as researcher took me away from responsibilities as Puhi’s grandmother. I met Jessica-Lee and her *whānau* as a researcher first, and

whanaungatanga developed as the research progressed. The resulting relationships are on-going, as is my responsibility to my two participant *whānau* in representing the insights gained through my being involved with them.

3.5 Data-collection methods

I did not restrict myself to a particular set of data gathering methods, but drew on a mix of ethnographic and linguistic research traditions, guided by KM principles (see 3.3). The main three methods were video recording, diary-keeping, and *whānau* sources. Table 3.1 details how each data source is cited in text.

Table 3.1. Data sources and citation conventions

Data source	Cited as
Video recording	Cameo
Diary (includes observation and reflective notes)	Diary
Whānau – informal conversation	Unsolicited comment
Whānau – informal interview	Interview
Whānau – social media comments	Facebook
Whānau – photographs	Whānau photo

I note that, despite the use of mixed data-collection methods, most of what the children said in the course of their daily lives was left un-captured, and the finalised sets of raw data cannot be considered a complete picture of the children’s language knowledge and proficiency.

3.5.1 Video-recording

Video- and audio-recording is integral to the methodology of language-socialisation research. Language socialisation sits within the domain of anthropological enquiry because it seeks to articulate and understand routine, everyday activities that occur within meaningful cultural contexts (Schieffelin & Ochs, 1996). This, Schieffelin & Ochs proposed, is achieved by

linking microanalytic accounts of children’s discourse to more general ethnographic data, including recorded and transcribed social interactions, interviews, and participant observations. (p. 252)

Video-recording allows the capture both of what is said and what is not said, i.e., the wider social context within which a child is learning (Iverson, 2010; Schieffelin & Ochs, 1996). Specifically, video capture allows the researcher to

[i]lluminate not only how novices are socialized to develop communicative skills within a single language but also how they are socialized to draw on multiple codes to constitute shifts in communicative acts, activities, identities, affect, and other facets of the situation. (Schieffelin & Ochs, 1996, p. 25)

In my study, I aimed to video-record the children for 30 minutes each week, to capture their rapidly-developing language. In each session I used one of four high-definition video cameras (see Table 3.2.). In addition, some recordings made by *whānau* members on their own equipment (e.g., cell phones) were also collected as data.

The purchase of a remote microphone approximately half-way through the data-gathering period meant that the camera could be placed some distance away from the children and their interlocutors, yet would still capture clear audio material. Most video-recordings were made in the children's homes, during the course of an average weekday. However, in order to capture a more rounded picture of input to the children, the time and place of recording was sometimes varied.

I began video-recording Puhi in November 2010. From that time until July 2011, I focussed the camera close-up, in line with the original intention of the study, which was to document her LA from a linguistic perspective. I believed that close focus would provide the most useful data, as well as capturing the best audio quality with the equipment available at that time. In July 2011, my academic interest in language-socialisation studies caused me to change from a purely LA focus to a language-socialisation perspective. As a result, the camera was pulled back to capture other participants who were interacting with the case-study children. Ochs (1999) explained that, unlike LA research, language-socialisation research focuses primary attention (via gaze and

camera) on the wider activities by, with, and around a child. Using this methodology, there was scope to analyse the wider context of the language learner as a participant within “socially and culturally organized interactions that conjoin less and more experienced persons in the structuring of knowledge, emotion, and social action” (Ochs, 1999, p. 230).

Table 3.2. Recording equipment

Device	Description	Limitations
Panasonic Lumix DMC-FZ50	Still camera with built in microphone, able to record video clips	Video clips not HD; limited in length to approx. 30 mins. Sound quality poor in noisy/outdoor settings
Panasonic Lumix DMC-FZ28	Still camera with built in microphone, able to record HD video clips	Video clips limited in length to between 8 and 11 mins. Sound quality poor in noisy/outdoor settings
Sony HDR-PJ10	HD video camera with built in microphone and external microphone capacity, takes still photos automatically while video recording. Records for 30+ mins	Sound quality poor in noisy/outdoor settings without external microphone
Remote microphone (used with Sony HDR-PJ10)	High quality audio capture of productive language from subject	

Also in July 2011, Jessica-Lee joined the study. At that time, my aim was to record each of the case-study children continuously for a thirty-minute period each week. However, recording became *ad hoc* in both cases due to *whānau* timetables, children’s moods, and the capability and capacity of available equipment. When recording was not possible or was interrupted, it was continued at the earliest possible time following.

In Puihi’s case, recording occurred at a variety of times and places, including at Kōhanga Reo, at family events, at home and in the community. On some occasions when she was with me, and was being particularly talkative, or was involved in an activity I wanted to capture, I took the opportunity to record her immediately. Jessica-Lee’s mother, who worked full-time, video-recorded

Jessica-Lee each fortnight at a time when she was able to fit the extra responsibility around usual family dynamics. Towards the end of 2012, the children were speaking fluently and their preference for using one of their two languages was clear. I therefore decided to reduce the frequency of recordings of Puhi from weekly to fortnightly, and of Jessica-Lee from weekly to monthly. Ultimately these factors resulted in considerably more footage of Puhi (approximately sixty-four hours) than of Jessica-Lee (approximately fifteen hours).

The dates that recording began and ended and the ages of the children at those times, are presented in Table 3.3.

Table 3.3. Start and end dates of recording for each child

Case-study child	Date of first recording (year-month)	Age at first recording (months;weeks)	Date of last recording	Age at last recording
Puhi	2010-11	0;4	2013-12	38;2
Jessica-Lee	2011-07	20;0	2013-04	41;0

After each video-recording session, observational notes were recorded on a data-collection sheet (Appendix 2) as soon as was practicable. The data-collection sheet made provision for the recording of contextual information, including: who was interacting with the child, which language was being used with whom, who else was present, and the child's focus.

3.5.2 Diary

Diary studies were common in classic LA studies, before high-quality recording equipment was readily available. Diary entries are suitable for noting prominent aspects of development (Fantini, 1985) but become less useful once a child's language production accelerates (Chang-Smith, 2010; Snyder, 2007).

In my study, I kept *ad hoc* diary records regarding interactions I observed and participated in with the two children and their *whānau*. Diary entries provided valuable supplementary data to my video data (see also 3.6.1.1.3). For

example, I made a note in the diary when I observed Puhi transitioning from a two- to a three-mora articulation of *ka kite* ‘see you’ (see 4.4.2 for explanation of ‘mora’). This proved useful when I analysed the data, and I was able to triangulate the diary entry with video footage of this transition.

3.5.3 Whānau-sourced data

Whānau-sourced data were gathered in four ways (see Table 3.1). First, in the course of my usual communication with *whānau*, I had informal conversations in which *whānau* members expressed thoughts and beliefs that were pertinent to the case-study children’s socialisation. I asked permission to use this information, and have cited it in my thesis as “unsolicited comment”. Second, I approached *whānau* members for their perceptions of cultural practices and values by holding informal interviews with them. For example, I asked three *whānau* members “What is *kapa haka*?” (see 4.2.1.3). This material is cited as “interview”. Third, as Puhi’s grandmother, I had access to *whānau* photographs and videos, and also social media accounts with digital photographs, comments, and videos. I asked permission to use specific items, and have cited these as “Facebook”. Fourth, I received permission to use one photograph of the local school *kapa haka*. I have cited this material as “whānau photo”. Video-footage collected by *whānau* members is included with other footage captured over the study.

3.6 Data analysis methods

I used manual methods of video analysis after encountering issues with various analysis software. The methods I used to interpret and transcribe child language production, and my approach to analysing the linguistic and language-socialisation data are presented in sub-sections 3.6.1 to 3.6.3, below.

3.6.1 Transcription and description methods

Transcription of video-recordings produced two corpora: Puhi's corpus and Jessica-Lee's corpus. Each corpus consisted of the child's productive language, and the language used by others with, and around the child.

3.6.1.1 Interpretation of children's language

Before transcription, it was important to consider how the children's early production could be interpreted. Word beginnings and endings were not always clearly definable or interpretable when, for example, a word-like sequence occurred in an utterance with sequences that were less word-like. Nevertheless, my data reflects the fact that interlocutors naturally interpreted the children's early production as they interacted with them (R. Brown, 1973; Ochs, 1988). It was these real-time interpretations that provided the clearest indication of whether an utterance or sequence should be classified as one or more words, even if it was phonologically distant from adult articulation.

There were three points in the research process at which early words were identified:

- a) during real-time interactions, by interlocutors;
- b) during transcription of video recordings, by the researcher; and
- c) during data-gathering, when reported by *whānau*, or when I, as researcher, recorded the occurrence as a diary entry.

Even with video-recordings and contextual notes, and even when the researcher is an insider, the possibility of ambiguity and misinterpretation remains. When I was unable to interpret a child's production, or when the context of a particular event was unclear, and by way of double-checking, I asked *whānau* members for their comment on my interpretation of data and my description of cultural and situational contexts.

As with all studies of the language of very young children, analysis is limited to what we think the children were saying, since ultimately we can never know what was going on inside their head, nor what their intentions were.

3.6.1.1.1 Real-time interpretation

Video recordings captured the children speaking spontaneously and responding to others, and sometimes imitating and/or repeating words used with and around them. Interlocutors were captured on video making natural, real-time interpretations of a child's speech; responding to a child's speech; and sometimes imitating or repeating a child's speech. The cameo below illustrates four instances of real-time interpretation of words produced by Puhi in an interaction involving Puhi, MH (the researcher), and Pāpā.

Cameo 3.2. Word interpretation in real-time

Puhi's age: 18;0

2:00		<i>Puhi is jumping and vocalising...</i>
		<i>Puhi</i> /bwɪ/ x 3
	1	<i>Pāpā</i> <u>Boo</u>
		<i>Puhi</i> /bwɪ:/
	1	<i>Pāpā</i> <u>Boo</u>
		<i>Puhi</i> /bwɪ:/
		<i>Puhi</i> /... bwɪ:/
		<i>MH</i> Nē? <Eh? [Is that so?]>
		<i>Puhi</i> /wɪ:/ /bwɪ:/ /wɪ:/ /bwɪ:/ /bwɪ:/
		<i>... Puhi points to a jigsaw puzzle sitting on a coffee table.</i>
	2	<i>Puhi</i> /...bwɪ: <u>pepepe</u> / /pepepe/
		<i>Puhi pulls the jigsaw board and it falls onto the floor, all the pieces fall out.</i>
	3	<i>MH</i> Auē <Oh dear>
3:00		<i>Puhi</i> [imitates] /ʌwe/ (auē) .../ʌwe/ [picks up board] /ʌwe/ (rep x3)
		<i>Puhi</i> /ʌwe/
	4	<i>Pāpā</i> Auē
		<i>Puhi</i> /auwe/
	4	<i>Pāpā</i> Auē
		<i>Puhi</i> /auwe:/
	4	<i>Pāpā</i> Auē
		<i>Puhi</i> /əwe:/
	4	<i>Pāpā</i> Auē.
		<i>Puhi</i> /ka:o/ <No>

Cameo 3.2 illustrates:

- (1) Interpretation indicated by imitation of Puhi's vocalisation /bwɿ:/ as boo: regardless of whether Pāpā's *boo*, imitating Puhi's /bwɿ:/ is an accurate reflection of what she intended to express, it is evident that Pāpā made this interpretation, and expressed it back to Puhi. Puhi's approximations were recorded initially as possible tokens of *boo*, and were later analysed together with further utterances that were also interpreted as *boo*, which led to my decision to include them as tokens;
- (2) Non-interpretation of /pepepe/; despite watching and listening repeatedly to the recording, and asking *whānau* members to also watch and listen I could find no phonological or visual cues as to Puhi's intended meaning. Therefore, this sequence was left uninterpreted.
- (3) Interpretation due to imitation /ʌwe/: since Puhi's utterance /ʌwe/ immediately followed my *auē* 'oh dear' in the recording, Puhi's utterance was interpreted on the basis of her repeating after me.
- (4) Interpretation indicated by imitation: since Pāpā repeated *auē* after Puhi's /ʌwe/, Puhi's utterance would have been interpreted on the basis that Pāpā repeated after her (had her utterance not already been interpreted as explained in (3) above).

3.6.1.1.2 Researcher interpretation

Close scrutiny of video for transcription provided an opportunity to confirm real-time interpretation or, in some cases, to identify real-time misinterpretation (see Cameo 3.3). In other cases, words that were missed, or not obviously responded to in real-time, were identified during transcription (see Cameo 3.4)

Cameo 3.3. Misinterpreted word is re-interpreted during transcription

Puhi's age: 22;0

7:23	<i>Puhi points and walks towards dinner tables...she reaches up to table</i> <i>Puhi</i> /hehu/ /hehu/ /tuy/ (<i>hari huri tau</i>) <happy birthday> <i>Aunt-Havaiki</i> [misinterprets] <i>Rare?</i> <lolly> <i>Aunt-Havaiki gives Puhi a lolly from the table.</i>
------	---

In real-time, Aunt-Havaiki misinterpreted Puhi's actions and utterances as a request for a *rare* 'lolly' (NZE 'sweet'), and gave her one. Analysis of several events in which Puhi produced approximations of *hari huri tau* 'happy birthday' led me to re-interpret her utterance in this event as another token of *hari huri tau* (see 6.5).

The following cameo illustrates a word /pana/ that was not obviously interpreted in real-time, but that was interpreted at transcription as *whana* ‘kick’, since the video footage showed Puhi kicking a toy as she spoke.

Cameo 3.4. Word interpretation during transcription

Puhi's age: 29;0

10:00	<i>Puhi walks towards camera and ramp, down ramp, onto lawn where the toy truck is still lying.</i> <i>Puhi /ui kakana taka/ (...taraka)<truck></i> <i>Puhi reaches truck and kicks it, saying:</i> <i>Puhi /pana/ (whana)<kick></i>
-------	---

Cameo 3.4 also illustrates that not all potential words were identified. Puhi may have intended to express an idea with the sequence /ui kakana/. However, although I looked and listened carefully for clues, any intention she may have had remains a mystery at the time of writing. This was not an isolated case. Indeed, while transcribing I was often in doubt about words and meanings, which I dealt with in the following ways: if I was unable to interpret the word, I did not record an interpretation; if I was not sure about the meaning of a word, I either marked my interpretation with a preceding question mark, (e.g., *?ka*) or recorded more than one possible interpretation, separated with a slash, (e.g., *[Eng]no/[Mao]mau*). If I was confident that I had identified a word as it was intended, it was transcribed unmarked.

3.6.1.1.3 Whānau report and researcher observation

The third word-interpretation context was by *whānau* report and/or researcher observation, both of which were recorded in a diary. Although such diary entries were sporadic, there were several entries in which I had noted words that Puhi was producing at the time (see 3.5.2). For example:

29/10/11 Puhi, Amo and MH sitting on step in sun today, Amo talking about her cell phone. MH said to Puhi, “Kei hea te waea o Amo” [Where is Amo’s phone]. Puhi responded by sitting down and pulling up the leg of her footless tights, saying /wɔ:/ with rise-fall intonation (a common VOC of hers) making the VOC bi-syllabic-like, and pointing at her leg. She apparently interpreted the word “waea” [phone] in the question as “waewae” [leg]. A question that has often been directed at her in recent

weeks has been “Kei hea tō/ō waewae” [Where are your legs?], [to which she has responded to as she did today].

Diary records proved useful for two reasons. First, a number of words were noted in the diary some time before they were captured in video recordings. Second, if there was doubt about a word at transcription, the diary could be cross-checked to see if it had been noted there. This illustrates the importance of mixed data-collection methods. Single-method data collection, even if systematic and frequent, is limited in how much it can capture.

3.6.1.2 Orthography

The accurate representation of a child's articulation by any graphic system of transcription is far from straightforward. This is true regardless of whether the transcription is of real-time speech or recorded speech. Snyder (2007) points out that using phonetic symbols captures the child's actual articulation, but using standard orthography “encodes the transcriber's best guesses as to the particular words (and meanings) that the child intended” (p. 53). I used both forms – recording my own “best guess” of the children's intended words and meanings, and also transcribing their speech using International Phonetic Alphabet (IPA) symbols. Mostly, I used IPA symbols for phonemic transcription, but I occasionally added phonetic detail when it seemed relevant. I transcribed the speech of non-infant participants using standard orthography except when further phonological detail was required, in which case I used IPA symbols.

3.6.1.3 Description

In addition to transcribing verbal interactions, my focus on language socialisation required that I write as rich a description as possible of the events and activities in which the children participated (see 3.6.3). This captured such non-verbal information as attention (see 2.5.5.1), multi-modal semiotic interaction (see 2.5.5.2), movement, and participatory arrangements (see 2.5.3); and contextual information on topics that arose in and about

environments in which interaction occurred. Cameo 3.5 illustrates this rich description.

Cameo 3.5. Rich description

Age: 19;2

30:40	<i>Puhi is sitting on Māmā's lap on a small chair at the table. Māmā is eating and Puhi is playing with a bottle of drink, which she has spilt on her tights. Koro-Henare sits down next to Māmā and Puhi, and leans over to kiss Puhi's cheek. Puhi does not visibly react. Puhi tugs at her wet tights and looks at Koro-Henare, who talks to her [inaudible]. Puhi has her left hand stretched out and it brushes across Koro-Henare's arm, he nudges at her hand. Māmā pulls off Puhi's tights which are wet from the spilt drink. This causes Puhi to slump down so that she is half sitting and half lying across Māmā's lap with her feet towards Koro-Henare.</i>
30:54	<i>Koro-Henare tickles Puhi 's toes. Māmā sits her upright and turns to talk [inaudible] to Aunt-NikiW who is in a doorway, behind and to the left of Māmā, some 4 metres away. This causes Puhi to be turned physically towards Koro-Henare. He tickles Puhi's toes again, then turns his gaze forward, away from Puhi.</i>
31:02 31.04	<i>Puhi looks at and points to her leg, and vocalises, looking intently at Koro-Henare [see Figure 3.1]. He turns to Puhi and raises and lowers his head (upwards nod) and does matahī [eyebrow flash] in acknowledgement of Puhi's vocalisation, and smiles. He turns his head away from Puhi and coughs. Puhi continues to watch his face intently.</i>

Figure 3.1. Puhi watches Koro-Henare's face intently

Figure 3.1 shows a screen-capture of minute 31.02, in which Puhi can be seen at centre-shot sitting on her mother's lap. Cameo 3.5 illustrates the rich

description of a 24 second interaction that occurred at a birthday party. Further description of the setting and of other participants is found elsewhere in the transcript and is not included here, for brevity.

3.6.2 Linguistic data analysis methods

I began analysis of the linguistic data by grouping it according to one-word, two-word and multi-word utterance types, using orthographic words as the basis for division. This method was satisfactory for defining two-word data sets for each of the two children (see Lines 1 and 2 in Table 3.4; see also 3.6.2). I later analysed these data sets to explore the two children's language choice, as presented in Chapter 5. Lines 3 and 4 in Table 3.4 show the two sets of data that were drawn from the language input to each of the children, that is, the language that the children heard spoken to and around them. Lines 5, 6 and 7 show three chronologically-ordered sets drawn from Puhi's productive language. The socialisation data set (all data gathered from Puhi) is shown in Table 3.4 in Line 8.

Table 3.4. Data sets

Data set	Start	Age	End	Age	Chapter
1. Two words (Jessica-Lee)	2011-08	20;1	2012-01	24;2	5
2. Two words (Puhi)	2012-06	20;0	2012-10	24;0	5
3. Input (Jessica-Lee)	2011-10 (Video 1)	23;0	2012-11 (Video 2)	36;0	5
4. Input (Puhi)	2011-09 (Video 1)	11;3	12-09 (Video 2)	23;1	5
5. First words (Puhi)	2011-08	10;0	2012-08	20;2	7
6. First combinations (Puhi)	2012-04	18;0	2012-10	24;0	7
7. First sentences (Puhi)	2012-08	22;0	2013-02	29;0	7
8. Socialisation (Puhi)	2010-11	0;6	2013-04	39;0	6

Table 3.4 shows the ages of the children at the start and end dates of the data set periods, and the chapter in which the analysis of the data set is presented. The periods from which the data sets are drawn are illustrated in Figure 3.2. Black lines indicate the data-collection timeline. Red lines indicate the period from which data sets (1) and (2) were taken. Data sets (3) and (4) are taken

from single videos (see Table 3.4) and are marked on the timeline in orange. A blue line indicates data set (5), a purple line indicates set (6), and a green line indicates set (7).

Figure 3.2. Timeline of periods selected for data analysis

3.6.3 Language socialisation data analysis methods

My overall focus in this study was Māori-language socialisation. Since it became clear that only one of the two case-study children was producing mostly te reo Māori, themes for my socialisation analysis were chosen from data gathered from that child, Puhi, over 39 months.

The large volume of the “socialisation data set” (see Table 3.4) made many different lines of enquiry possible. I narrowed my focus through an iterative process of identifying significant themes and refining these over time. Although comprehensive transcription was made of original video footage, choosing themes and analysing data necessitated close analysis of, for example prosodic, communicative and contextual features that exceeded the level of detail that was captured in those initial transcriptions. At the time of transcription, it was not possible to predict what level of detail would be required for particular speech events. Sometimes an interaction that had seemed peripheral became the focus of analysis. I therefore undertook an on-going process of reading and re-reading transcriptions looking for relevant events, and then re-watching the videos to observe dynamics; checking and re-checking transcripts against video-footage; adding to, amending, and refining description and transcription; and cross-checking with participants as themes emerged and as themes acquired increasing significance in my analysis. By this method I was also able to extract evidence of traditional and contemporary local theories of socialisation. This latter, combined with informal interview, proved valuable in substantiating the significance of my chosen themes.

My socialisation analysis followed Wortham’s (2005) model in which events and sub-events are micro-analysed for signs which, when plotted over time and across events, reveal a child’s progression or “trajectory of socialisation”. Further detail on my socialisation data-analysis methods can be found in

Chapter 6, where my analysis of the language socialisation data is also presented.

3.7 Chapter Summary

This chapter has justified my use of longitudinal, qualitative case-study methodology for my research, with its established use in child LA research, and its effectiveness in close, in-depth inquiry into natural human development in context. The chapter has described how the primary case-study child's impending birth provided impetus to begin the study, and how a second case-study child was recruited. It has also described the settings in which the children and their respective *whānau* lived. Five fundamental Kaupapa Māori principles have been defined in terms of how they guided my research approach and my conduct as a researcher. The chapter explains that the five principles form the base of the ethical framework of the study, and also describes further ethical considerations. Finally, the chapter has overviewed my data-collection methods and data-analysis methods, and directs the reader to the relevant data-analysis chapters, where further description of methodology can be found.

The following chapter overviews the current situation of te reo Māori in Aotearoa-NZ and gives a brief grammar sketch. Kaupapa Māori research concepts are introduced, as are some traditional Māori concepts that arise in my data analysis.

Chapter 4: Kaupapa Māori and te reo Māori

4.0 Introduction

This chapter begins by outlining aspects of Kaupapa Māori (KM) practice and theory, which help locate my study within this genre. It also elaborates the motivation for my study and my position within it. The chapter describes Māori practices and values as they relate to my data, and shows how they link to the guiding values explained in my methodological approach. It then briefly describes the current status of te reo Māori. Finally, the chapter provides a sketch of the grammar of te reo Māori to assist access to the language by non-Māori-speaking readers of this thesis.

There are a large number of Māori concepts in this chapter, and mostly, translations are provided in text. Where I have not provided translations I direct the reader to the glossary (p. 331).

4.1 Aspects of Kaupapa Māori: practice and theory

The term Kaupapa Māori has been translated as ‘Māori philosophy’ (G. H. Smith, 2003), and has been widely employed in education and health, and in research in these fields. It distinguishes practices and theories based in traditional Māori knowledge from practices based in other, particularly Western, traditions (Eketone, 2008). Within KM education and health initiatives, Māori values (e.g., *aroha* ‘love, sympathy, empathy’), concepts (e.g., *whānau* ‘extended family’), and practices (e.g., *pōhiri* ‘formal greeting ritual’) are regarded as normal and are promoted as such (Eketone, 2008).

Historically, KM education initiatives arose from Māori communities who were challenging existing ways of knowing, understanding, and doing in established

Anglo-colonial systems (L.T. Smith, 1999). Those systems had historically been destructive to, and excluding of, Māori people, language and knowledge (Simon & Smith, 2001). Two KM initiatives that are highly relevant to my study are Kōhanga Reo 'language nest(s)' and KM research methodologies.

The Kōhanga Reo movement began as an approach to Māori language and cultural revival through

embrac[ing] mokopuna and whanau in the principles of Maori child rearing practices, through the medium of te reo Maori me ona tikanga [sic]. (Te Kōhanga Reo, 2015)

A major aim of Kōhanga Reo is to "immerse" children in Māori language, cultural values, and ways of being and doing (Royal-Tangaere, 2012, Te Kōhanga Reo, 2015). In addition, there is an expectation that *whānau* are fully involved in their children's, and their own learning (Royal-Tangaere, 2012; Skerrett 2007).

The Kōhanga Reo movement relates to my study in three ways. First, my decade-long involvement in the movement as a mother and *kaiako* 'teacher' is part of the background to my study. Those experiences clarified for me the central role that children have in language revitalisation, which provided further motivation for my study. Second, my return to Kōhanga Reo, this time as a grandmother with my *mokopuna* Puhi, occurred as the study progressed. Third, the two Kōhanga Reo that Puhi attended became part of the foreground of the study as sites for her socialisation through and into te reo Māori, and Māori cultural values and communicative practices.

KM research methodologies aim for beneficial transformation for Māori, and make "political space to enable the legitimate study and continuance of Maori language, knowledge and culture" (G.H. Smith, 2003, p. 5-6). KM research is based on principles that resonate with participants, for example: it treats participants with respect and *aroha*; it is a political act; it contributes to profound academic debate, and it is transformative and empowering for Māori (Higgins,

2004; Skerrett, 2007; L.T. Smith, 1999; Walker, Eketone, & Gibbs, 2006). L.T. Smith (1999) points out that, in undertaking indigenous research, it is vital to acknowledge the history of research and its impact on those groups. KM, as an indigenous methodology, ideally is insider research that is conducted “from our own perspectives and for our own purposes” (p. 39). It involves engaging with ethical issues that may fall outside of an academic perspective (as well as within it), and it involves engaging with many questions that participants may ask. Some questions may be directly related to the research such as, “Whose interests does it serve?” and “How will its results be disseminated?” and there are other questions

that a researcher cannot prepare for, such as: Is her spirit clear? Does he have a good heart? ...Are they useful to us? Can they fix up our generator? (L.T. Smith, 1999, p. 10)

My study grew out of my involvement as an L2-learner of te reo Māori, and as a teacher, parent, and publisher in KM education. In accordance with KM education initiatives and KM research theory, I approach my study with a proactive stance on the validation and legitimization of KM values, practices and knowledges; promoting, revitalising, and maintaining te reo Māori (Te Kōhanga Reo, 1995, 2015; Bishop, 2008) and the advancement of Māori aspirations (Durie, 2004). In locating my research within a KM paradigm I explored the following questions:

- What can my study contribute to *te iwi Māori*?
- Will it serve the interests of Puhi Ihaia and Jessica-Lee and their *whānau*?
- Can it support “the continuance of Māori language, knowledge and culture”? (G.H. Smith, 2003, p. 5-6)
- Can I help “fix the generator”?

If it is a language “generator”, or a language “re-generator”, that needs to be fixed, then my study does have a contribution to make. If our aspiration to regenerate, re-vitalise, re-vernacularise and re-normalise our language and

culture is to be successful then the effort requires that many contribute in myriad ways. When I first tentatively described my study, an academic colleague commented that “we know all that already, don’t we?” It is true that many studies of child LA have been undertaken, and they have informed te reo Māori revitalisation efforts. But, those studies are not of our children learning our language. Our language, like every language, is unique. In order to make the best job on our language re-generator we must use the tools and materials that are best fit for purpose. This may mean adapting some from outside sources, but it also means standing back to look at what needs fixing, and using what we have ourselves, what we know, what we can find out about our own language to make the best fit-for-purpose tools and materials so that the language re-generator works best for our language and for us. One pathway that cannot be ignored is that which shows how our children learn te reo Māori naturally from birth. Careful, systematic observation and documentation of how this occurs is the aim of my study. This can contribute to the continuance of te reo Māori by informing pedagogues and *whānau* who are involved in the *kaupapa* of revitalisation and maintenance of te reo Māori language and culture, including the *whānau* and children who are participating in my study. My research framework is thus situated within KM theory and practice.

KM practices, values, and principles relate to my study in three respects. First, the major motivation behind conducting my study comes from my commitment to supporting the revitalisation of te reo Māori and the knowledge and practices it expresses. This on-going commitment is aligned with KM goals. Second, my study is embedded in the KM values and practices by which the two case-study *whānau* live. Third, these values guided my approach to gathering and analysing data, and to conducting the study in its entirety. What follows is a brief description of some KM values and practices that relate to KM research, and that arise in my thesis.

4.2 Aspects of *tikanga Māori*

Tikanga translates literally as ‘correctness/appropriateness’ and is defined as “the customary system of values and practices that have [sic] developed over time and are deeply embedded in the social context” (Te Aka). This section introduces and explains some aspects of *tikanga Māori* (see also 3.4). *Tikanga Māori* is rooted in traditional Māori ways of being and doing. *Tikanga* differs across *whānau*, *hapū* and *iwi*, and is fluid. “Insights from the past are utilised to solve problems of the present” (Mead, 2003, p. 16). Over time, *tikanga* incorporates new technologies, fashions and language, while indicating the conservative *modus operandi* of *whānau*, *hapū* and *iwi*. Values and beliefs that shape a speech community’s formal practices also shape the informal practices of that group (Bronfenbrenner, 1979; Royal-Tangaere, 2012). Children in Royal-Tangaere’s (2012) study encountered similar *tikanga* in rituals across different levels of formality. She proposed that simple versions of formal rituals have become acknowledged pedagogy and practice of *kōhanga reo* through which children are being socialised into the community’s informal and formal communicative cultural practices.

Tikanga that arise in my data, and are relevant to the analysis in Chapter 7, are *pōhiri* ‘formal greeting ritual’ and its component practices; *tītiro* ‘looking’ and its varieties; and relationship concepts, including kinship terms. My descriptions draw on anthropological, historical and KM literature, my own observations, and *whānau* sources.

4.2.1 *Pōhiri* ‘welcome’

Pōhiri (or *pōwhiri*, in some dialects) ‘welcome’ is an appropriate place to begin for those unfamiliar with *tikanga Māori*. A *pōhiri* is a complex, formal ceremony of encounter that involves a series of communicative practices in a routinised format. *Pōhiri* take place at *marae*, ‘traditional meeting places’ and other venues on important occasions (Mead, 2003). Practices that make up *pōhiri* include

karanga ‘calling’; *kōrero* ‘talk’; *waiata/haka/karakia* ‘song/performance/prayer’ and *hohou rongo* ‘[Lit.] joining/binding in peace’, a close-encounter greeting ritual. The practices of calling, talking, performing, prayer, and greeting are found in cultures around the world, but the patterns of those practices in *pōhiri* are what make them *tikanga Māori*.

Although not video-recorded in this study due to ethical considerations (e.g., consent), I observed one case-study *whānau* participating in several *pōhiri* over the data-collection period, and this was recorded in diary records. Some information on the use of the above practices in *pōhiri* is provided below (see also Mead, 2003, for further detail).

4.2.1.1 *Karanga* ‘calling’

Formal *karanga* is the ritual calling of *manuhiri* ‘visitors’ on to a *marae* and the first words heard in *pōhiri*. A function of *karanga* in *pōhiri* is to bring together hosts and visitors, deceased and living (Edwards, 2002).

4.2.1.2 *Kōrero* ‘talk’

Kōrero takes various formulaic, ritualised forms in *pōhiri* including *whaikōrero* ‘oratory’, *mihimihi* ‘greeting’, and *hohou rongo* (see below). Royal-Tangaere (2012) pinpoints three specific levels of greeting formality, namely: *whaikōrero* ‘oratory’; *mihi whakatau* ‘[formal/semi-formal] greeting’; and informal greetings. She notes that children are expected to use similar patterns “to greet family and friends at formal events, [and] in daily life” (p. 170). Important functions of formal and informal *kōrero* include: *whakawhanaungatanga* (see 3.4.5); discussion and debate; transmission of information; making requests; giving, accepting and refusing; making suggestions; and humour and entertainment.

4.2.1.3 *Waiata, haka* and *kapa haka*

Waiata translates as both ‘song’, and ‘to sing’. *Haka* refers to the full range of traditional and modern forms of Māori performing arts and the performance thereof, including *waiata* and *haka taparahi* ‘warfare posturing’ (Ka’ai-Mahuta,

2010). As such, *kapa haka* can be seen, like language, as a symbolic cultural tool (Vygotsky, 1934/1986), and as a recurrent communicative practice in Māori communities. The formal function of *waiata* and *haka* in *pōhiri* is to embellish a speech, and to show support for the orator. *Kapa haka* (Lit. ‘*haka* line’) refers both to a team of performing artists and to the art form of *haka*. *Waiata*, *haka* and *kapa haka* feature in the language-socialisation analysis presented in Chapter 7.

Participants in my study associated the following activities with *kapa haka*: songs with “actions that match words”; *pūkana*; swaying hips; feet keeping beat; discipline; fun; entertainment; and exercise. They described the functions of *kapa haka* as including: “bringing people together”; representing tribal affiliations; “supporting a speaker after a speech [i.e.,] *ka whakamana i te kaikorero*”; “paying tribute to loved ones”; “learning te reo Māori”; “portraying emotions” such as “*ihi, wehi, wana*” ‘thrills, awe, excitement’; and passing on language, *waiata* and stories.

[*Kapa haka*] is an expression of Māori culture...when a group of people come together and learn *waiata*, *mōteatea* and *haka* of our history, stories of our ancestors, the now, the past, the future. We stand proud for our *iwi*, *hapu*, *whānau*...it’s a way of showing that we *tautoko* them, support them and are proud of them, *hei tautoko i a rātou*.
(Te Puawaitanga Winterburn, interview, 4 December 2014)

Cultural values and practices are expressed in song and performance and through associated facial expression, gesture, posture, movement, prosody (pitch, loudness, tempo and rhythm), and language. In this thesis, reference to *kapa haka* can be assumed to include all the elements described above.

It is well-documented that song and rhythm have a special role in promoting language learning (Schön et al., 2008). Traditional Māori pedagogy has long utilised the mnemonic qualities of rote and rhythm to capture and pass on valued historical knowledge and to maintain *whakapapa* connections (Ka'ai-Mahuta, 2010; Macfarlane, Glynn, Cavanagh, & Bateman, 2007; Ngata, 1959).

4.2.1.4 Hohou rongo ‘joining in peace’

Hohou rongo ‘joining in peace’ is the greeting ritual that completes the formalities of *pōhiri* when host and visiting groups come into physical contact. The visiting party and host party each form a line. As the visitors’ line files along the hosts’ line, individuals greet each other in a series of dyadic interactions with eye-contact, close face-to-face proximity, touch (*hongī* ‘pressing noses’ and/or kissing, shaking hands and hugging), and verbal greetings (Higgins & Moorfield, 2004; Mead, 2003). Interactions of the type described here are also echoed in informal greetings in my data (see 6.3).

4.2.1.5 Manaakitanga ‘caring and hospitality’

Showing *manaakitanga* (see also 3.4.4) involves, for example, a warm welcome, ample food, comfort, warmth, shelter, and entertainment, all given within the parameters of *tikanga*, in order that recipients feel ‘at home’. As such it is a critical component of *pōhiri* and also of child-rearing.

4.2.2 Titiro, whakarongo ‘look and listen’

In traditional *tikanga Māori*, the spoken word was highly valued, and its imprudent use frowned upon and discouraged. The importance of looking and listening before speaking was therefore promoted (Metge, 1983; McCarthy & Haig, 1997; Hunia, 2014). Metge (1983) related her Māori informants’ belief that “[l]earning to look... and to listen are fundamental lessons that should be mastered before children learn to rely on verbalization” (p. 14). McCarthy and Haig (1997) also reported such a belief: “When the nannies tell us to whakarongo and titiro, that’s what one should be doing. We need to look and listen, that’s the way we learn” (no pagination).

Purposeful looking and listening were promoted by proverb and practice, and by verbal and non-verbal directive. In Figure 4.1, an example of the latter was demonstrated by my father, who portrayed the silent directives he was given as a child while hunting with his uncle.

Figure 4.1. *Mahia wēnei* ‘use these’

This, and verbal directives such as *mahia ngā karu* and the English equivalent, *use your eyes* have been used by at least four generations of Puhī’s paternal *whānau*. I make use of this concept when referring to two ways that one participant *whānau* used and promoted *titiro* ‘looking’ as: (a) ‘eye talk’: a range of communicative face expressions that include glancing, *matahī* ‘eyebrow-flash’, “the evils” and *pūkana* ‘wide eyes’; and (b) *mataara* ‘alert watchfulness’, and awareness of people (see 3.4.1). Types of *titiro* are explained below.

4.2.2.1 Glance

A glance is a brief look at, for example, the subject of a message. It is a mechanism for coordinating joint attention just as pointing, gesture, or verbal direction is used to direct attention to an entity (Bruner, 1983; Meltzoff, 2009; Tomasello, 1988). Eyes may be widened as in *pūkana* (see 4.2.2.4) when directing the attention of an addressee to that entity, and the glance may be accompanied by an incline of the head, or by some other gesture.

4.2.2.2 *Matahī* ‘eyebrow flash’

Matahī involves raising and lowering the eyebrows. It may also involve eye contact with the addressee(s), an up-down nod of the head, and pursing the lips in an upward direction. The function of *matahī* is to communicate a message, for example: greeting; acknowledging someone’s presence; reinforcement of one’s own utterance; or acceptance or acknowledgement of another’s utterance.

4.2.2.3 “Evils”

In the context of Puhī’s *whānau* and community, “the evils” is a commonplace term, not to be confused with the term “evil eye” used in other cultures. In this context, the “evils” or “dirties” is an “intent look, or glare” (Amokura Rangiheuea, interview, 2014).

4.2.2.4 *Pūkana* ‘wide eyes’

Pūkana is a communicative gesture expressed with widened eyes. As a traditional Māori cultural practice, *pūkana* surprised and disturbed early European commentators to the extent that much was made of it in their written works (Earle, 1827; Chapman & Rock, 1888; Cowan, 1911). One text from the 1870s described men “... rolling their eyes till only the whites were visible, set in a petrifying glare—the grimace of the pukana [sic]” and of women with “dark eyes blazing” (Cowan, 1911, p.215). This communicative use of eye expression remains very much in evidence in Māori communities, notably in Māori performing arts, or *kapa haka*, and also in everyday communication.

In *kapa haka* performance, *pūkana* involves opening the eyes wide so that the whites of the eyes are visible; women may draw the corners of the mouth down when performing *pūkana* and men may *whētero* ‘protrude the tongue’. Variations include rolling the eyes or moving them side-to-side, or fixing the gaze, and there are specific terms for each, for example, *putē* ‘wide eyes with a fixed gaze’ (Timoti Karetu, personal communication, July 2014).

4.2.2.5 *Mataara* ‘alert watchfulness’

Mataara translates literally as ‘alert eyes’ and is often used in the phrase *kia mataara* ‘be alert’ (Te Aka). In my analysis I use the term to describe a practice through and into which children are socialised to be alert, watchful, and aware of others, in order to learn, to notice and to show responsibility for those around them, and to be aware of and responsible for themselves with regards to others

(see 6.4.2, 6.3.4). *Mataara* is also a KM principle that guides this study (see 3.4.1).

4.2.3 Māori relationship concepts

As in all languages, relationship concepts in te reo Māori encapsulate roles, responsibilities and kinship connections and, where such a concept is missing in the language of translation, that concept may not easily be explained. A notion that is seldom expressed in dictionary translations of traditional Māori kinship terms is a sense of intra-connection and collective responsibility within *whānau*.

A Maori [sic] view of development would encompass self always in relation to others; peers, whanau, hapu, iwi [sic] as well as their physical and spiritual environment. It would focus on the developing individual as part of a social group, and the reciprocity of obligations and commitments the individual has to others of the group. (Hohepa & McNaughton, 1993, p. 41)

In addition, while Māori relationship concepts imply inter-connection between living people, they also imply inter-connection with the deceased, and the yet-to-be-born (see 4.2.3.1) and with all elements in the environment, through *whakapapa*.

4.2.3.1 Whakapapa ‘genealogy’

Whakapapa is a fundamental KM concept (Mead, 2003). It translates literally as ‘layering’, giving an image of layers of connection between people. Its closest English equivalent concept is ‘genealogy’. Knowing one’s *whakapapa* and being able to link to others through *whakapapa* is considered essential in Māori culture. A participant in my study, Kui, told me that it was important that children learn early in life how they are connected to each other (Mereana Winterburn, unsolicited, 2013), and that children should be reminded regularly of *whakapapa* connections by, for example, emphasising appropriate kinship terms. Generational differences in large *whānau* are not always attributable to age, and knowledge of *whakapapa* is necessary for a full understanding of

kinship connections between people. Kui told of how her young nieces and nephews, similar in age to her grandchildren, occasionally called her *Kui* ‘grandmother’ to which she would respond with *Ehara au i tō kuia, ko au tō kōkā* ‘I’m not your grandmother, I’m your aunt’. This example also illustrates that, for any given individual in my study, “similar-age peers” could include relations from different generations (see 4.2.3.3).

Knowing *whakapapa* is also important because previous generations are known to influence those still living. *Whakapapa* is a reminder of reciprocal responsibilities between people.

Even in death the individual is still very much part of the social group, and has roles and obligations to the living, the still to be born, and the dying. (Hohepa & McNaughton, 1993, p. 41)

Kaumātua have living memories of the practices of previous generations and they have a responsibility to pass such practices on to younger and future generations. Therefore, children’s socialisation may be understood to be influenced by those who have passed away, by the living, and by those yet to be born.

4.2.3.2 *Whānau, hapū and iwi*

De Houwer (2009) identified the “family” as the “primary socialization agent for the development of BFLA” (p. 7-8). While she acknowledged that family structures vary, the term brings to mind particular kinship structures for particular groups. For example, the “one parent, one language” model of raising bilingual children (de Houwer, 2009) assumes that there are two parents who are the primary influences on a bilingual infant.

Traditionally, Māori concepts of the kinship units of *hapū* ‘sub-tribe’ and *iwi* ‘tribe’ were so far removed from the Anglo-colonial concept of “family” as to move Williams (1917) to note in his dictionary that the translation of ‘family’ for *whānau* was “modern usage”. There are no fixed boundaries to how *whānau*

may be defined and the term now has different meanings in different situations, and to different people. For example, it may be used to refer to a grouping of relatives that includes, a man and women, their adult children, grandchildren, and great-grandchildren, but many groupings are possible. It is therefore often translated as ‘extended family’ (OED.com) since it differs again from the common usage of the English word *family*.

Whānau groups are sometimes described in terms of multiple generations, as above, but generation gaps do not exist when all ages are represented, as is often the case at *whānau* occasions I attend. In these circumstances, and in my study, “similar-age peers” include nephews and nieces, siblings and cousins, and aunts and uncles. In addition some same-generation relatives (e.g., cousins) may be separated in age by more than twenty years. *Whānau* groups therefore fit a variety of kinship structures (e.g., a one-home two-parent plus children family), but may also include non-kinship structures (e.g., Kōhanga Reo) or a mixture of these and/or other structures. I make use of the term *whānau* to describe the group of people with whom the children in my study interact with most, and who are therefore their “primary socialisation agents”.

4.2.3.3 *Tuakana-teina* and *tuahine-tungāne*

Mā te tuakana e tiaki, mā te teina e whakarongo
‘It is for the *tuakana* to nurture and for the *teina* to listen’
(Maru Karatea-Goddard quotes her *kaumātua* ‘elder’, interview,
September 2014)

Tuakana and *teina* are traditional Māori kinship terms, relationships and practices. As there is no equivalent in English, the concepts translate somewhat clumsily. *Tuakana* is defined as ‘elder sister (of a female); elder brother (of a male); cousin (of the same gender from a more senior branch of the family); senior relative’. *Teina* is defined as ‘younger sister (of a female); younger brother (of a male); cousin (of the same gender from a junior line); junior relative’ (Te Aka).

The terms *teina* and *tuakana* invoke a set of roles and responsibilities. There is an onus of responsibility on *tuākana*, for example, to nourish and nurture younger children; and to facilitate the gradual acceptance of responsibilities by *tēina* over time. Children learn to take on the role of *tuakana* by observing others in that role, by observing others being guided, and through guided participation (see 4.2.3.3). My father related that his elders would often say, for example: *whakarongo ki tō tuakana* 'listen to your *tuakana*' and *ko koe te tuakana* 'you are the *tuakana*', (Leon Hunia, personal communication, January 2015), thereby promoting the roles and responsibilities encapsulated in the term. *Teina* and *tuakana* roles are fluid in that children may move between roles, depending on a given situation and its participants. Thus, socialisation involves negotiating the roles, and the rights and responsibilities within those relationships.

Referring to the traditional use of the terms *tuakana-teina* means also acknowledging the terms *tuahine* 'female cousin/sister of a male' and *tungāne* 'male cousin/brother of a female'. The obvious distinction in this relationship is gender, rather than birth order or seniority. *Tuahine*, particularly older sisters and female cousins, have an onus of care and decision-making regarding their *tungāne* (Leon Hunia, interview, January 2015). *Teina-tuakana* and *tuahine-tungāne* 'sister-brother' relationships are intertwined with other kin relationships including *matua-tamaiti* 'parent-child', and *kaumātua-mokopuna* 'grandparent-grandchild', and are situated firmly within the *whānau* as a collective whole.

In recent times the *tuakana-teina* concept has been extended beyond *whakapapa* and into education contexts, where it has been defined and described variously, for example, as "tutor-tutee..." (Glynn et al., 1998, pp. 117-118); "older students...younger students" (Ellis & Wainui, 2005, p. 32), "mentorship" (Macfarlane et al., 2007); or expert-novice roles such as those in

the pedagogical theories of Vygotsky, Bruner and Rogoff (Royal-Tangaere, 2012).

In the context of the *whānau* in this study, *teina-tuakana* retains its traditional kinship meaning, with its reciprocal roles of responsibility, care, respect, and emotional bonds. I note that although in most literature the relationship is expressed in the order of oldest to youngest, that is *tuakana-teina*, in my thesis I refer to the relationship in order of the case-study children's development, that is, *teina-tuakana*.

4.2.3.4 Kinship terms

Kinship terms are culturally and linguistically particular in form, and also in their communicative functions (Tardif et al., 2008). There is a set of eleven kinship terms (KIN) in high-frequency use in my data. This set consists of seven Māori terms: *Nēni* and *Kui* (grandmother, grandaunt, female elder), *Koro* (grandfather, granduncle, male elder), *Pāpā* (father, uncle, male of father's generation, also grandfather, granduncle, male elder), *Māmā* (Mum, mother), *Whaea* and *Kōkā* (aunt, female, most often of mother's generation), and *Pēpē/Pēpi* (Baby), plus three English terms, *Uncle* (male of father's generation), *Aunty* (female of mother's generation), and *Cousin* (and its variations *Cuz* and *Cuzzie*). These terms are used by adults and children in my data, and may occur both with personal names and on their own. Other kinship terms are also used, but with lower frequency, and are described in context as they arise.

In my thesis, kinship terms, names and participants' ages are coded so that readers can keep track of *whānau* members in a meaningful way. Tables 4.1 and 4.2 below list the codes used to identify participants in the study, and their relationships to the case-study children. Participants' ages are indicated as follows:

- Up to 4 years, ages are shown as months;weeks e.g., 24;2 = 24 months, two weeks;

- From 4 to 19 years, ages are shown as years, e.g., 17 = seventeen years;
- From 20 years, ages are shown to the lower decade in whole numbers, e.g., 40 = between the ages of 40 and 49 years.

I have chosen terms that describe participants' relationships to the case-study children, and that pertain to roles that are relevant to my analysis of the children's socialisation. Participants who wished to remain anonymous are coded as "un-named" (U).

Table 4.1. Jessica-Lee's whānau

Relationship to Jessica-Lee and names	Codes
Mother	Māmari
Father	Pāpā-M
Tungāne (brother of a female)	Te Rangihuia Havelund
Caregiver	Whaea-Jess

Table 4.2. Puhi's whānau

Relationship to Puhi and names	Codes
Mother	Māmā
Father	Pāpā
Maraea Hunia: the researcher and paternal grandmother	MH/Nēni
Maternal grandmother	Kui
Koro (Grandfather, male elder)	Koro-Leon Koro-Jim Koro-Henare Koro-U
Kui/Nēni (Grandmother, female elder)	Nēni-NikiP Kui-Kata
Tuakana (older female sister/cousin)	G-Waiaio G-Ariana
Tungāne (male cousin)	B-Paenui B-Jack B-Toihau
Aunts: includes parents' sisters and female cousins, and female spouses of parents' male cousins)	Aunt-Amo Aunt-NikiW Aunt-TeAniwa Aunt-Rotana Aunt-Tirangi Aunt-TeAtawhai Aunt-TeOria Aunt-Havaiki
Uncles: includes parents' brothers and male cousins, and spouses of parents' female cousins).	Unc-Awa Unc-TeAta Unc-Dela
Whaea: general term of respect for adult female	Whaea-Mariana Whaea-Arapera Whaea-Ngahuia

4.2.4 *Te wairua o te kupu*

This section centres on describing the concept *te wairua o te kupu* ‘the spirit of the word’. It also presents Māori perspectives on te reo Māori and child language-learning. *Te wairua o te kupu* is a Māori perspective on language. Noted *kaumātua* ‘elder’, Professor Wharehuia Milroy explained this concept at a Waitangi Tribunal (2012) hearing¹ in regards to intergenerational transmission of language and culture. He related a story about when, as a young child, he fell out of a cherry tree. Crying on the ground, he was approached by his *koro* ‘grandfather/great-uncle’, who had been watching nearby. The child looked up at the old man, hoping for sympathy, but his *koro* leant over him (here demonstrated by Milroy) and said, “*Ō, kua tae koe ki Pārengarenga rā ano.*”^{1(b)} ‘Oh, you were about to arrive way over at Pārengarenga [where those who have passed on traverse^{1(e)}].’ Confused, the child returned to his mother, related what had passed, and said “Koro didn’t feel sorry for me, *Māmā*”^{1(c)}. His mother explained what the old man had said: “It is a cautionary word. Do you know where Pārengarenga is? It is a place far away from here. It is not a place where you want to go.”^{1(d)}

Milroy explained that this highly metaphoric language was just one form that was addressed to children. His mother supported his learning and provided another form of language by explaining the old man’s statement, and yet other “parents and grandparents” said things like “*Kia tūpato, kei taka* ‘be careful, lest you fall’^{1(d)}” when observing him climbing a tree, or teased him by saying “Climb up again^{1(d)}” after a fall (Waitangi Tribunal, 2012). Rich and varied language practices required deep thought from the child, critical comparison of what was said and what was meant, support from many *whānau* members, and gradual clarity that came through being steeped in cultural history, values and concepts.

¹ Information is drawn from 5 sources: (a) researcher’s notes taken at hearing; (b) audio recording of Milroy’s submission in te reo Māori; (c) official, unchecked transcript of English interpretation by L. Blake, (d) official transcript in Māori and official translation into English by L. Blake and P. Papa; and (e) my own translation

Milroy recalled having many “parents”, and older siblings who all contributed to his care. His story reflects a TM perspective that children and their learning are embedded in their *whānau* and communities, and everyone contributes to, and has responsibility for, children’s learning (see 4.2.3).

...it wasn’t given to only one parent to look after a child but it was up to the community... every parent had different language to feed to the child. There’s an ethos and a spirit within words, and within some words there is a deep, significant message... that was my world when I was a child (Waitangi Tribunal, 2012) ^{1(d)}.

The above story is pertinent to my study in the insight it gives to kaupapa Māori theories of the role of language in child-rearing and practices, and also because Milroy’s childhood experience is echoed in stories that my father, who grew up at around the same time, has related to me about his own upbringing. My father’s childhood experiences relate to my case-study grandchild’s life both directly, since he was involved in her life, and indirectly, since he was involved in the language socialisation of two further generations of *whānau* (my generation and my children’s generation) who are primary socialisation agents (de Houwer, 2009) in her life.

Milroy and my father grew up in worlds in which *te reo Māori* and *te wairua o te kupu* were widely used and children became L1-Māori speakers as a matter of course. The aim of the following section is to give the reader an idea of the place of *te reo Māori* in the world in which the children in my study are growing up.

4.3 The current status of *te reo Māori*

Te reo Māori, is one of three official languages in Aotearoa-NZ: the other two official languages are NZ sign language, which does not feature in my study, and English, first brought to Aotearoa-NZ by English whalers, and established here by the influx of English settlers that followed. *Te reo Māori* was severely impacted on by the English colonisation process (Ahu, 2012; Higgins, 2015;

L.T. Smith, 1999; Te Puni Kōkiri, 2002; 2011; Waitangi Tribunal, 2011; Walker, Eketone, & Gibbs, 2006) and particularly by English-medium education that was enforced from the latter quarter of the 19th Century (Simon, 1998; Simon & Smith, 2001; Ka'ai-Mahuta, 2011).

There is no dispute that English and Māori have different political statuses and different frequency of use in Aotearoa-NZ today. English is a robust global language, and the majority language. Te reo Māori is the minority indigenous heritage language. The latest available national statistics from the 2013 Census indicate that 125,352 Māori adults out of a total NZ population of 4,242,000, and a total Māori population of 688,700, reported that they could hold a conversation about a lot of everyday things in te reo Māori. This is a decline across the Māori population of 4.8% since 2006 (Statistics New Zealand, 2013b, p. 11). There is evidence that, despite some successes in stemming the tide, notably the Kōhanga Reo movement (see above) and Te Whakatipuranga Rua Mano in Ōtaki (see 3.2.2.1), the decline in use of te reo Māori across Aotearoa-NZ has been continual for at least two hundred years (W. Bauer, 2008; Benton, 1996).

There are currently no statistics regarding numbers of children growing up as L1 or BFLA speakers of te reo Māori, which is an important statistic in determining the realities of te reo Māori transmission and revitalisation. However, *Te Kupenga*, a survey conducted by Statistics New Zealand in 2013, showed that approximately 38,000 adults reported that they learnt te reo Māori as a first language and still understood it. The “strong relationship” that this indicates between L1-Māori acquisition and continued use of te reo Māori in adulthood provides further motivation to unearth critical factors in L1-Māori socialisation. Of those adults who spoke te reo Māori “well²” or “very well³” the largest group are over 55 years old (Statistics New Zealand, 2014).

² Well: can talk about domestic and community topics. Occasional grammatical mistakes.

³ Very well: can talk naturally and confidently about any domestic and community topic. Few grammatical mistakes (Te Puni Kōkiri).

Te Kupenga also showed that strong links with *whānau* and community, and participating in Māori cultural activities were also important. In exploring the language socialisation of the case-study children in my study, I analyse their language environments and two-word language production in Chapter 5. The chapter addresses the first research question by determining the language use of each *whānau* member, and by determining each child's principal productive-language choice.

4.4 Aspects of the grammar of te reo Māori

This section provides a short sketch of the grammar of te reo Māori, a largely isolating language from the Polynesian language family. This sketch is primarily aimed at the reader who is unfamiliar with this language. Unless otherwise stated, the language I refer to in this section is te reo Māori. The description encompasses only those matters relevant to the language used by my case-study children, since the aim is to describe the adult norms against which I compare the case-study children's language production. I draw on available linguistic descriptions, in particular, the comprehensive grammars by W. Bauer (1993, 1997), with supplementary insights from Biggs (1969), Harlow (2001), and P.W. Hohepa (1967). However, those grammars describe varieties of te reo Māori spoken by L1-Māori speakers born in the early 20th Century. My own data includes the language of L2-adults, of younger L1-adult speakers of modern Māori, and of children. The language used by and between these groups is likely to have specific features which differ from the descriptions in those grammars.

4.4.1 Phonemes

In my thesis, analysis of the case-study children's phonological acquisition of te reo Māori is minimal, and therefore the description here is largely restricted to a phonemic inventory.

The ten consonants of te reo Māori are:

/p/ /t/ /k/ /m/ /n/ /ŋ/ /w/ /h/ /r/ /f/

Traditionally the stops /p/, /t/, and /k/ are unaspirated, although aspiration is now common (Maclagan & King, 2007). In my data the nasals /m/ and /n/, the approximant /w/ and the fricatives /f/ and /h/ are much the same as in NZ-English (NZE). The velar nasal /ŋ/ is the same as that found in the NZE articulation of words such as ‘singer’, but in te reo Māori /ŋ/ also occurs in word-initial position, whereas in English it does not. The Māori ‘r’ is an alveolar tap /r/.

Some regional and tribal variation in articulation of some consonants exists, and some have one or more allophones (Keegan et al., 2009), but this has no bearing on my thesis.

The vowels of te reo Māori are:

/i/ /e/ /a/ /ɔ/ /u/

There is debate as to whether these vowels should be analysed as five vowel phonemes or ten (five short vowels plus five long vowels), and further debate as to whether the difference between short and long vowels should be denoted orthographically by the use of two vowels as in *paa* or by using a macron, as in *pā*. In text I use the orthographical conventions endorsed by Te Taura Whiri i te Reo Māori (2012), which include the use of macrons. In the IPA transcription used in this thesis, short vowels are denoted by /a/, /e/, /i/, /ɔ/, /u/ and long vowels are denoted with a triangular colon following the vowel, e.g., /a:/. Further information on the articulation of Māori vowels can be found in, for example, Keegan et al., (2009).

4.4.2 Syllables and moras

Syllables and moras are phonological word divisions. A mora, e.g., *te*, has the form (C)V⁴, where V is a short vowel, whereas a syllable has the form

⁴ Brackets denote optional phoneme therein

(C)V(V)(V), e.g., *pai*, *tōu*, *āe*, *ō*. Both terms are required for description in te reo Māori, since stress patterns are explained in terms of syllables, whereas reduplication and phrase-length are explained in terms of moras.

Reduplication of moras is common and has a variety of functions. The most common reduplicated forms in my data have two-mora bases. The meanings of reduplicated forms are not predictable, for example: *peke* ‘jump’ / *pekepeke* ‘jump repeatedly’; *kani* ‘dance’ (rare) / *kanikani* ‘dance’; *kata* ‘laugh’ / *katakata* ‘smile’.

4.4.3 Word classes

The content words of te reo Māori will be referred to generally as “bases”, rather than as distinct classes of, for example, nouns and verbs. This is because almost all content words have the potential to be used both nominally and verbally, as well as attributively, as shown in (4401) to (4403). Further, there is no definitive morphological distinction between verbal and nominal forms (L. Bauer & W. Bauer, 2012). Instead, verbal and nominal functions are differentiated through syntax. The distinction between the nominal/verbal function of a base is usually inferred from its preceding marker, e.g., a determiner (see 4.4.5.4.1) or TAM (see 4.4.5.3.1); or by its position as a modifier. For example:

Kai as noun:

(4401)⁵ he reka te kai
 DET sweet DET food
 ‘the food is sweet’

Kai as verb:

(4402) kei te kai a Huia
 TAM eat PERS (NAME)
 ‘Huia is eating’

⁵ Examples not attributed to a source are my own.

Kai as modifier:

(4403) he whare kai
 DET building food
 'a dining hall'

In context, it is usually possible to determine the function of a particular base.

4.4.3.1 Noun classes

There are three classes of noun: common nouns; personal nouns; and local nouns. The three classes are distinguished by their behaviour with determiners, as follows.

4.4.3.1.1 Common nouns

Common nouns always need a preceding determiner except in lists, but never take the personal article (PERS) *a*, unless personification occurs, as in (4405).

(4404) Hoatu te āporo ki **te** hōiho
 give DET apple to **DET** horse
 'Give the apple to the horse'

(4405) Hoatu te āporo ki **a** Hoiho
 give DET apple to **PERS** NAME
 'Give the apple to Horse'

4.4.3.1.2 Personal nouns

Personal nouns are preceded by the personal article, *a*, or by $\emptyset$ (no determiner). They do not require a determiner when they follow a preposition ending in a vowel other than *-i*, as illustrated in (4406). In all other environments, they require *a* (see both instances in (4407)).

(4406) Nā Puhi te pōro i whiu
 PREP NAME det ball PREP throw
 'Puhi threw the ball'

(4407) kei te kōrero a Tahi ki a Amo
 TAM talk PERS NAME to PERS NAME
 'Tahi is talking to Amo'

4.4.3.1.3 Local nouns

Local nouns are words that express position, and include place names. Local nouns and local pronouns usually take no determiner (4409), but take the article *a* when in subject position (4410).

(4408) kei roto rātou
 situated inside 3PL
 'they are inside'

(4409) Kei te tū tonu a Tarawera Maunga
 TAM stand continue PERS Pūtauaki Mountain
 'Tarawera Mountain is still standing'

Other than place names, the main local nouns that appear in my data are:

kōnei 'here (PROX1)'
 konā 'there (PROX2)'
 korā 'there (DIST)'
 reira 'there (previously mentioned)'
 hea 'where?'
 runga 'top; upper/higher region'
 raro 'bottom; lower/under region'
 roto 'inside'
 waho 'outside'
 tātahi 'sea-side'

4.4.3.1.4 Personal pronouns

The personal pronouns distinguish between singular, dual and plural (three or more), and between inclusive and exclusive of the addressee. All pronouns are gender inclusive. The resulting set of (independent) pronouns is:

SG		DU		PL	
au	1SG	tāua	1DUINCL	tātou	1PLINCL
		māua	1DUEXCL	mātou	1PLEXCL
koe	2SG	kōrua	2DU	koutou	2PL
ia	3SG	rāua	3DU	rātou	3PL

In addition, there are three singular pronouns that only occur bound to an A/O morph in possessive constructions, where they are obligatory (see also 4.4.6.2). They are:

-ku 1SG
-u 2SG
-na 3SG

Personal pronouns usually take $\emptyset$, but require *a* after prepositions ending in *-i*. In (4408), the subject *ia* takes $\emptyset$, but *rāua* takes *a* because it follows the preposition *i*.

(4410) kua kite **ia** i a **rāua**
TAM see $\emptyset$ **3SG** PREP PERS **3DU**
'she has seen them'

4.4.3.2 Verb classes

For this study, the principal importance of verb classes lies in the associated sentence structures, which are discussed in 4.4.7.3. For more information on verbs, see W. Bauer (1997) or Harlow (2001).

4.4.4 Phrases

According to Biggs (1969), the phrase, rather than the word, is the natural grammatical unit of te reo Māori and its natural pause unit in speech. The phrase is the basic building block of all Māori sentences, and the basic word order of te reo Māori is therefore realised as VSO phrase order (Harlow, 2007). There are three basic phrase structures: verbal phrases (referred to as verb constituents: see 4.4.4.3); noun phrases; and preposition phrases.

4.4.4.1 Phrase length

Traditionally, the length of a phrase in te reo Māori is at least tri-moraic (see 4.2.2). Most phrases meet the requirement (i.e., have three or more moras) because of the presence of phrasal particles, but there are a few phrases that

require an addition in order to meet the tri-moraic rule (J. Brown, 2015). This includes some imperatives, see 4.4.8.3.

4.4.4.2 Phrase structure

The basic structure of the phrase is

particle + base (+ modifier(s))

Phrasal particles include TAMs in VCs (see 4.4.5.3.1), determiners in NPs (see 4.4.4.4), and prepositions in PPs (see 4.4.5.5.). In the lists below, I do not provide glosses, since many are multi-functional, and heavily context-dependent. In subsequent chapters, contextually-appropriate interpretations are supplied.

Modifiers provide more information about the base. Modifiers take different forms, including single words (4411) and phrases (4412). There is a small group of single-word modifiers that can occur either before or after a base (e.g., *kore* ‘without/lacking’), and another small group of single-word modifiers that can occur only before a base (e.g., *tino* ‘very’). In general, most modifiers occur only after a base, as illustrated in bold type in (4411) to (4413).

Single-word modifier:

- (4411) ēnei pūngāwerewere **nui**
DET spider **big**
‘these **big** spiders’

Phrase modifier:

- (4412) he kihi **mā Nēni?**
DET kiss **for KIN**
‘[is there] a kiss **for Nēni?**’

Lexical bases can modify verbs, but the most frequent verb modifiers in my data are the directional particles:

mai (toward speaker)
atu (away from speaker)
ake (upwards)

iho (downwards)

Mai and *atu* are much higher in frequency than *iho* and *ake* in adult speech.

(4413) kei te rere **atu** tāua ki Ōtautahi
TAM fly **away** 1DUINCL to PLACE
'we are flying away to Ōtautahi'

4.4.4.3 Verb constituents

A phrase with a base that acts as a verb is referred to as a verb constituent (VC). A verb constituent has this form:

TAM (+ modifier) + verb (+ modifier(s))

The basic VC is illustrated in (4414); and (4413) above illustrates a VC with modifier *atu*.

TAM + V:

(4414) ka kaukau
TAM bathe
'will bathe'

4.4.4.3.1 TAMS

Tense-Aspect-Mood markers (TAMs) are particles which introduce VCs. There are good arguments for classifying TAMs in independent sentences as particles and not as prefixes or clitics, including the fact that certain modifiers occur between the TAM particles and the base (see further, W. Bauer, 1993, p. 506).

In general, a base is marked as acting as a verb by its preceding TAM. Most TAMs are single words e.g., *ka*, *kua*, but some are written as two words, e.g., *kei te*, *i te*, and the discontinuous TAM *e...ana*. In these cases orthographical representation of those structures differs from their morphological or syntactic status. Despite the orthographic words, these are considered to be single lexemes.

There are ten main TAMs, as follows:

ka, *kua*, *i*, *e*, *e...ana*, *kei te*, *i te*, *me*, *kia*, *kei*

I also consider *ki te* as a TAM, although I note there is some debate as to whether this is the most appropriate description of its function (W. Bauer 1997; Harlow, 2007).

Most of the TAMs encode relative, rather than absolute tense (see Bauer, 1997, pp. 83-84), and their sense is thus dependent on context. For this reason, they are simply glossed as TAM in my examples, but the translations will make it clear how they are to be interpreted in that particular context.

4.4.4.4 Noun phrases

The noun phrase (NP), which has a lexical head (base) that acts as a noun, has this form:

determiner (+ modifier) + noun (+ modifier(s))

Examples (4411) and (4412) above illustrate noun phrases. Pronouns, personal nouns, and local nouns regularly occur without a determiner (see 4.4.3.1 above).

The most common determiners are:

<i>te</i>	default det
<i>ngā</i>	definite pl
<i>he</i>	indefinite (number not coded)
<i>a</i>	personal article (see 4.4.3.2.1)
<i>(t)aua</i>	definite anaphoric sg/pl
<i>(t)ēnei</i>	definite prox1 sg/pl
<i>(t)ēnā</i>	definite prox2 sg/pl
<i>(t)ērā</i>	definite dist sg/pl
<i>(t)ētahi</i>	indefinite specific sg/pl

In addition, all *t*-class possessive forms can act as determiners (see 4.4.6.2).

The category of number is normally marked only in the determiners, most often by the presence (singular) or absence (plural) of initial *t*-. Determiners do not encode gender, a category generally unmarked in Māori. However, the personal article *a*, in the list above, could be considered a marker of noun class.

Note that all the determiners listed here after *a* except *(t)aua* also occur with no following noun, as pronouns.

4.4.4.5 Preposition phrases

The preposition phrase (PP) has this form:

preposition + NP

The most common prepositions are:

i, kei, hei, ki, mā, nā, mō, nō, a, o, ko, e

Two examples of PPs follow.

Prep + NP with personal noun (see 4.4.3.1.2):

	PREP	NP
(4415)	e	Toihau
	AG	NAME
	'by Toihau'	

Prep + NP with common noun (see 4.4.3.1.1):

	PREP	NP
(4416)	mā	te pēpē
	INT POSS	DET baby
	'for the baby'	

4.4.5 Passive suffix

Te reo Māori has only a very few affixes, and only one, the passive suffix, has importance in my data.

Traditionally, passive forms occurred with high frequency, and were usually eventive (W. Bauer, 1997; Nicholas, 2010). Although there is anecdotal evidence of diachronic change in the frequency of passive sentences, many sentences that are expressed with an active structure in English are still more likely to be expressed in Māori with passive structures, at least by older speakers of Māori. Additionally, passive forms are found in transitive imperatives (see 4.8.3), which also occur with high frequency.

The passive suffix has many different allomorphs. The most regular is (C)*ia*, for example *-hia*, in *tangohia* ‘take it / be taken’, and *-tia*, in *āwhinatia* ‘be helped’. However, some forms do not match this formula, including the following examples from my data: *kai-nga* ‘be eaten’; *hopu-kina* ‘be caught’; *tiki-na* ‘be fetched’; and *whakamau-a* ‘be worn’.

4.4.6 Possession

The expression of possession is complex in te reo Māori. It involves six possessive prepositions and a complex set of possessive pronouns, including a set of singular pronoun forms that are used only in possessive structures. It also involves forms that allow differential expression of actual versus intended possession. In addition, the relationship between the possessor and the possessee is pivotal, and is described below.

4.4.6.1 A and O categories

The relationship between the possessor and the possessee is expressed by A, realised as /a/ or /a:/; or by O, realised by /ɔ/ or /ɔ:/ . Bauer (1997) refers to this as the A/O morph. The relationship is complex, and definition difficult. Concepts of “alienable” versus “inalienable” have been used to distinguish between the two categories of possession. However, it is important to note that this is not purely a polar opposite choice involving a list of A-category items versus a list of O-category items. Rather, the O-category can be considered as the unmarked category, and the A-category is a more restricted one, comprising things that traditionally were considered alienable. Thus food, eating implements, small, uninherited, personal items, and also children and grandchildren, fall into the A-category. All other things usually fall into the O category. Some regional and individual variation in A/O usage occurs, and speakers may manipulate the categories to show different relationships or “to make a point” (W. Bauer, 1997, p. 392-394; see also P.W. Hohepa, 1967; Biggs, 1969).

There is also a set of three possessive determiner forms that is neutral (NEU), i.e., that do not contain the A/O morph though the forms contain a vowel that looks similar to the A/O morph (especially in texts where vowel length is unmarked). The neutral forms are *(t)aku*, *(t)ō*, and *(t)ana*, and are all *t*-class possessives (see 4.4.7.2). They are used in cases of familiarity, and as such have particular significance in the language used by and with children.

4.4.6.2 Possessive pronouns (*t*-class possessives)

T-class possessives are constructed as follows.

t/ø-A/O + NP

In this structure *t*- indicates a singular possessee and *ø* indicates plural possesseees. The NP indicates the possessor.

If the possessor is a singular pronoun, then the special set of singular possessive pronouns listed in 4.4.3.1.4 is used. (4417) and (4418) illustrate their use as determiners; (4419) exemplifies the use as an independent possessive pronoun.

(4417) *t.ā.ku* *hoa*
 SG.A.1SG friend
 'my friend'

(4418) *ā* *rātou* *kurī*
 PL.A 3PL dog
 'their dogs'

(4419) *he* *hōiho* *t.ō.na*
 DET horse SG.O.3SG
 Lit. 'hers is a horse'
 'she [has] a horse'

The neutral possessives described in 4.4.6.1 act only as determiners. These are illustrated in (4420) to (4422).

(4420) *t.a.ku* *māmā*
 SG.NEU.1SG mother
 'my mother'

(4421) ō pukapuka
 PL.NEU.2SG book
 ‘your books’

(4422) t.a.na hāte
 SG.NEU.3SG shirt
 ‘his/her shirt’

If the possessor is expressed by an NP, rather than a pronoun, the construction above is uncommon, and is usually replaced by a post-head prepositional phrase, where the preposition marks the A/O category:

(4423) te tuarā o Nēni
 DET back O KIN
 Lit. ‘the back of Nēni’
 ‘Nēni’s back’

(4424) te kai a te pēpē
 DET food A DET baby
 Lit. ‘the food of the baby’

Sentences expressing ownership also use the A/O morph, and are discussed in 4.4.7.2 below.

4.4.7 Some features of sentences

4.4.7.1 Predicates and subjects

The term ‘predicate’ refers to all parts of a sentence other than the subject, and in English, this normally includes a verb. In this thesis I use the term ‘nominal predicate’ (NPRED) to refer to nominal phrases which take the place of verb constituents in nominal sentences (after W. Bauer, 1997, p. 15).

All sentence-types except existential sentences (see below) have a subject in their basic structure, although it is frequently omitted in context (see 4.4.7.4). All subjects have the form of an NP with no preceding preposition.

In all sentence types the basic phrase order is:

predicate phrase + SUBJ

4.4.7.2 Nominal sentences

In English, copula and auxiliary verbs are used to convey such concepts as existence (e.g., 'I am'), and possession (e.g., 'I have'). In te reo Māori, there is no copula; neither are there auxiliary verbs. There is, however, an array of widely-used nominal sentences (i.e., sentences with no verb). They include existential, equative, classifying, locational and possessive sentences as described below. The basic structure of these sentence types is

nominal predicate + Subject

All types can be extended by the addition of one or more adverbials. In my data, adverbials appear only in final position, and are typically prepositional phrases. The types of nominal sentence are principally differentiated by the initial particle of the nominal predicate. Table 4.3 shows the structure and meanings of nominal sentences in my data. The final column gives the number of the example sentence.

Table 4.3. Summary of non-verbal sentences

Sentence type	Form of NPred	Initial Particle in Predicate	Sense	Example no.
Existential	NP	<i>he</i> (det)	'Pred exists'	(4425)
Classifying/ Attributive	NP	<i>he</i> (det)	'Subj has attribute/class expressed in Pred'	(4426)
Equative	PP	<i>ko</i> (prep)	'Subj is identical to Pred'	(4427)
Possession	PP	<i>mā, nā, mō, nō</i> (prep)	'Pred has ACT/INT possession of Subj'	(4428)
Locational	PP	<i>i, kei</i> (prep)	'Subj is located at Pred'	(4429)

Exemplifying sentences follow, with further comment as necessary.

Existential

(4425) He wai
 DET water
 '[There exists] water'

Classifying/Attributive

The base in the predicate of these sentences may be a noun, but in my data, the bases are state intransitive verbs, which W. Bauer (1997) argues are stem nominalisations, i.e., they become nouns in this context.

(4426) he mamae taku tuarā
CLS sore/hurt my back
'my back is sore'

Equative

(4427) ko Pūtauaki te maunga
EQ (place name) DET mountain
'the mountain is Pūtauaki'

Possessive

(4428) nō Kui tērā whare
ACT.O KIN that house
'That house belongs to Kui'

This construction is used only for definite possesseees. The initial prepositions are bi-morphemic, and consist of either *m-* or *n-* attached to the A/O morph (see 4.4.6.1). The *n-* morph indicates actual possession (ACT), and the *m-* morph indicates intended possession (INT). Thus if *mō* replaced *nō* in (4444), the sentence would mean 'That house is for Kui'.

Location

(4429) i konei a Kui
situated PST here PERS KIN
'Kui was here'

4.4.7.3 Verbal sentences

Verbal sentences all have a VC as the principal constituent in the predicate. As with nominal sentences, there is a subject in the basic structure, though it is often omitted in context. The subject is always an NP with no preceding preposition. The major division in verbal sentence types is between transitive

and intransitive sentences. Following Bauer (1997), each of those categories is sub-divided according to the class of verb they contain. There are two types of transitive verb: canonical transitives and experience verbs. There are three types of intransitive verb: action intransitives; state intransitives; and neuter verbs. The latter two, neuter verbs and state intransitives, are treated here as one group, since the differences between them are not relevant to my data. As shown in Table 4.4, the principal property that distinguishes between verb classes is the role of the associated NPs. The final column shows the number of the illustrative example.

Table 4.4. Transitive sentence structures

canonical transitive	Function and Form	VC	Subject NP	DO PP with prep <i>i</i>	(4430)
	Role		agent	affected patient	
experience	Function and Form	VC	Subject NP	DO PP with prep <i>ki</i> or <i>i</i>	(4431)
	Role		experiencer	unaffected patient	

Canonical Transitive

(4430) Kei te **kai** a Pāpā i te paraoa
 TAM **eat** PERS KIN DO DET bread
 'Pāpā is eating the bread'

Experience verb

(4431) Kei te **plurangi** a Pāpā ki te paraoa
 TAM **want** PERS KIN DO DET bread
 (Lit.) 'Pāpā wants the bread'

Table 4.5. Intransitive sentence structures

Action intransitive	Function and Form	VC	Subject NP	(4432)
	Role		agent	
State intransitive and Neuter	Function and Form	VC	Subject NP	(4433)
	Role		patient	

Action Transitive

(4432) Kua haere a Māmā
 TAM go PERS KIN
 'Māmā has gone'

State intransitive verb

(4433) Kua maoa te kai
 TAM cooked DET food
 Lit. 'the kai has become cooked'

In addition to their use as verbs, state intransitives can perform the function that adjectives perform in English, modifying a noun (e.g., *kai maoa* 'cooked food'). Neuter verbs do not have this function.

A further intransitive sentence type with a patient-subject is the passive, and its structure is shown in Table 4.6.

Table 4.6. Passive sentence structures

passive	Form and Function of Constituent	VC V has passive suffix	Subject NP	(Adv) PP with prep <i>e</i>	(4434)
	Role		patient	agent	

The passive sentence corresponding to the active in (4430) is below.

(4434) ka kai.nga te paraoa e Pāpā
 TAM eat.PASS the bread AGENT PREP (NAME)
 'The bread was eaten by Pāpā'

Basic verbal sentences (exemplified above) can be expanded by the addition of adverbials.

4.4.7.4 Subject omission

Many sentences do not have an overt subject, either because the subject has been previously mentioned in an interaction, as in (4435) where the subject *te āporo* ‘the apple’ is missing from the answer, or the subject is derivable from context. In both cases, it is unnecessary to pronominalise repeated subjects, as in (4436).

(4435) *Q: Mā wai te āporo?* ‘Who is the apple for?’

A: Mā Puhi. ‘For Puhi.’

(4436) Ka wehe atu a Te Tahi i Rotorua,
TAM separate away PERS NAME PREP LOC N
ka kai ki Taihape, ka haere tonu atu.
TAM eat PREP LOC N TAM go continue away
‘Te Tahi will leave Rotorua, [he] will eat at Taihape, [he] will keep going’

In passive sentences, either or both patient (subject) omission and agent omission is permissible.

4.4.8 Sentence forms

The three basic sentence forms are declarative, imperative, and interrogative sentences. While the focus in this section is on the form of these three sentence types, it is important to note that the function of a sentence may differ from its form. Prosody can indicate a change in some sentence functions.

4.4.8.1 Declaratives

A sentence that is used to make a statement is a declarative. Most sentences in te reo Māori are declarative in form, but their communicative function may be variable.

4.4.8.2 Interrogatives

Interrogative sentences may be polar questions or may use question words. Polar questions (those that can be answered by *āe* ‘yes’ or *kāo* ‘no’) are syntactically identical to declaratives. They usually differ from declaratives in pitch and intonation, and context is relevant. Polar questions can also be

constructed by adding a question tag such as *nē*, *nērā* or *eh*. These words are discourse devices that are used in a similar manner to the range of English tag questions that include, *isn't it*, *wasn't he*, *didn't you* and the informal *innit*.

Anecdotal evidence suggests that the NZE question tag *eh* is being absorbed into te reo Māori. Three orthographical conventions are used in this thesis to represent this word: *ei* when it appears in otherwise te reo Māori speech represented in cameos, *eh* in description, and the informal NZE spelling *ay*, which appears in some of my diary entries. Where it is clear that the tag denotes a question, *eh* is annotated with a question mark in the translation.

Interrogatives can also be constructed with question words (Q). The question words that occur in my data are:

aha 'what'
wai 'who'
(*w*)*hea* 'where' (space); 'when' (time)

For a comprehensive description of interrogatives refer, for example, to W. Bauer (1997, p. 428-445).

4.4.8.3 Imperatives

This section describes the imperative constructions in my data.

The imperative form of a canonical transitive verb uses the passive sentence construction (see also 4.4.7.3).

(4437) kato.hia te putiputi
 pick.PASS DET flower
 'pick the flower'

However, when a part of the body is the object (patient) of a transitive verb, a passive suffix is not required, for example:

(4438) horoi ō ringaringa
 wash PLPOSS2SG hands
 'wash your hands'

The imperative form of an action intransitive verb is the verb stem with no TAM providing the verb is at least three moras in length (see 4.4.5.1). If the verb has only two moras, it is preceded by *e*.

(4439) *e kai*
 FILL eat
 'Eat!'

(4440) *umere*
 shout
 'Shout!'

All true imperatives are negated with *kaua e* 'don't TAM' in front. The following negate the imperatives above:

(4441) *Kaua e katohia te putiputi* 'don't pick the flower'

(4442) *Kaua e horoi o ringaringa* 'don't wash your hands'

(4443) *Kaua e kai/umere* 'Don't shout/eat'

Two declarative constructions sometimes have 'command' functions. A 'weak' imperative can be constructed with the TAM *me* (4469), which expresses obligation. The only occurrences in my data involve intransitive verbs. The construction with transitive verbs is more complex, but is not relevant to my data.

(4444) *me haere tāua*
 TAM go 1DUINCL
 'we should go'

A declarative with the TAM *kia* and a state intransitive verb may be used as a pseudo-imperative. For example:

(4445) *kia tūpato*
 TAM careful
 'be careful'

4.4.9 Negatives

Negators in te reo Māori are verbs. The main negators are listed in Table 4.7 (after W. Bauer, 1997, p. 461), and those that appear in my data are underlined.

Table 4.7. Negators

<u>kāore</u> [*] <u>kāhore</u> <u>kāre</u>	Negates verbal sentences and some nominal sentences. <i>Kāore</i> and <i>kāhore</i> can also be used as ‘no’ in answer to a question.
<u>kāo</u>	Used as ‘no’ in answer to a question.
<u>kore</u> <u>hore</u> <u>kare kau</u>	Strong negative. <i>Kare kau</i> can be used synonymously with <i>kāo</i> . (Anecdotally, <i>kare kau</i> is common in the Eastern Bay of Plenty town and surrounds, where Puhī’s L1 great-grandfather grew up)
<u>kaua</u> <u>kauaka</u>	Negates imperatives e.g., <i>haere</i> ‘go’ > <i>kaua e haere</i> ‘don’t go’
<u>ēhara</u> [*]	Negates some nominal sentences
<u>kīhai</u>	Negates sentences with the TAM <i>i</i> in some dialects
<u>tē</u> , <u>rawa</u>	Used in some dialects, contexts unclear

* In standard orthography, the TAM and base are written as one word in *kāore* and *ehara*.

Negating a sentence involves embedding the whole of the affirmative as the subject of the negating verb, while typically raising the subject of the affirmative out of the embedded clause to the position of the subject of the negating verb. In many negations the TAM of the affirmative undergoes a change, for example, in (4446) and (4447) *kei te* in the affirmative becomes *i te* in the negative. Table 4.8 illustrates transformation from affirmative sentence to negative sentence.

Table 4.8. Structure of Negative Sentences

Basic order		After Subject Raising		
VC	Subject	VC	Subject	Complement
Negator	Affirmative Sentence	Negator	Subj of Affirmative S	Remainder of Affirmative S

Affirmative verbal sentence:

(4446) kei te tū mai a Pēpi
TAM stand DIR PERS KIN
‘Pēpi is standing (facing me)’

Corresponding negative sentence:

(4447) kāore a Pēpi i te tū mai
NEG PERS KIN TAM stand DIR
'Pēpi is not standing (facing me)'

Table 4.8 shows that negation in te reo Māori is complex, and therefore there is an expectation that full command of adult negation would not figure early in children's acquisition of Māori. For more detailed description of negation refer to W. Bauer (1997).

4.4.10 Actor emphatic

One further sentence structure appears in my data: the actor emphatic. Its name indicates its primary function. It is best discussed through an example:

(4449) nā Awa i kai ngā āporo
POSS NAME TAM eat DET.PL apple
'It was Awa who ate the apples'

There is disagreement about the analysis (see e.g., Bauer, 1997), but I adopt an analysis where the predicate is the *nā*- phrase, and the whole is thus a non-verbal, possessive sentence. Parallel to the analysis of negation (4.4.9) the remainder of the sentence is the subject, so that it is more literally 'the eating of the apples belonged to Awa', and the sentence involves a subordinate clause.

4.5 Chapter summary

In this chapter I have explained some aspects of KM practice and theory as it relates to my background in KM education, as a motivating factor, and as the context for the study. I have located myself within the study, and explained the purpose of the study in terms of its potential to inform revitalisation of te reo Māori by focussing on the natural acquisition of te reo Māori by young children. As background for those unfamiliar with Māori language and culture, I have described some *tikanga Māori* 'Māori practices and values', provided a brief overview of the current status of te reo Māori, and sketched its grammar.

This chapter thus provides a background to the following three chapters, in which I analyse my data in three ways. In chapter 5, I analyse data gathered from the two case-study children in order to explore their language choice.

Chapter 5: Language environment and choice

A bilingual family is not an island, but part of a larger community
(de Houwer, 2009, p.12)

5.0 Introduction

Observation of the two case-study children and their *whānau*, and informal conversation with *whānau* members, confirmed that bilingual input to the children occurred throughout the study period. However, as the study progressed and the children began to produce language, it became apparent that one child was producing mostly te reo Māori, and the other child was producing mostly English. Since one of the goals of this study is to increase understanding of factors that lead to the use of a minority language in a bilingual community, this observation raised the following supplementary questions:

1. What is the nature of the language environment of each child?
2. What does a detailed examination of the children's language production reveal about their use of the two languages?
3. Is it possible to identify any aspects of the environment that are related to the choice of principal first productive language by the two children?

The present chapter considers language use and language choice, and addresses aspects of the major research questions by considering the above questions. The chapter overviews the scope and sources of the data that were examined in relation to these questions, and outlines and discusses my analysis of the “input” and “production” data collected from each of the case-study children and their *whānau*. It also considers aspects of the children’s language environments in their choice of principal first productive language.

5.1 Data scope and sources

Three sources of data are used in this chapter: transcribed video footage, informal interviews, and diary records. The data is selected from 64 hours of video footage taken of Puhi and 15 hours of video footage taken of Jessica-Lee.

is divided into four sets: that is, two “input” data sets (one for each child), and two “production” data sets (one for each child).

I use the term “input” to refer to spoken language (e.g., words, sentences) that was used in the children’s environments. This includes language directed to the children (IDT), and language used around them (ambient language). I use the term “input language” to distinguish between Māori or English in the children’s environments. I use the term “production” to refer to speech produced by the case-study children, and the term “productive language” to distinguish between Māori or English when the children are speaking.

5.1.1 Input data

Input data were analysed in two ways. First, video footage, diary records, and informal interviews gathered throughout the study were used to build detailed descriptions of the children’s language environments. Second, transcripts of two, 16-minute video recordings of each of the two children interacting with their *whānau* were used as the source of input data for linguistic analysis.

5.1.2 Production data

Production data were extracted from transcripts of all videos taken from Puhi from age 20;0 to 24;0, and Jessica-Lee from age 20;1 to 24;2. I chose two-word utterances as units of analysis because Jessica-Lee entered the study at age 20;0, when she had already begun producing these structures. Thus each child’s production data set consisted of every interpretable two-word construction from the defined period. In addition, video footage, field notes, and informal interviews gathered throughout the study were drawn upon in

interpreting what I refer to as each child's "two-word data-set" (two data sets in total, see 3.6.2).

5.2 Analytic approach

My analysis of the two "input" data sets and the two "production" data sets drew on linguistic and qualitative research practices in selecting, coding, presenting and interpreting data. The purpose was to gain an understanding of the children's language environments, choices and production, and to explore connections between these three aspects of their language development. My analysis of the production data revealed rather different patterns in the data from te reo Māori and the data from English. This was accounted for by consideration of Biggs' (1969) description of the phrase as "the natural grammatical unit" of te reo Māori (see 4.4.4), and R. Brown's (1973) description of two-word phrase patterns typical of L1-English acquisition. I also consider the children's utterances in light of BFLA research.

5.2.1 Selecting videos and coding input data

I selected video-clips of interactions in which there were more participants than a single adult-child dyad, but not so many that multiple conversations affected audio quality. Video-clips were selected of Puhi as close as possible to 12 months and 24 months of age, and of Jessica-Lee as close as possible to 24 months and 36 months of age. The age difference was due to the actual age difference (about 11 months) between the two children at the time of data gathering. Three video-selections were continuous 16-minute recordings. The fourth was two video-clips of Puhi aged 11;03. These clips were taken consecutively with a short (nine-minute) break in between. This was due to the recording equipment, which had limited capacity, and which stopped unexpectedly. When the camera operator realised recording had stopped, he turned the camera back on. Analysis was therefore made of 11 minutes of the first video plus 5 minutes of the second video – a total of 16 minutes. There is a

ten minute break after the eleventh minute of the first video and the start of the second. There is no reason to believe that this discontinuous recording differed in any material way from the other continuous recordings.

5.2.1.1 Coding input

Based on observation of each of the two *whānau*, I recorded the names of people who interacted with and around each of the children. I recorded whether the language used with infants was English, Māori, or both. I categorised the language use of each *whānau* member using the scale of input language illustrated in Table 5.1.

Table 5.1. Scale of input language

Description	Definition
Almost all English	English except for an occasional word or phrase
Mostly English	English except for certain people or contexts, like Kōhanga Reo
Half and half	Roughly equal amounts of Māori and English
Mostly Māori	Māori except for certain people, or contexts, for example, while shopping, or at a doctor's appointment
Almost all Māori	Māori except for an occasional word or phrase

During informal interviews, the mothers of the two children were asked to check that the recorded information was a fair representation of language use around Puhi and Jessica-Lee. Video transcripts were then coded, in order to extract data on the language spoken by members of the children's *whānau*.

5.2.1.2 Coding turns

Whānau members' production was coded by turns according to whether it was infant-directed talk (IDT), child-directed talk (CDT) or adult-directed talk (ADT), and by language, as detailed in Table 5.2. A turn was defined as: a new speech act by a different speaker; or the continuation of an extended speech act that had been broken by an interjection from another speaker.

5.2.1.2.1 Mixed-language turns

Turns falling into categories 9-12 were considered as “mixed-language turns” (see 2.4). Mixed-language turns were initially divided into “mostly English” (Eng + Mao); “mostly Māori” (Mao + Eng); and “half Māori, half English” (Eng & Mao). However, due to the low frequency of these utterances, in the final analysis they were tallied together as “mixed English and Māori” to differentiate them in the total tally from English-only and Māori-only utterances.

Table 5.2: Categories of input language

1	ENG IDT	Infant directed talk in English
2	ENG CDT	Child directed talk in English
3	ENG ADT	Adult directed talk in English
4	ENG 2+ GROUPS	Talk in English directed to two or more of the above groups
5	MAO IDT	Infant directed talk in Māori
6	MAO CDT	Child directed talk in Māori
7	MAO ADT	Adult directed talk in Māori
8	MAO 2+ GROUPS	Talk in Māori directed to two or more of the groups in Lines 1-3 above
9	MIXED IDT	Mixed English and Māori talk (see 5.2.1.2.1) directed to infants
10	MIXED CDT	Mixed English and Māori talk directed to children
11	MIXED ADT	Mixed English and Māori talk directed to adults
12	MIXED 2+ GROUPS	Mixed English and Māori talk to people in two or more of the above groups in Lines 1-3
13	INDISTINCT	Indistinct speech (see 5.2.1.2.2)
14	EXC	Exclusions (see 5.2.1.2.3)

5.2.1.2.2 Indistinct

When indistinct or inaudible speech rendered a turn uninterpretable, that turn was counted as “indistinct” and not included in the language tally. If any part of the participant’s turn was sufficiently audible for transcription of one or more words to occur, it was counted as if the participant’s turn was wholly audible.

5.2.1.2.3 Exclusions

I acknowledge that all utterances, including fillers, contribute to the overall linguistic landscape. However, there were a number of circumstances where there was doubt about the language to which a vocabulary item belonged.

Typical issues were the classification of certain fillers (e.g., /a:/), vocabulary items originating in English that had possibly been absorbed into the vocabulary of te reo Māori (e.g., OK /akei/), and children's onomatopoeic vocalisations (e.g., vehicle sounds).

When the following items occurred as a one-word turn, they were categorised as exclusions.

a a /aʔaʔ/ [dup]
 ā or ah /a/ /a:/
 eh or ei /e:i/ /a:i/
 e hoa, ea
 /ha/
 /m/
 /mʌm
 oh /o:/ /aʊ/ /ɔʊ/
 ooh, ū /u:/
 ok /akei/ /kei/ /oukei/
 ow /æʊ/ /aʊ/
 sh /ʃ/
 ta /ta:/ /taʔ/
 um /ʌm/ /am/ /a:m/
 wī /wi:/

The following were also excluded from the overall language tally:

- All proper names, including kinship terms and personal nicknames, (e.g., Bubba, Pēpē, Mum, Son, Darling, Māmā) when occurring as a whole turn;
- The vocalisations of pre-verbal infants, and non-word vocalisations by any age group;
- Verbalised laughs (e.g., /ha:/ /ha/ [dup]);
- A word from a language other than Māori or English (one occurrence)
- Three comments made to the camera for the purposes of clarification to (or by) the researcher in a video of Jessica-Lee (aged 36;0).

In addition, I did not include each case-study child's production in the input tally. That is, I did not count Puhi's production as input to Puhi, nor did I count Jessica-Lee's production as input to Jessica-Lee. Additionally the children were

never recorded together, and so the production of one child never amounted to the input of the other. The children’s production is instead analysed in 5.3.4 and 5.4.4.

In a number of videos, input came from sources other than the people present, such as a TV or radio. The appropriate classification of any such material was decided on a case-by-case basis, for example:

- Songs, television programmes and radio broadcasts playing in the background were often hard to hear and therefore to transcribe, and were not easily fitted into the definition of turns. There were no occasions in the four chosen videos where the case-study infant was actively engaged in listening to such broadcasts. Although it is acknowledged that these are significant in the infant’s overall language environment, they were not included in the tally;
- When a participant was singing, or singing along to a recording, these were transcribed and counted as turns;
- A voice recorded on a child’s toy was included when the case-study child turned the toy on and engaged with the voice, by smiling and looking at another participant while the voice played.

5.2.1.3 Coding production data

I identified all two-word tokens (see 2.5.4) from Puhi aged 20;0 to 24;0, and from Jessica-Lee aged 20;1 to 24;2. These were coded according to their language make-up, using categories adapted from de Houwer’s BFLA utterance types (2009) (see also Table 2.2). The language categories are:

Table 5.3: Different types of utterance (after de Houwer, 2009, p. 41)

Language	Definition
MAO	Utterances exclusively comprised of words from Māori
ENG	Utterances exclusively comprised of words from English
Mixed	Utterances with one word or morpheme from each language
Indeterminate	Utterances that could belong to either Māori or English.

Utterances comprised of a personal name or kinship term plus another word were categorised according to the language of the other word, regardless of the whether the name was English or Māori. For example “*Pāpā work*” was

categorised as English, and “*wai Lala*” was categorised as Māori. These combinations include names performing the following functions (speaker in brackets):

Subject (Jessica-Lee):

(5301) Pāpā go
KIN V

Possessor (Jessica-Lee):

(5302) wai Lala
water NAME

Possessor (Puhi):

(5304) nā Nēni
POSS NAME

Subject (Puhi):

(5305) pekepeke Toihau
V NAME

Term of address (Puhi):

(5307) heihei Nēni
hen NAME

5.3 Results: Puhi’s language environment and production

In this section I present results and discussion regarding Puhi’s language environment and the two-word utterances she produced. I present and discuss descriptive and quantified input data and compare Puhi’s production data with: (i) adult norms of te reo Māori, (W. Bauer, 1997; Biggs, 1969); (ii) two-word structures typical of early L1-English production (R. Brown, 1973; see also Burdelski & Cook, 2012; Ellis, 2003); and (iii) features of BFLA (de Houwer, 1990).

5.3.1 Description of Puhi's home language environment

For Puhi, input predominantly came from her large *whānau*, which included her parents, two grandmothers, and relatives who were regularly in residence, as well as around fifty *whānau* members of all ages who were regular visitors at her home, and she at theirs, and who came together en masse for *whānau* events at least two-monthly. Most *whānau* members spoke mostly Māori to Puhi throughout the study. Puhi was also exposed to English from some adults who were regular visitors to her household (at least weekly) and who used English with her. A few *whānau* members used only Māori with Puhi (IDT) and almost all Māori around her (ADT).

From age 4;0 to 9;0, a move to another town meant a change of environment to a nuclear family situation. During that period, IDT was in Māori from both parents, and almost all the ambient language was in English. Puhi returned to Ōtaki at 9;0, and her language-socialisation environment was restored much as it had been. Puhi attended Tuu Roa Kōhanga Reo from the age of 16;0 and was there exposed to mostly Māori from adults, and both English and Māori from children for six hours a day, five days a week. From 18;0 to 24;0 she and her mother resided in Wellington City with two of Puhi's aunts, an infant cousin, and two males (aged 17-20 years), all of whom used te reo Māori with her except for one aunt, who used roughly half-and-half with her. During this period Puhi commuted to and from her grandmothers' homes in Ōtaki on most weekends and holidays, and attended Te Kāhui Kōhanga Reo for approximately 7 hours a day, five days per week, where she heard almost all Māori from adults, and both English and Māori from children.

5.3.2 Description of Puhi's community language environment

Approximately 15% of the total Ōtaki population speak te reo Māori, but the figure for the Māori community of Ōtaki is much higher: about 50% speak te reo Māori. Puhi and her *whānau* mostly interacted with the Māori-speaking

community, for example at *marae*, at Kōhanga Reo, and in general social interaction. Thus te reo Māori was used in many and varied contexts, both formal and informal. The wider communities in which Puhi lived meant that she heard mostly English in contexts such as shops, sporting events, doctors' clinics, and playgrounds. She also heard te reo Māori spoken in varying amounts and in varied situations in each of the towns in which she resided. Predominantly Māori-language contexts included Kōhanga Reo, *pōhiri* (see 4.2.1) and *kura reo* 'language schools' of up to a week long. Adult-adult conversations also occurred in te reo Māori between a few *whānau* members including Koro-Leon, and Kui-Kata, both of whom spoke Māori to all *whānau* members except occasionally to accommodate people present whose proficiency in Māori was limited.

Two other *whānau* members, with whom Puhi had regular contact and engaged significantly, provided other-language input. One routinely used almost all Dutch in his IDT with Puhi and the other used almost all Samoan with her. While Puhi was not recorded producing Dutch or Samoan words at any time during the two-word period, *whānau* members reported her occasional production of words or phrases in these languages. This is not a focus of the research, and did not appear to affect the findings.

Differing attitudes towards English and Māori were evident in Puhi's community. For example, Māmā and Aunt-TeAtawhai explained the response they received when they entered a local shop while speaking to each other and their children in te reo Māori. The reaction is illustrated in Cameo 5.1.

Cameo 5.1. Language attitudes
Diary (2012-08-06)

We walked into the shop and the [shop assistant] said “Are you going to teach your babies to speak English?”
... We explained that they would learn English from others in the community. And she [the shop assistant] went on and asked “What about employment? How are they going to deal with people who only speak English?”
... We replied that English is all around and there is no way we could stop the children learning English.

This incident was one of several in my data that occurred in Wellington, Rotorua, and Ōtaki. Participants reported, or discussed on camera, incidents in which they felt they had been challenged for speaking Māori, as I had twenty-something years earlier (see 1.1). This reflects the low status still afforded by some people towards te reo Māori around Aotearoa-NZ and even in Ōtaki, where it has a relatively high visibility and political status (see also 4.3).

5.3.3 Input data: Puhi

Notwithstanding situational variations, the overall language input to Puhi is represented in Table 5.4.

Table 5.4: Input languages – Puhi’s environment

Input source	Puhi
IDT from mother	Almost all Māori
IDT from father	Almost all Māori
IDT from other significant adults and older children	Mostly Māori
ADT and ambient language	Mostly English

5.3.3.1 Input data from videos: Puhi

The data in two 16-minute video-clips presented in this section are of Puhi when aged 11;3 and 23;1. As explained in 5.2, participants’ speech was identified and each “turn” was coded and counted. In the first transcript, 183 turns were counted, while in the second, the number of turns was 216. All turns were categorised as shown in Figure 5.1 and shown as a percentage of the total number of turns across the sixteen minutes of each video clip.

Figure 5.1 Language use around Puhi aged 11;3 and 23;1

Figure 5.1 shows clearly that IDT is principally in te reo Māori and ADT is principally in English, and this is consistent across both video clips.

5.3.3.2 Input and IDT: Puhi

This section identifies two features of input to Puhi. The first is a special IDT register that many *whānau* members used as a socialisation mechanism to initiate interaction with Puhi as a young infant. This register featured high-pitch, repetition and exaggerated prosody, as does other IDT registers (see also 2.5.5.4). Te reo Māori was the most frequent language of this IDT to Puhi. The second is code-switching. Adults mostly spoke English to adults, but Māori to infants. Thus, they code-switched often as they moved between addressing infants and addressing adults, and vice versa. Cameo 5.2 illustrates IDT features including te reo Māori, simplified structures and repetition. Cameo 5.2 also clearly shows the switches between English (blue text) and Māori (red text) that occur when Kui changes between ADT and IDT.

Cameo 5.2. Code-switching

Age: 23;0

3:00	<p><i>Kui, ironing, waves her L arm in a “shoo” gesture as Puhi approaches the ironing board carrying a computer keyboard.</i></p> <p><i>Kui [to Puhi] Kao. Waiho ki kō. Werawera. <No. Leave it over there. Hot></i></p> <p><i>Puhi looks down at the keyboard in her arms, but does not move away.</i></p> <p><i>Kui [to Puhi] Werawera ki konei. <[It's] hot here></i></p> <p><i>Kui gestures again this time towards firewood in plastic containers on floor.</i></p>
3:04	<p><i>Kui [to Māmā]...that just takes up too much room like that...</i></p> <p><i>Puhi lifts the keyboard onto the ironing board. Kui pushes keyboard towards Puhi.</i></p>
3:05	<p><i>Kui [to Puhi] No. Kāo. Haria ki kō. <No. Take it over there></i></p> <p><i>Kui and Puhi make eye contact, Kui frowns.</i></p>
3:06	<p><i>Kui [to Māmā] There is kindling outside...</i></p> <p><i>Puhi steps away from ironing board, leaving keyboard on it. Puhi babbles, steps forward and pushes the keyboard further onto the ironing board.</i></p> <p><i>Puhi /...be be be?/ [babble]</i></p> <p><i>Puhi snatches her hands away as Kui looks at her.</i></p>
3:08	<p><i>Kui [to Puhi] Kāre au pīrangī. <I don't want [it]></i></p>

The IDT in this cameo is important because it gives rise to two hypotheses. First, there is evidence that some infants show a preference for features of IDT, such as high pitch, and therefore tune in to that register (Fernald, 1985). If this is the case for Puhi, and for other children acquiring L1-Māori, then this may signal high-pitched IDT as a socialisation mechanism for tuning infants into te reo Māori. Second, there is a possibility that even very young children are sensitive to the social status of language. If this is the case, then Puhi, and other children whose L1-Māori acquisition is supported by special Māori IDT registers, may perceive that te reo Māori is for babies, and will choose the adult-status English at a later point. More detailed description of the specific pattern of IDT used by Puhi's *whānau*, and its place in Puhi's language socialisation can be found in 6.3.

Cameo 5.2 also illustrates code-switching as part of the bilingual environment in which Puhi is being socialised, since Kui switched between languages several times in the event. At one point Kui used English *no* when moving from ADT to IDT. She immediately translated to *kāo* 'no' in Māori. This manifested as

consecutive, equivalent utterances in two languages, which I refer to as a “paired-utterance” (see also 5.3.4.4 5.3.4.4 and 5.4.4.5).

5.3.4 Puhi’s language production

Video recordings captured Puhi’s utterances of more than one identifiable word from the age of 18;0. I identified all Puhi’s two-word tokens and then categorised each discrete two-word utterance type according to its language make-up.

Figure 5.2 illustrates Puhi’s language use across all recorded two-word utterance types between ages 20;0 and 24;0. Puhi showed a strong preference for te reo Māori, with 103 out of 108 (95.4%) of her two-word utterances in Māori. Puhi produced three (2.8%) phrases in English, one mixed utterance, (0.9%), and one phrase that could be from either language (0.9%).

Figure 5.2: Puhi’s two-word utterances from 20 to 24 months

5.3.4.1 Māori utterances in Puhi’s production

The majority of Puhi’s two-word production was in te reo Māori. Both the vocabulary and the underlying structure of most of her production also fitted norms of adult te reo Māori. The following examples represent a selection of the

total of 102 unilingual Māori utterances out of 108 two-word utterances produced by Puhi in total.

Table 5.5. Selection of Puhi's two-word utterances

	Articulation	Interpretation	Translation	Structure
(5308)	/a pai	ka pai	Good	PROTO + V
(5309)	/ne nenei/	nā Nēni	Nanny's	PROTO + NAME
(5310)	/ka kaukaē/	ka kaukau	[will] bathe	PROTO + V
(5311)	/ka kite/	ka kite	[will] see	PART + V
(5312)	/əki mai/	hoki mai	come back	V + MOD
(5313)	/ə pɪkə:/	e piki	climb	PROTO + V
(5314)	/wedewed dɔtɔ/	pūngāwerewere roto	spider inside	N + LOC

The abbreviation “PROTO” is used in place of the term “proto-particle”, and refers to the part of Puhi's utterance that is additional to an interpreted base. A proto-particle is a form that was not fully recognisable as one of several particles found in adult norms of te reo Māori, but may be acting as a place-holder (see 2.3.1.3) in Puhi's production as she develops understanding of the varied particles of te reo Māori. Examples (5308) to (5313) in Table 5.7 approximate the typical (PART +) BASE (+ MOD) structure of an adult-acceptable phrase of te reo Māori. This finding is important for two reasons. First, it illustrates Puhi's acquisition of a structure that is particular to te reo Māori and is the first record of its appearance in the production of a child acquiring L1-Māori. Puhi's developing proficiency in using the basic phrase unit of te reo Māori (Biggs, 1969), is a key sign of her growing proficiency in this language. That, in turn, signals that the goal of Māori language transmission and socialisation is occurring for this child by age 24;0.

Example (5314) could be an approximation of an adult te reo Māori structure such as “[he] pūngāwerewere [kei] roto”, ‘[there is a] spider inside’. On the other hand, it is also similar to a form that is typical of the two-word structures produced by children acquiring L1-English. Typically, two-word structures of L1-English learners have a very different structure to the Māori phrasal structure

described by Biggs (see 4.4.4). The typical English two-word phrase is comprised of various combinations of two content words, for example:

SUBJ + ACTION (e.g., dog go)

ACTION + OBJ (e.g., do it)

ADJ + N (e.g., big dog)

ACTION + DIR (e.g., go away).

It is not possible to say whether (5314) exemplifies an English or a Māori structure, or whether it is perhaps both. If the latter, then this may be incidental, or may be a bilingual feature of Puhi's production.

5.3.4.2 English utterances in Puhi's production

Out the total of 108 two-word utterances, three were unilingual English structures.

Table 5.6. Puhi's English utterances

	Articulation	Interpretation	Structure
(5315)	/awawei/	go away	V + DIR
(5316)	/paenui da:u?/	NAME, don't	NAME + V
(5317)	/...duit/	...do it	V + N

Examples (5315) and (5317) fall into the category of typical L1-English two-word phrases described in 5.3.5.1, below. The utterance in (5316) consists of a name combined with a single-item negative imperative *don't*. These examples illustrate that, at the time Puhi was developing proficiency with two-morph Māori phrases, she was also developing proficiency at a similar structural level in English. However, exemplifying utterances in English are far fewer than Puhi's Māori utterances (see 5.3.4.1).

5.3.4.3 Mixed utterances in Puhi's production

Puhi produced no clearly interpretable mixed-vocabulary two-word utterances within the defined period other than MAO WORD + ENG NAME combinations. As

these are categorised for the language of the non-name word (see 5.2.1.3), these are not analysed here as bilingual structures.

Puhi produced one utterance that may have contained either mixed or blended vocabulary items.

(5318)		Age: 21;0	
Puhi:	/au	fana:/	
(a)			
Interpret:	au	whana	
Gloss	1sg	kick	
(b)			
Interpret:	oh	whana	
Gloss	EXLM	kick	

Key: Eng Mao

While the second morph was clearly interpretable as *whana* ‘kick’ in the context of Puhi kicking a toy, I considered two possible interpretations for the utterance /au fana:/. The first interpretation, (5318a), is that *au* is the Māori 1sg pronoun ‘I/me’. The second interpretation is that it is the English exclamation *oh*. The SUBJ + v word order of this example makes it more similar to adult norms of English than to the v + SUBJ order of Māori. The interpretation of /au/ as ‘au’ therefore positions this as a mixed two-morph utterance, with the ‘mixture’ being Māori vocabulary in an English structure. The second interpretation is that *au* is the English exclamation ‘oh’, which positions (5318b) as two consecutive one-morph utterances, one in English and one in Māori. Either of these analyses describes the example as a mixed utterance. Mixed utterances are a typical feature of BFLA (de Houwer, 2009), and their presence in my data therefore signals Puhi’s developing bilingualism.

5.3.4.4 Paired utterances and translation

Other forms that signalled Puhi’s developing bilingualism included paired utterances and translations. Puhi produced one set of paired utterances, *Where did it go? Kei hea?* This is illustrated in Cameo 5.3.

Cameo 5.3. Paired utterance

Age: 23;1

34:00	<i>Puhi and two adults are discussing a pair of broken sunglasses. Puhi drops them, and then turns 180° and asks the same question in Eng and Mao:</i>		
34:10	PI	/wə:ðədəʔgau/	(where did it go?)
		/kai hea/ /kai hea/	<where is [it] (rep)>
	Kui&MH	[echo simultaneously]Kei hea?	
	PI	smiles, then laughs.	
	MW	Whakahokia ngā mōwhiti ki te tēpu	
		<Return the glasses to the table>	

Puhi uses the English interrogative sentence *where did it go?* and follows up with its Māori equivalent *kei hea?* Since paired utterances occurred in her environment (see Cameo 5.2), Puhi's own paired utterance may indicate her creativity in generating language pairs that she may not have heard previously. It indicates her understanding of a single concept across two languages, and also her proficiency at expressing a single concept across two languages. It therefore signifies her development towards the role of a 'speaker' and towards proficiency in English, in Māori, and as a bilingual by 23;1.

5.4 Jessica-Lee's language environment and production

5.4.1 Description of Jessica-Lee's home language environment

Input in the period from birth to 24;2 was provided mainly by Jessica-Lee's nuclear family, made up of two older brothers and two parents; and also by a daytime caregiver, Whaea-Jess. Apart from Māmari, who spoke almost all Māori to Jessica-Lee, IDT to Jessica-Lee was almost all in English, and the ambient input language was also almost all English. Pāpā-M and Whaea-Jess used almost all English IDT, though with some Māori words and phrases appearing consistently. From birth to 21;0, Jessica-Lee spent week-days in Whaea-Jess' care. Māmari reported that Māori-speaking relations and friends visited regularly (at least monthly), and as researcher, I also visited the *whānau* several times for the purposes of data-gathering, and to share a meal. These

visits created opportunities for Māori ADT between Māmari and visiting adults, and for further Māori IDT to Jessica-Lee.

5.4.2 Description of Jessica-Lee's community language environment

Jessica-Lee's language community was predominantly English-speaking. She attended weekly church services with her family, where almost all congregation members spoke English during formal and informal interactions. Two Māori-speaking congregation members occasionally used te reo Māori with Māmari and the children at church. From 21;0 until the end of the defined two-word period, Jessica-Lee attended a dual-medium early-childhood centre for two days per week. The centre provided "learning experiences through the medium of Te Reo Māori [sic] offered at various levels, subject to kaiako/teacher abilities" (Te Puna Reo o ngā Kākano, n.d).

5.4.3 Input data: Jessica-Lee

An overall picture of input languages to Jessica-Lee is represented in Table 5.7.

Table 5.7. Input languages – Jessica-Lee's environment

Input source	Jessica-Lee
IDT from mother	Almost all Māori
IDT from father	Almost all English
IDT from other significant adults and children	Almost all English
ADT and ambient language	Almost all English

5.4.3.1 Input data from videos: Jessica-Lee

Data from transcripts of two 16-minute video-clips are presented in this section. Jessica-Lee is aged 23;0 in the first, and 36;0 in the second. In the first transcript, 271 turns were counted, while in the second transcript, 209 turns were counted. All turns were categorised as shown in Figure 5.3. One difference between the two transcripts is accounted for by the presence of only one adult in the first video-clip and two adults in the second. There was therefore no adult-adult speech in the first. Figure 5.3 shows the 'turns' in each

language category as a percentage of the total number of turns across the sixteen minutes of each video clip.

Figure 5.3. Language use around Jessica-Lee aged 23;0 and 36;0

In the second video-clip, the presence of Pāpā-M, who used English almost all of the time, meant that adult-adult talk was almost all in English. CDT and IDT was almost all in Māori from Māmari and almost all in English from Pāpā-M.

5.4.3.2 Input and IDT: Jessica-Lee

Jessica-Lee's *whānau*, like Puhī's, also used an IDT register in both English and te reo Māori. This is illustrated in Cameo 5.4, in which Pāpā-M and Māmari play with Jessica-Lee, and query the whereabouts of the family's two cats, Bootsie and Lulu.

Cameo 5.4 shows that Māmari switched between infant-directed talk in Māori (blue text) to Jessica Lee, and adult-directed talk in English (red text) to Pāpā-M (e.g., "You can turn it up a bit...") just as Puhī's adults did in Cameo 5.3. Also evident is the simplified structure "where my bubba", modified vocabulary (e.g., "bubba"), and modified phonology (e.g., /da/ for "the"). High pitch, exaggerated prosody, and slowed delivery were also evident from both parents in the video footage.

Cameo 5.4. Bootsie and Lulu

Age: 20;1

2:00	<p>Pāpā-M (points) <i>There the Boots</i> (exaggerated prosody) Jessica-Lee looks in direction of pointing... Māmari <i>Kei hea...a Ngeru?</i> A/Oh <i>kei hea a Bootsie?</i> <Where...[is] Cat? Oh, where is Bootsie?> ... Pāpā-M <i>Da Lulu and a Bootsie</i> (exaggerated prosody) Māmari <i>Kei hea a Lulu?</i> <Where is Lulu?> Pāpā-M <i>Ta Poosie</i> (The Bootsie) Jessica-Lee VOC /ō/ Pa imitates Jessica-Lee's VOC. Pāpā-M /o o o o/ (rep) Māmari (to Pāpā-M re TV) <i>You can turn it up a bit if you want...</i> Jessica-Lee covers one eye with RH and shakes head. Māmari <i>Kei hea a Jessica-Lee?</i> <Where is Jessica-Lee?> Pāpā-M <i>Oh no.</i> Māmari <i>...kua ngaro a Jessica-Lee</i> (high pitch) <Jessica-Lee has gone> Pāpā-M <i>Oh no where my bubba, where's my bubba?</i> (high pitch) Jessica-Lee removes hand from eye. Māmari and Pāpā-M (loudly and in unison) <i>Ah!</i> Pāpā-M <i>Auē tarāira.</i> O o o <goodness me [familial exclamation] ></p>
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5.4.3.3 Other children in the whānau

My data shows that Jessica-Lee's two older brothers, Te Rangihuia and Havelund, used almost all English, other than a few words and phrases. In one playful incident, Jessica-Lee (age 23;0) repeatedly hid and then revealed herself in response to Māmari calling, *Kei hea a Jessica-Lee?* 'Where is Jessica-Lee?' Te Rangihuia (aged 8) joined in, saying, *Where's Jessica-Lee?* Māmari encouraged him to speak Māori, *Can you say it in Māori? Kei hea a Jessica-Lee?* Te Rangihuia began with *Kei hea...* but stopped and laughed when Jessica-Lee's feet were revealed. He then returned to using English. In an interaction involving Havelund, Māmari and Jessica-Lee, Havelund (aged 5 years) read a book aloud in Māori. Māmari praised him for his efforts. She later reported that both boys had, since the start of the study, more often expressed a desire to learn to speak more Māori. The boys' language choice is significant, indicated by Jessica-Lee's high motivation to communicate and play with them.

For example in one event (age 21;0) she heard her brothers talking in the background. She pointed in that direction, said /bɔɪs/ (boys), and then went to look for them. In video footage where one or both of the boys were present, Jessica-Lee spent most of the time playing happily and boisterously with them. This indicates that the predominant use of English by the older children may have been an important factor in Jessica-Lee's own language choice, similar to the findings in a study by Chan and Nicoladis' (2010) (see 2.3.1.1).

5.4.3.4 Comprehension

My data shows that Jessica-Lee was proficient in her comprehension of te reo Māori as used by Māmari. Jessica-Lee demonstrated this repeatedly throughout my data, by responding appropriately to te reo Māori through her actions and speech. For example, Jessica-Lee (age 21;0) was holding a snack in her hand. Māmari asked *Māku te kai? Mā Mummy te kai?* 'Is the food for me? Is the food for Mummy?' and Jessica-Lee responded by smiling, shaking her head, and moving the snack out of Māmari's reach.

5.4.4 Jessica-Lee's language production

Figure 5.4 illustrates the language use across all recorded two-word utterance types from Jessica-Lee between 20;1 and 24;2. Jessica-Lee showed a strong preference for the use of English. Of 93 two-word utterances, sixty (64%) were English. She also produced sixteen (17.2%) Māori phrases, thirteen (14%) mixed phrases, and four phrases that could be from either language (4.3%). (Jessica-Lee produced more of these than Puhi (0.9%)).

Figure 5.4. Jessica-Lee's two-word utterances from 20;1 to 24;2 months

5.4.4.1 Māori utterances in Jessica-Lee's production

All of the vocabulary in the examples in Table 5.8 is Māori, but there is a mix of Māori and English phrase structures in these examples. Examples (5401) to (5405) approximate typical PART + B phrases of te reo Māori, which provide evidence that Jessica-Lee was developing proficiency in using this structure and signal that her proficiency in te reo Māori was growing. It also adds weight to my finding that the earliest L1-Māori combinations are specific to te reo Māori, and are of this form.

The remaining examples in Table 5.8 are content-word + content-word structures, which are more typical of L1-English two-word phrases sentence structure (R. Brown, 1973). While the word order of (5406) has Māori N + POSS order, (5407) to (5410) all have English word order: (5407) and (5410) have English POSS + N order, and (5408) and (5409) have English SUBJ + V order. This signals further mixing in Jessica-Lee's production than an analysis based solely on vocabulary (see Figure 5.4).

Table 5.8. Jessica-Lee's Māori two-word production

	Articulation	Interpretation	Structure	Translation
(5401)	/amai/	homai	V + DIR	give me
(5402)	/e pou/	kua pau	PROTO + V	[it] has [all] gone
(5403)	/a pau/	āe pau	EXCL + V	yes [all] gone
(5404)	/a pou pou/	kua paupau	PROTO + V (DUP)	[it] has [all] gone
(5405)	/əpepi/ /epepi/ /he pepi/	he pēpi	PROTO + N	a baby
(5406)	/wai la/	wai Lala	N + NAME	water NAME
(5407)	/aija mati/	Huia mati	NAME + N	NAME toe
(5408)	/lala mamae/ /lala mama/	Lala mamae	NAME + S-INTR	NAME hurt
(5409)	/papa mai/ /papa mai/	Pāpā mahi	KIN + B	KIN work
(5410)	/ija waka/	Huia waka	NAME + N	NAME car
(5411)	/anei ija/	anei Huia	EXCL + NAME	here [is something for you], NAME

5.4.4.2 English utterances in Jessica-Lee's production

The majority of Jessica-Lee's two-word production consisted of unilingual English utterances with an underlying structure consistent with typical two-word combinations produced by L1-English children. The examples below represent a selection of the total of 61 unilingual English utterances out of 94 two-word utterances produced by Jessica-Lee in total.

Table 5.9. Selection of Jessica-Lee's typical L1-English two-word production

	Articulation	Interpretation	Structure
(5412)	/ai dæo/	I down	SUBJ + DIR
(5413)	/ai put/	I put	SUBJ + VB
(5414)	/ti:s beibis/	this baby	DET + N
(5415)	/ʒaʒa di/	Lala there	SUBJ + LOC
(5416)	/bi? boi/	big boy	MOD + N
(5417)	/taʔei	go away	VB + DIR
(5418)	/itdis/	eat this	VB + OBJ

Examples (5412) to (5418) all fall into the category of typical two-word L1-English phrases (R. Brown, 1973), and further signal that Jessica-Lee was developing proficiency in English in a manner that is also typical of L1-English children.

Further combinations that Jessica-Lee produced include: a formulaic chunk that she may have learnt as a single-unit holophrase, /a hao hao/ (oh hello), and which she produced when she ‘answered’ a toy phone; an exclamation of disagreement followed by an alternative proposition /nou main/ (no mine); and a term of address combined with a holophrastic utterance /ma: dait/ (mum, don't). These indicate that she was acquiring specific, recurrent utterances from her *whānau*, and that she was using language for a variety of communicative functions that she heard others use.

5.4.4.3 Mixed utterances in Jessica-Lee’s production

The data reveals that Jessica Lee used mixed-vocabulary utterances regularly, with 11 of her 94 two-word utterances made up of one English and one Māori word. These are shown in Table 5.10.

Table 5.10: Jessica-Lee’s mixed utterances

	Articulation	Interpretation (Eng Mao)	English translation
(5421)	/nai nɔnɔ/	my nono	my bottom
(5422)	/na kaka/	no kaukau	no bath
(5423)	/ai kai/ /akai/	I kai	I eat/food
(5424)	/ma patejo/	my patero	my fart
(5425)	/nou wai/	no wai	no water
(5426)	/nou pou/	no pau	no all gone
(5427)	/ne kae/	no tūtae	no poo
(5428)	/je mamae lala/	yeah, mamae Lala	yeah, Lala hurt
(5429)	/jea mamae/	yeah, mamae	yeah, hurt
(5430)	/a tuwi:/	I TV/tiwi	I TV
(5431)	/a wai/	I wai	I water

As with Jessica-Lee’s English utterances and many of her Māori-vocabulary utterances, all the mixed-vocabulary items fall into the category of typical two-word English phrases described in 5.3.4.1 above. The significance here is that this is the persistent underlying syntax, regardless of Māori, English or mixed vocabulary. In other words, Jessica-Lee’s principal syntax of choice, as well as her vocabulary of choice, appears to be English. Furthermore, Jessica-Lee’s

choice of syntax leans even further towards English than her vocabulary, which underlines her choice of English as her principal first productive language.

Additionally, there are possible instances of blended words in Jessica-Lee's production. There are three possible examples: the first is /amain/, which could be Māori *homai* 'give [to me]', or English ...*mine*, or a blend of both; the second is /pupu/, which could be either *bubble* or the second half of *koropupū* 'bubble', or a blend of both *bubble* and *koropupū*; and the third example is /a wail/, where *a* may be 1sg in either English *I*, or Māori *au* 'I/me', or a blend of the two. However, these examples are not as clear-cut as other mixed utterance examples in Jessica-Lee's production, and therefore add nothing of note to my findings.

5.4.4.4 Paired utterances and translation in Jessica-Lee's production

Both children in the study produced consecutive bilingual versions of an utterance, what I term 'paired utterances'. This is illustrated in Jessica Lee's utterance *mamae hurt*. Here Jessica-Lee used first the Māori and then the English form to express, and perhaps to reinforce, a concept. This is a distinctly bilingual feature of both Jessica-Lee's and Puhī's language and, although it is unclear what communicative functions these pairings had, they underline both children's BFL socialisation and acquisition.

5.4.5 Other features of Jessica-Lee's language choice

Jessica-Lee asserted her choice of English over Māori on at least one occasion. For example, Cameo 5.5 illustrates an event in which Māmari and Jessica-Lee engaged in cross-language word play, in which Māmari advocated the use of te reo Māori, and Jessica-Lee her choice of English.

Cameo 5.5. Asserting language choice

Age 1;11;2

3:00	<p><i>Māmari reaches for Jessica-Lee's sleeve and notices that Jessica-Lee's cardigan is wet.</i></p> <p><i>Māmari</i> Oh, ka mākū koe. Ha [ingressive] Kua māku koe.</p> <p><i>Jessica-Lee</i> /jea/</p> <p><i>Māmari</i> [imitates] Yeah</p> <p><i>Māmari</i> undoes Jessica-Lee's buttons.</p> <p><i>Māmari</i> Ka tangohia tēnei ok?"</p> <p><i>Jessica-Lee</i> /kei/ /puts/ [ok. Wet]</p> <p><i>Māmari</i> Ae. Mākū [translates for Jessica-Lee]</p> <p><i>Jessica-Lee</i> /wet^h/</p> <p><i>Māmari</i> Mākū.</p> <p><i>Jessica-Lee</i> /mʌ^h/</p> <p><i>Māmari</i> Mākū.</p> <p><i>Jessica-Lee</i> /wet^h/</p> <p><i>Māmari</i> leans over Jessica-Lee to undo buttons.</p> <p>Both continue to repeat, whispering. It becomes a game, and delivery becomes faster:</p> <p><i>Māmari</i> Mākū.</p> <p><i>Jessica-Lee</i> /wet^h/</p> <p><i>Māmari</i> Mākū.</p> <p><i>Jessica-Lee</i> /wet^h/</p> <p><i>Jessica-Lee</i> /wet^h/</p> <p><i>Māmari</i> Mākū.</p> <p><i>Jessica-Lee</i> /wet^h/</p> <p><i>Māmari</i> Mākū.</p> <p><i>Jessica-Lee</i> /wet^h/</p> <p><i>Māmari</i> Mākū.</p> <p><i>Jessica-Lee</i> /wet^h/</p> <p><i>Māmari</i> undoes final button of Puhī's cardigan.</p> <p><i>Jessica-Lee</i> /wet^h/mut^hu/ /wet^h/ <wet mutu/mākū wet></p> <p><i>Māmari</i> Anei, anei.</p> <p><i>Jessica-Lee</i> /wet^h/</p> <p><i>Māmari</i> takes Jessica-Lee's cardigan off and Jessica-Lee reaches into sink, Māmari walks away with cardigan.</p> <p><i>Jessica-Lee</i> /tætu/ (thank you)</p>
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Māmari responded to Jessica-Lee's use of an English word with the Māori equivalent, which triggered an ensuing English-from-child, Māori-from-adult interchange that appears to be both a game and a battle of wills, with language choice as the ante. Jessica-Lee apparently knew the words for this concept in both languages, i.e., *mākū* and *wet*, but chose to continue with the English word

she used first, over the Māori word that Māmari encouraged her to use. In addition, since Māmari regularly translated Jessica-Lee’s English utterances into Māori, Jessica-Lee may also have perceived that translating another person’s speech is adult-acceptable. This can perhaps be compared with the paired utterances discussed in 5.3.4.4 and in 5.4.4.5. Cameo 5.5 illustrates that Jessica-Lee understood concepts across both languages, and that she asserted her own language choice when she translated Māmari’s Māori utterance into English. Cameo 5.6 further illustrates these two things as she chose to respond in English to a question asked by Māmari in Māori.

Cameo 5.6. Answering in English

Age: 22;2

<i>Ma</i>	<i>Ka tini au i tō kope? <Shall I change your nappy?></i>
<i>Jessica-Lee</i>	<i>/nou/ <no></i>

Cameos 5.5 and 5.6 illustrate events in which Jessica-Lee asserted her language choice while exploring and playing with her two languages. They provide further evidence that she was exercising agency in her use of English over Māori.

5.5 Further discussion

My analysis of the productive data has shown that the two children in the study produced utterances with vocabulary and structures from both Māori and English. They produced mixed and paired utterances, which provide evidence of their bilingual socialisation through and into their two languages. However, my data shows that they were developing in quite different ways and with quite different productive results. Jessica-Lee’s two-word production between 21;0 and 24;2 was mostly English, and Puhi’s two-word production between 20;0 and 24;0 was almost all Māori. This corresponds to the pattern I observed that the majority of Jessica-Lee’s *whānau* members spoke to her in English and the majority of Puhi’s *whānau* members spoke to her in te reo Māori.

A comparison can be drawn with de Houwer's (2009) finding that, in two-parent households where both parents spoke the majority language at home and one parent also spoke the minority language, far fewer children spoke the minority language as well as the majority language (see 2.4). If de Houwer's findings are transferable beyond two-parent households, and across languages, then a hypothesis can be drawn that the numbers of adults who use the minority language with a BFL child is a significant factor in that child's productive use of the minority language.

Focussing beyond the number of speakers to the part played by the social context of the children's language environments, my data showed that *whānau* language-socialisation mechanisms included IDT registers that shared the characteristics of high-pitch, exaggerated-prosody and te reo Māori. Given that most adults who used te reo Māori with the infants seldom used it with adults, it is possible that children perceived te reo Māori as a just-with-babies language feature. This might have contributed to Jessica-Lee's choice of English, which can be viewed as the register used with everyone else in the *whānau* other than the youngest child (Jessica-Lee).

This analysis has provided snapshots of two children's language environments and production in their home lives. I have argued that the children in my study demonstrated agency in making a clear language choice. It is possible that the individual agency that each child demonstrated by 24;0 may lead either or both children to change their principal productive language at a later date. However, the English-dominant communities of both children indicate that their worlds are likely to include more English-only speakers as they grow, and evidence is gathering that majority/minority BFL children "may all acquire the dominant language regardless of home language patterns", while acquisition of the minority language is less certain (Gathercole & Thomas, 2009, p. 233).

5.6 Summary

My analysis in this chapter has focussed on the input languages in my two case-study children's environments, and on each child's two-word production. Careful comparison of the input data sets has pinpointed that the two most similar conditions across the two *whānau* were (a) that the mothers of both children spoke directly to their infants in te reo Māori almost all the time, and (b) that the ambient language, i.e., among adults, and among older children and adults, was English most of the time. Aside from these two conditions, there were significant differences between the children's language environments. For Puhi, there were multiple adult- and child-speakers of te reo Māori in her homes and in Kōhanga Reo, and te reo Māori was the most frequent language used directly to her by adults and older children. By contrast adults and children in Jessica-Lee's life used predominantly English directly with her, including her day-time caregiver.

My linguistic analysis of the two-word data sets revealed that each child made a clear choice of principal first productive language, which corresponded with the language used by the majority of *whānau* members directly to each child. This finding has important implications for BFLA and for the revitalisation of te reo Māori because it directs attention to two sites: first, to the role of multiple speakers in supporting a child to choose to use te reo Māori productively; and second, to the role of infant-directed talk as a language-socialisation mechanism.

My linguistic analysis of the two-word data sets showed that both children produced some Māori two-word combinations that approximate the typical (PART +) B (+ MOD) structure of the basic phrase unit of te reo Māori. In particular, this was the predominant structure in Puhi's production. This is the first record of the early appearance of this structure in the productive language of children learning L1-Māori, and as such it contributes to our understanding of

the importance of this structure in te reo Māori. In addition, it illustrates the early acquisition of a structure that is particular to te reo Māori and supports the notion that children target language-specific structures (Slobin, 1982).

Both children produced some content + content combinations in te reo Māori that show similarities to the phrases typical of those of young L1-English children. Significantly, many of Jessica-Lee's Māori-vocabulary utterances, and all of her mixed-vocabulary utterances showed this pattern, whereas most of Puhī's two-word Māori structures approximated (PART +) B (+ MOD) phrases, and all but one of Puhī's combinations were consistent with the word order of te reo Māori. This suggests that Jessica-Lee was mostly combining words according to an underlying English syntax, while Puhī was combining words according to an underlying Māori syntax. This finding has further implications for te reo Māori revitalisation, as it underlines the importance of an environment in which multiple speakers can support children's early acquisition of Māori syntax as well as vocabulary.

Puhī's principal first productive language was Māori, which reflected the predominance of IDT input in te reo Māori, despite the predominance of English as the ambient language in her environment. Jessica-Lee's principal first productive language was English, reflecting the over-all predominance of that language in her environment.

Since the focus of this study is on Māori language socialisation, the remainder of the thesis focuses on data collected from Puhī and her family. Chapter 6, which follows, presents a language-socialisation analysis of the data gathered from Puhī and her *whānau* across 39 months from Puhī's birth. The aim is to examine the language socialisation of this child, and to articulate aspects of her socialisation towards fuller participation in communicative practices as a member of her MEB *whānau* and community.

Chapter 6: Language-socialisation analysis

Āpiti hono, hei tātai hono
Side by side, and joined as one

6.0 Introduction

This chapter addresses my first major research question: *How does Māori language socialisation occur for two children growing up in Māori-English bilingual environments?* I use Wortham's (2005) concept of "trajectories of socialisation" across "timescales" (see 2.5.1 and 2.5.2) to describe one child's socialisation through and into recurrent cultural communicative practices and kinship roles and relationships, as she moved from novice participation at birth to fuller participation with growing responsibilities within her *whānau*.

In analysing my data to answer the research question above, I began with the assumption that Puhi's *whānau*, like families and communities the world over, expected her to become a proficient communicator. That is, they expected Puhi to come to use such tools as language, gaze, and movement in the manner in which these human universals were combined into communicative practices that were culturally and situationally coherent to her *whānau* and community. Cultural communicative practices were dependent on both a *tikanga Māori* (TM) socio-historical timescale and an Anglo-colonial socio-historical timescale (see 2.5.2.), and therefore involved both te reo Māori and English. Stemming from these timescales and languages, and the intersections between them, was a local timescale upon which *whānau* communicative practices were dependent. Thus, *whānau* had their own understanding and expectations of the pathway that led to proficiency in communicative practices, and their own ways of guiding Puhi towards achieving proficiency (Schieffelin & Ochs, 1986).

My first focus in this analysis was to identify recurrent communicative practices in Puhi's *whānau*, and to identify *whānau* expectations in regard to those practices across a local timescale. My second step was to identify key signs and events in which Puhi participated across an interactional timescale and across her own developmental one (which Wortham (2005) calls the ontogenetic timescale). Third, I sought to show how those signs and events linked together to reveal her socialisation trajectories through and into the identified communicative practices; and through and into *whānau* roles, responsibilities and values.

6.1 Data scope and sources

6.1.1 Scope of data

The analysis in this chapter considers data gathered from just one of the two children in my study. This is because, as the analysis presented in Chapter 5 showed, just one child, Puhi, chose Māori as her principal productive L1. Thus it was Puhi who exemplified a case where the revitalisation goal of natural intergenerational transmission was achieved to some extent. Gaining insight into how this occurred is the basic intention of my first research question. For this reason, I focus solely on Puhi's socialisation in this chapter.

6.1.2 Sources of data

The data presented in this chapter are primarily from weekly video recordings that were collected over a period of 39 months, beginning when Puhi was six weeks old. "Diary" notes, "interview", "unsolicited comment", "Facebook" posts, and *whānau* videos and photos provided supplementary data.

6.2 Analytic concepts

The fundamental analytic concept used in presenting the data in this chapter is the socialisation trajectory (Wortham, 2005). As discussed in section 2.5.1, the term "trajectory" denotes a progression or advancement along a pathway with

signs along the way. Isolated signs and events may appear insignificant when analysed individually, but when plotted together with other signs and events, each contributes to a structure or “trajectory” that emerges over time. I establish trajectories that show Puhi’s socialisation through and into three key recurrent communicative practices and their associated roles, and that show her socialisation through and into *whānau* values and practices. I therefore discuss a total of four socialisation trajectories in this chapter, structured around the following communicative practices:

- Participating by initiating interaction: *kōrero mai*;
- Participating with eyetalk: *titiro*;
- Participating with music: *kapa haka*.

The three communicative practices are discussed as separate trajectories in this chapter for the purpose of clarity. However, in Puhi’s life all three practices were interwoven in the larger structure of her trajectory of socialisation through and into the ways of being in her *whānau*. In addition, signs and events that indicated the first three trajectories also indicated Puhi’s socialisation through and into kinship connections, roles and responsibilities and the organisation of these in participatory arrangements. This interweaving becomes evident in the fourth trajectory discussed in this chapter, which is about:

- Participating in kinship roles and relationships: *Whanaungatanga*.

Puhi’s participation in any given situation was dependent on kinship connections between her and other participants. From birth she participated in such relationship roles as *teina* and *mokopuna*. The fourth trajectory is constructed around signs and events that show Puhi accumulated further roles and responsibilities over time as she gained proficiency in the communicative practices and dynamics of her *whānau*. For example, eye talk is integral to the practice of “*kōrero mai*” (see 6.3), and interaction is integral to the practice of the *pūkana* form of eye talk (see 6.4). Rhythm, movement, *pūkana*, and

initiating interaction are evident in Puhi's socialisation trajectory towards *kapa haka*. When Puhi involved herself in *waiata haka tautoko* 'songs/haka of support' at two *whānau* events (see 6.6), the interweaving of the communicative practices, and therefore of the four trajectories, became evident. All four of the trajectories described in this chapter are interwoven with Puhi's trajectory towards proficiency in te reo Māori, which is the subject of Chapter 7.

In establishing trajectories I use examples from my data to illustrate the pathways that Puhi's *whānau* expected her to follow (the "expected pathways") and to show Puhi's actual socialisation towards becoming a proficient communicator and responsible *whānau* member.

6.3 Participating by initiating interaction: the *kōrero mai* trajectory

The first recurrent communicative practice I discuss is the way in which Puhi's *whānau* interacted with infants. The expected pathway in developing proficiency with this practice involved Puhi accumulating the following participant roles, which are described in 6.3.1 to 6.3.4.

addressee/observer/overhearer → protospeaker → respondent/initiator → speaker

Kōrero mai 'talk to me' is the term I use to refer to a pattern that was evident in my data each time Puhi was greeted amidst a group of *whānau* members. It was characterised by:

- Close face-to-face proximity: the initiator moved his or her face towards Puhi's face;
- Facial gestures: the initiator used exaggerated facial gestures, including broad smiles and wide-open eyes (*pūkana*) to coordinate and maintain eye contact with Puhi;
- Language: the initiator talked to Puhi using high pitch and exaggerated prosody, and using short, formulaic utterances such as greeting phrases and imperatives;
- Affectionate face-to-face touch: the initiator kissed Puhi, or did *hongi* with her;

- Pass-the-parcel: in greeting situations, initiators passed Puhi on to the next waiting person, and the pattern was repeated over and over. Thus, the ostensibly dyadic interactions were embedded in a multi-party greeting situation.

Analysed with reference to academic research, the “*kōrero mai*” pattern has distinct similarities to patterns of interaction that have been documented in other cultures. Wide-eyes and smiles are well documented as features of interactions with infants in many cultures (Chong, Werker, Russell & Carroll, 2003). Equally, the IDT used with Puhi shared some characteristics with “baby talk” or “motherese” observed in other cultures (Baldwin & Meyer, 2007; Ferguson, 1964; Fernald, 1985; Fernald & Morikawa, 1993; Fernald & Simon, 1984). Analysed across a *tikanga Māori* (TM) timescale that referenced *hapū* and *iwi* traditional practices, the *kōrero mai* pattern had features that were particular to Puhi’s Māori-English bilingual *whānau* context. Notably, the language of *kōrero mai* was mostly te reo Māori, (see 5.3.1); the wide-eyed expressions were identifiable as *pūkana* (see 4.2.2.4 and 6.4); and the recurrent *kōrero mai* was comparable with the formal communicative practice of *hohou rongo*, and with informal *whānau* and *hapū* greeting practices.

Table 6.1 illustrates features of *kōrero mai* that are shared with infant directed interaction patterns that have been identified in other cultures. It also illustrates that the *kōrero mai* practice in Puhi’s *whānau* shares features with the formal *hohou rongo* greeting practice, and with informal *whānau* greetings. Puhi experienced all three greeting practices over the course of the study and their similarity meant that she was socialised through and into using these practices, and expected to become proficient in them. This was made explicit in a statement by Kui: “They have to learn how to do it [greet people] properly” (Mereana Winterburn, unsolicited, September 2012). The examples in 6.3.1 to 6.3.3 illustrate how the *kōrero mai* practice recurred in the interactions that *whānau* members initiated with Puhi, and how *whānau* members encouraged her along the expected pathway.

Table 6.1. Features of *kōrero mai* interactions

Communicative practice	Features
Interacting with infants in other cultures	Eye contact (Meltzoff & Moore, 1998) Smiling and wide eyes (Chong et al., 2003) Dyadic interaction (Bronfenbrenner, 1979) Multiparty interaction (de León, 2012) Baby talk (Ferguson, 1964) (see also Chapter 2).
1. <i>kōrero mai</i> Interacting appropriately with infants in the <i>whānau</i>	Interactions with Puhi as an infant involved: eye contact, smiling, <i>pūkana</i> , close face-to-face proximity and physical contact; te reo Māori IDT with formulaic language and high pitch; dyadic interactions, often successive and within a recurrent multiparty practice such as an informal <i>whānau</i> greeting.
2. <i>Whānau</i> greetings	Informal greeting practice in <i>whānau</i> situations involved: eye contact, physical contact, te reo Māori greeting phrases, dyadic interactions, often successive and embedded within a recurrent formulaic multiparty <i>whānau</i> greeting practice.
3. <i>Hohou rongo</i> ‘binding in peace’ – part of the ritual of <i>pōhiri</i> (see 4.2.1)	Formal greeting between hosts and visitors that involves: eye contact, close face-to-face proximity and physical contact; te reo Māori greeting phrases; a series of dyadic interactions within a recurrent formulaic multiparty interaction.

6.3.1 Puhi as addressee, observer/overhearer, and proto-speaker

The practice of *kōrero mai* was evident from the moment Puhi was welcomed at birth. Kui-Kata (40), who was one of seven *whānau* members present at the time, described the event in Cameo 6.1.

Cameo 6.1. Puhi’s welcome

Age: 0;0

<p><i>Kui-Kata</i> <i>Ka awhi atu, ka kihi, ka kihi, ka kōrero atu. Tēnā koe. Nau mai ki tēnei ao. Kia ora. <We embraced her, kissed her, kissed her [again] and said to her, “(Lit.) There you are. Welcome to this world. Be well.”></i></p>

The new-born Puhi was passed from person to person around the room, and welcomed in successive interactions with eye contact, close face-to-face proximity, affectionate touch (kissing, *hongī*, holding and hugging), and infant-

directed talk (IDT) in te reo Māori that included formulaic greetings, such as *kia ora*. This occurred against a background of *whānau* members interacting among themselves. Puhi's socialisation into *whānau* communicative practice was thereby begun with a series of dyadic interactions that occurred as part of a larger multiparty interaction. Her status as a valued young *whānau* member was confirmed, and was thereafter communicated repeatedly, every time *whānau* gathered. Any young infants present, including Puhi, were passed from person to person and greeted, just as Puhi was greeted at birth. Adults and *tuākana* greeted each other predictably: with eye contact, close face-to-face proximity, and affection (e.g., by kissing, *hongi*, and hugging), and te reo Māori greeting phrases.

The *kōrero mai* pattern was also used with Puhi in non-greeting situations, and an example of this is illustrated in Cameo 6.2, when she was aged 0;6.5.

Cameo 6.2. Early *kōrero mai*

Age: 0;6.5

Puhi is reclining in a propped-up position on Māmā's thighs, with head resting on Māmā's knees. The two are face to face, roughly 30-50 cm apart. Puhi and Māmā make eye contact. Puhi VOCs. Māmā gasps and makes short, high-pitched sounds, imitating Puhi's VOCs

Māmā [voiceless gasp]

Puhi VOC

Māmā /b/ x2

Puhi VOC

Māmā *Nērā?* <is that so?>

Puhi VOC

Māmā [voiceless gasp] *Āe* <yes> [Smiles widely and gasps audibly]

Māmā *Waiata mai, kōrero mai ki a Māmā. Puhi*
<sing to me, talk to Māmā. Puhi.>

Puhi VOC

Cameo 6.2 illustrates that the start of Puhi's *kōrero mai* trajectory is characterised by her participant role as addressee. From her very earliest interactions, Puhi's role was implicitly expressed by her *whānau* addressing her

directly. Māmā’s imperatives “*Waiata mai, kōrero mai ki a Māmā*” ‘sing to me, talk to Māmā’ communicated her desire for Puhi to talk back, and explicitly signalled Māmā’s expectation that Puhi’s participation role would (sooner or later) broaden to include that of respondent and speaker. The practice of initiating interaction discussed in this section is named for the *kōrero mai* phrase that Māmā expressed to Puhi in this event.

Puhi’s role as an observer was signalled by her presence when *whānau* members greeted each other. It was confirmed when, for example, Māmā coordinated eye contact with Puhi by moving her face towards her with widened eyes and broad smiles, and talking to Puhi in te reo Māori. This echoed the same pattern that Puhi was greeted with at birth.

In my data there are examples of *whānau* members from age 12;0 to 70+ years using the *kōrero mai* pattern with Puhi. In Cameo 6.3, G-Waiaio (20;1), having only recently reached the status of “speaker” herself, approached Puhi to initiate interaction.

Cameo 6.3 G-Waiaio uses *kōrero mai*

Age: 2;0

Aunt-NikiW is seated on floor with legs stretched in a V and Puhi lying in between. G-Waiaio watches.

G-Waiaio [to Puhi] /hei/ <hey> (high pitch, falling)

G-Waiaio moves nearer to Puhi and says again, louder, with higher pitch, smiling at Puhi and bending forward so her face nears Puhi’s face.

G-Waiaio /hei/ <hey>

G-Waiaio’s actions can be linked with that of adults in the *whānau* in other events. Her use of close face-to-face proximity, smiles, greeting talk (in this case “hey”), and high-pitched IDT, is recognisable as *kōrero mai*, and her direct address to Puhi conveyed an expectation that Puhi would respond.

All members of Puhi’s *whānau*, including the infants themselves, freely interacted with their infant relatives, and young children were encouraged and

guided in this by adults and other children. Accordingly, *kōrero mai* interactions were initiated by *whānau* members of all ages, and their use by even very young children, like G-Waiaio, potentially signals a *whānau* expectation that Puhi, too, would become a fully competent participant by accumulating respondent and initiator roles.

6.3.2 Puhi as respondent and pre-verbal initiator

Puhi's move to the role of respondent was recorded in her second month when. Māmā (unsolicited, 29 November, 2010) commented that Puhi "doesn't usually just talk. If you talk to her, then she'll talk to you." Referring to the smiles and vocalisations with which Puhi responded to *kōrero mai*, Māmā explicitly characterised Puhi as a frequent and vocal respondent who occasionally initiated interaction. Cameo 6.4, illustrates Puhi in a respondent role at 2;0. This is evidenced by Puhi's sustained eye contact and repeated vocalisations in a *kōrero mai* interaction initiated by Māmā. Puhi and Māmā then responded to each other's contributions, and both Pāpā and Māmā interpreted Puhi's vocalisation, valuing it as a contribution to the dialogue and constructing it as a dispute about Puhi's beauty.

Cameo 6.4. Puhi's vocalisation is interpreted

Age 2;0

7:00	Māmā	Ātaahua rawa koe. <you are very beautiful>
7:02	Puhi	VOC [sounds like /kao/ (no)]
	Māmā	[as though Puhi disagreed] Āe! <yes>
	Pāpā	[imitating Puhi] Kāo! <no>
	Māmā	[laughs and acknowledges Pāpā's interpretation] Yeah
	Puhi VOCs long and loud. Māmā laughs, then responds as if there is dispute.	
	Māmā	Āe! Ātaahua koe. <yes! you are beautiful>
	Puhi VOCs repeatedly	

Pāpā's re-statement of Puhi's vocalisation as disagreement set the interaction as a dispute, allowing Māmā to make a lighthearted defence of her own statement regarding Puhi's beauty. The value the two adults placed on Puhi's

contributions signalled Puhi's role as a respondent with an opinion to be considered and debated.

Puhi's non-vocal actions were likewise valued and interpreted as her intention to communicate. This is illustrated in Cameo 6.5, when I (MH) responded to Puhi's intent look by turning to talk with her.

Cameo 6.5. MH interprets Puhi's vocalisation

Age: 3;0

1:00	<i>Aunt-Amo (14) is sitting, holding Puhi facing outwards. MH walks past, and Puhi turns her head towards MH who responds by turning to Puhi,</i>
1:06	<i>MH Kia ora. ++ Kia ora. <hello [rep]></i> <i>Puhi smiles, VOCs (open mouth) /a/ in response and turns her face away then back to MH. MH laughs softly.</i>
1:13	<i>MH [high pitch] Kia ora Puhi, tēnā koe <hello Puhi, how do you do></i> <i>Puhi smiles and VOCs with rising intonation /a::/</i> <i>MH laughs. Aunt-Amo giggles, watching Puhi's face.</i>
1:20	<i>MH [high pitch] Nērā? Nērā? <is that so? [rep]></i>

Puhi followed me with her eyes as I walked past, and this, combined with my response led to us making eye contact. A *kōrero mai* interaction followed, in which I moved towards Puhi, and spoke to her using formulaic greeting phrases. At 1:20, I responded to Puhi's vocalisation with the holophrase *nērā* (see 7.4.4.2), which acknowledged Puhi's comment and requested further comment or response from her. Cameos 6.4 and 6.5 illustrate instances when *whānau* members interpreted Puhi's actions and vocalisations, and constructed dialogue based on those interpretations, which promoted Puhi's progression towards fuller participation.

Five months later, aged 8;2 and still preverbal, Puhi's own use of the *kōrero mai* pattern signaled that she had moved into the role of initiator. This is illustrated in Cameo 6.6.

Cameo 6.6. Puhi engaging Aunt-Amo

Age 8;2

3:14	<i>Puhi makes eye contact with Aunt-Amo. Puhi smiles broadly, raises her eyebrows, and fakes laughter. Aunt-Amo maintains eye contact and laughs. Puhi fakes laughter again, turning to smile, laugh at, and make eye-contact with MH (behind camera), who chuckles. Puhi turns back to Aunt-Amo, and stops smiling to 'talk':</i>	
	<i>Puhi</i>	<i>VOC [brief vowel]</i>
	<i>Aunt-Amo</i>	<i>[echoing Puhi] /e/</i>
	<i>Puhi</i>	<i>VOC [as previously]</i>
3:31	<i>Aunt-Amo</i>	<i>/e/...</i>

Cameo 6.6 illustrates the collaborative give-and-take of various communicative practices that Puhi was acquiring. The wordless, vocal turn-taking between Puhi and Aunt-Amo signalled Puhi's understanding that coordinating attention was a substantial part of initiating conversation. It indicated her understanding of the shape of a conversation and her growing proficiency with the *kōrero mai* pattern. However, Puhi's liberal use of laughter distinguished her own personal interaction-initiation practice and signalled it as her own. My fieldnotes record my observation of Puhi's strategic communicative practice:

[Puhi, age 8;2] seems to deliberately set about encouraging people to laugh with her by laughing at them... she employs a 'put-on' or fake laugh, ...which her interlocutors respond to, sometimes with their own 'put-on' laughs at first, but which usually escalate to real laughter from all concerned. She invariably manages to draw others present into the gaiety, even a roomful of people. (Diary, 20 June, 2011)

Whānau laughed with Puhi, and characterised her as "funny", "cute" and "a crack-up" (Diary, 20 June, 2011). Thus they sanctioned her laughter as within the norm of, or an accepted divergence from, the expected pathway.

By 8;2, then, Puhi had appropriated the eye contact, smile, and talk components of *kōrero mai*. She made *kōrero mai* her own by adding exaggerated laughter, which she found to be highly effective at coordinating mutual attention in order to initiate interaction. She had followed the expected *whānau* socialisation pathway by assuming the roles of addressee, respondent,

and “pre-verbal initiator” with older *whānau* members. However, it was another two months before clear evidence emerged that she had also appropriated this role in interactions with younger infants. This occurred at a *whānau* gathering at which a two-month-old infant was present and in a position on the floor where Puhi (10;2) was able to approach her. Cameo 6.7 illustrates Puhi’s attempts to initiate interaction with the infant.

Cameo 6.7. Puhi initiates *kōrero mai* with younger baby

Age 10;2

Puhi is kneeling on the ground next to baby (2;0) who is in a car seat on the floor, in front of Aunt-Rotana (19). Puhi looks at baby’s face, squeals... leans over baby and smiles at her.

Puhi /e e e/ [rise, fall pitch]

Puhi leans in to kiss the baby.

Puhi moved her face toward the infant, smiling and staring intently at the infant’s face in an attempt to make eye contact, then ‘talked’ to the infant. This is the same pattern that *whānau* members had used with Puhi since her birth, and the event signifies that Puhi had attained the role of initiator as a *tuakana*, though not yet with words.

Puhi also continued with her respondent role, and while it was acceptable for her to respond minimally at a young age, she was increasingly encouraged to respond fully. For example, at her first birthday party, many attendees greeted her. In some cases she responded with looks and smiles. In Cameo 6.8, Puhi acted in her respondent role by making eye contact with Koro-Leon (70+), but refused to engage further with him. Koro-Leon tacitly signalled his expectation of further engagement with his facial expression, gesture and verbal invitation. He then registered his disappointment at her minimal response by looking sad, and completed the *kōrero mai* interaction by kissing Puhi on the cheek. She did not respond visibly to the kiss, perhaps because it was a usual, and therefore expected gesture. The *whānau* accepted that Puhi, at this young age, would not always respond according to the accepted practice. Nevertheless, *whānau*

expectations of Puhi in her role as respondent were both explicitly and tacitly communicated. Likewise, the expectation of her progression into the role of speaker was communicated, and *whānau* encouraged her progress towards that role.

Cameo 6.8. Kōrero mai with Koro-Leon

Age: 12;0

1:30	<p><i>Around seventy whānau members are present. Some are sitting, some milling around. I mill around too, carrying Puhi. Koro-Leon approaches, and smiles at Puhi. He steps towards her, holding his hands open for her to come to him. She looks at his face and makes eye contact. I turn her towards Koro-Leon, who smiles and again presents his hands to her, saying:</i></p> <p><i>Koro Haere mai. <come to me></i></p> <p><i>Puhi makes eye contact briefly with Koro-Leon, who makes a sad face. Puhi turns her head and leans towards MH, away from Koro-Leon. MH kisses her L cheek. Koro-Leon kisses her R cheek, and moves away.</i></p>
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6.3.3 Puhi as speaking initiator

Puhi's move to a speaker role was in part accomplished through the willingness of *whānau* members to interpret her vocalisations as words as early as age 2;0. By her twelfth month, Puhi's parents reported that she was saying both *Māmā* and *Pāpā*, signalling their characterisation of her as a speaker. Cameo 6.9 illustrates how Puhi used another kinship term *Nēni*, incorporating it into her approach to initiate a *kōrero mai* interaction.

As she neared me (3:46), Puhi implemented the *kōrero mai* pattern of eye contact, face-to-face proximity, smile, touch, and talk. She persisted with her attempt to coordinate eye contact by bending over and moving her face very close to mine, while smiling and saying /*næne*/. By interpreting and restating Puhi's word as *Nēni*, I ratified her speaker status and acknowledged her contribution as appropriate. When the pattern was completed with a kiss at 3:50, Aunt-Amo and I sanctioned and promoted Puhi's actions by smiling and vocalising softly.

Cameo 6.9. Initiating eye contact with Nēni

Age: 12;3

3:39	<p><i>MH is lying on her side. Puhi stands behind MH. She leans over MH's hip, looking intently at MH's face, and VOCs:</i></p> <p><i>Puhi /wu.u:/ [high pitch, falling]</i></p> <p><i>MH [echoes Puhi's VOC and intonation] /wu.u:/</i></p> <p><i>Puhi smiles and VOCs in response, watching MH's face as she moves closer to it, supporting herself by holding on to MH's clothing. Puhi and MH repeat previous VOC simultaneously. They both smile and make eye contact. Puhi leans over, moving her own face towards MH's.</i></p> <p><i>Puhi VOC /næne:/ (Nēni)</i></p>
3:46	<p><i>MH (echoes and restates) Nēni.</i></p> <p><i>MH purses lips, kisses the air saying:</i></p> <p><i>MH Kihi</i></p> <p><i>Puhi kisses MH on lips.</i></p>
3:50	<p><i>MH & Aunt-Amo [simultaneously] Aa.</i></p> <p><i>Puhi smiles at Aunt-Amo, turns back to MH face, leans over and kisses MH x 2.</i></p>

6.3.4 Summary of Puhi's kōrero mai trajectory

The *kōrero mai* trajectory was concerned with how *whānau* initiated interaction with infants, and Puhi's growing proficiency with that communicative practice. At birth, Puhi was an addressee and observer who was expected to become proficient with *kōrero mai* and to move into initiator and speaker roles within the practice. From her birth, she gained experience each time *whānau* interacted with her, and with other infants in her presence. *Whānau* members guided Puhi's movement along the expected pathway by encouraging her to observe, and to engage and maintain eye contact by using exaggerated facial gestures such as broad smiles and eye talk, including *pūkana*. They promoted the language of *kōrero mai* by using greetings, and other short, high-pitched, formulaic phrases. They encouraged Puhi's vocal responses by interpreting and restating her vocalisations, which allowed them to construct dialogue with her. They addressed her with imperatives, used question tags, and debated what they constructed as her opinion.

Puhi's trajectory of socialisation in the cultural communicative practice of *kōrero mai* mostly followed the expected *whānau* path. She became familiar with the components of *kōrero mai*, and gained increasing competence in them. She built up her repertoire as an initiator, so that by 8;2 she was effectively using her eyes, voice, and laugh to initiate and maintain interaction. While still preverbal, Puhi began initiating interactions with older and younger *whānau* members using the pattern of *kōrero mai*. She became a competent practitioner, appropriating the pattern and making it her own with, for example, the addition of exaggerated laughter that she found effective in drawing people's attention. *Whānau* members' interpretations of her 'talk', continued seamlessly across her preverbal months and into her newly verbal period in her thirteenth month. By that time, and in line with her growing proficiency, Puhi had incorporated names and words into her *kōrero mai* practice.

My analysis shows that, while the *kōrero mai* pattern shares similarities with infant-directed communication in other cultures, it was culturally particular to Puhi's MEB *whānau* in three respects. First, the pattern is consistent with patterns of informal and formal greeting that are particular to the *whānau* and to *tikanga Māori*. Thus, Puhi's socialisation trajectory through and into the *kōrero mai* practice was also intertwined with her socialisation into these other culturally particular practices. Second, the *kōrero mai* pattern involved mostly Māori IDT, which linked with Puhi's choice of te reo Māori as her principal first productive language (see Chapter 5). Third, while *kōrero mai* mostly involved dyadic interactions, these were often embedded within multiparty *whānau* interactions. Just as Puhi's dyadic interactions involved joint attention, so her multiparty interactions involved *mataara* 'alert watchfulness' as she simultaneously attended to, and monitored, both kinds of interaction. This indicates that, for Puhi, becoming proficient in dyadic interactions also meant learning to monitor, and become proficient in, the multiparty interactions of her

whānau. Using her eyes to both monitor and communicate was very much part of the expected pathway in Puhī's *whānau*.

6.4 Participating by looking: the eye-talk trajectory

This section focusses on communicative ways of looking, which I term “eye talk”. The expected pathway in developing proficiency in eye talk is for Puhī to accumulate the following roles, which are described in 6.4.1 and 6.4.2.

addressee/observer/proto-eye-talker → keen observer → respondent → eye-talker

Eye talk was as integral to the communicative environment of Puhī's *whānau* as word-talk, and Puhī's socialisation into this practice occurred concurrently with her socialisation through and into using language. Language occurs in a range of culturally embedded, context-dependent situations (Rogoff et al., 1993), and eye talk is no different. Just as a word or phrase can be a component of a range of sentence structures, so too eye-talk forms appeared within patterns of communicative practices, for example, *pūkana* appeared in the *kōrero mai* pattern discussed in 6.3. *Whānau* members were repeatedly captured in my data using eye talk with each other. Four forms of ‘eye talk’ that are described in 4.2.2 are: the glance (4.2.2.1), *matahī* ‘eyebrow flash’ (4.2.2.2), the “evils” (4.2.2.3), *pūkana* ‘wide eyes’ (4.2.2.4). In addition, *mataaara* ‘alert watchfulness’ (4.2.2.5) is also described. Of these, *pūkana* receives most attention in this chapter, because of its distinct use in MEB communities, and because of its interaction with the other trajectories I analysed.

As explained in Chapter 4, the term *pūkana* refers to a cultural communicative practice that involves opening the eyes wide. It is a mechanism by which eye contact is coordinated, and *mataaara* is promoted. Three grandmothers described one function of *pūkana* as follows:

Ka puta te ihi, te wehi, te wana, kia puta te ihi, te wehi, te wana.

[*Pūkana*] expresses awe, excitement and anticipation in order to inspire awe, excitement and anticipation. (Heeni Wilson, Maru Karatea-Goddard & Mereana Winterburn, interview, August, 2014)

As a feature of everyday interaction, the expectation that children would become proficient in using their eyes to monitor, observe, and communicate was mostly tacit. By comparison, the status of *pūkana* as a valued skill in *kapa haka* ‘performing arts’ was explicit. Becoming proficient in using *pūkana* in both everyday interaction and in performance was an expected *whānau* pathway. That trajectory is established in the following sub-sections.

6.4.1 Puhi as addressee, observer and proto-eye-talker

I begin by analysing an event recorded when Puhi was aged 3;0. This event exemplifies two things: first, Puhi’s roles as addressee, observer and proto-eye-talker; and second, Puhi’s early simultaneous participation in multiparty and dyadic *whānau* interactions via *mataara*, eye contact, and eye talk. As illustrated in 6.3, *whānau* members used a variety of facial expressions that involved, for example, close face-to-face proximity, broad smiles, and *pūkana* with and around Puhi from a very early age. Before long, Puhi began to produce some of those facial expressions and by 3;0 she used her eyes in a way that *whānau* members interpreted as “the evils”. Cameo 6.10 illustrates an event when eight *whānau* members were present, including Nēni-Niki (40), Unc-Dela (15), Aunt-Amo (15) and Aunt-Tirangi (16). All were seated on the floor and chairs, encircling and discussing Puhi, who monitored speakers by flicking her eyes from face to face as they interacted.

Unc-Dela’s statement at 0:09 that “she just gave me the evils” characterised Puhi’s micro-second eye contact with Unc-Dela as an intentional message. In response, Nēni-Niki expressed doubt that Puhi would use this sophisticated form of eye-talk, but Unc-Dela insisted with: “She does”, and requested confirmation from others present with the question tag *eh* ‘doesn’t she?’ At 0:14,

Cameo 6.10. “the evils”

Age 3;0.5

0:08	<i>Puhi watches as Māmā talks, then flicks her eyes away and makes momentary eye contact with Unc-Dela.</i>	
	<i>Unc-Dela</i>	<i>Look she just gave me the evils.</i>
	<i>Several of those present chuckle.</i>	
	<i>Puhi</i>	<i>VOC</i>
0:11	<i>Nēni-Niki</i>	<i>She doesn't do evils.</i>
0:12	<i>Unc-Dela</i>	<i>She does, eh?</i>
	<i>More chuckles.</i>	
	<i>Māmā moves her face close to Puhi, smiling, shaking her head, and talking (babble-like), to catch Puhi's attention.</i>	
	<i>Puhi's attention flicks from Māmā to other speakers, and back to Māmā</i>	
0:14	<i>Aunt-Tirangi</i>	<i>Yeah + she done the mean evils to Amo...</i>
	<i>Aunt-Amo</i>	<i>She went [demonstrates look]</i>
0:19	<i>Aunt-Tirangi</i>	<i>[chuckles] Yeah-yeah-yeah-yeah</i>

Aunt-Tirangi and Aunt-Amo both attested that they had earlier witnessed Puhi giving a similar look, which confirmed a shared interpretation of Puhi's eye talk. This interaction requires some further explanation. First, *whānau* used the word *evils* in Cameo 6.10, and also *pūkana* elsewhere in my data as objects to the verbs *do* and *give* in (otherwise) English sentences. For brevity I use the verb *to do* hereafter. Second, this nominal form may function to differentiate a communicative “look” from other kinds of looking. If we compare “she looked” with “she said”, the former does not adequately express that a message is being conveyed in the same way that the latter does. This is significant because the expression “she did the evils” (and variant forms) implies communicative intent, and can therefore be compared to the reporting of speech described by de León (1998). De León observed that Zinacantec caregivers used a “she said” frame when reporting their infants' pre-verbal communicative actions, thus characterising their pre-verbal infants as proto-speakers (p. 138). In cameo 6.10 several of Puhi's *whānau* members agreed that she intended to communicate with her eyes. They were willing to interpret her look as eye talk, in the same

way that Zinacantec caregivers interpreted and reported their infants' actions as proto-talk. By reporting that Puhi "did the evils", Unc-Dela and others characterised Puhi, aged 3;0, as a proto-eye-talker, thus signalling their expectation that she would become proficient at "using her eyes" for specific communicative ends. By addressing each other about Puhi, rather than addressing Puhi herself, they indicated that she had not yet reached full participant status.

Simultaneously with the interaction in Cameo 6.10, Māmā leaned forward so that her face was in close proximity with Puhi's face, and used another form of eye talk, *pūkana*, to interact with Puhi. Cameo 6.11 illustrates their interaction.

Cameo 6.11. Coordinating eye contact using *pūkana*

Age 3;0.5

0:13	<i>Puhi's attention flicks from Māmā to other speakers, and back to Māmā. Māmā smiles at Puhi, saying "Hey." Puhi's eyes flick back to other speakers.</i>
0:18	<i>Māmā widens her eyes in pūkana, and smiles broadly while opening her mouth and gasping audibly.</i>
0:19	<i>Puhi makes eye contact, drawing her eyebrows up and widening her own eyes. Māmā shakes her head, smiling broadly, with eyes crinkled. Puhi's eyes flick away then back to Māmā.</i>
0:22	<i>Māmā draws her mouth down and opens her eyes in pūkana, holding eye contact with Puhi.</i>
0:23	<i>Puhi maintains eye contact, beaming at Māmā and VOC. Māmā [chuckles]Hey.</i>
0:25	<i>Māmā repeats her open-mouthed smile, raises her eyebrows and widens her eyes, and Puhi responds in kind with open-mouthed smile, eyebrows raised and eyes widened, and VOCs</i>

While Puhi monitored the speech and faces of multiple participants engaged in their own multiparty interaction, Māmā expended effort to successfully engage and momentarily sustain Puhi's attention. At 0:18, 0:22, and 0:25, Māmā employed a variety of facial expressions as mechanisms to hold Puhi's attention. At 0:23 and 0:25, Puhi responded to Māmā's *pūkana* by widening her own eyes and smiling. At 0:24 the video shows Puhi's face mirroring her

mother's facial expression for a brief moment. Puhi's repeated experience with these facial expressions in *kōrero mai* interactions over her first three months gave her ample opportunity to appropriate the expressions herself.

From very early in life, then, *whānau* members expected Puhi to communicate with her eyes. They characterised her as a proto-eye-talker by describing her facial expressions in a "she does [a communicative look]" frame, and by interpreting her look. This frame explicitly signalled eye talk as a recurrent communicative practice in the *whānau*. Concurrently, Māmā used *pūkana* as a socialising mechanism to coordinate mutual attention and promote keen attention with Puhi, and thus was also promoting *pūkana* as a communicative feature to her. In the following months, Puhi's experience with *pūkana* in everyday *whānau* interactions continued, and her participant status as both an addressee and respondent moved ahead.

6.4.2 Puhi as observer and eye-talk respondent

Whānau members promoted *pūkana* during moments of eye contact in everyday interactions. Often, these moments were also coordinated and held by an adult or *tuakana* using *pūkana* and other eye talk.

Analysed as isolated events across an interactional timescale, the wide-eyed facial expressions illustrated below could be taken for similar expressions used with infants in other cultures, and their significance in Puhi's socialisation missed. However, when contextualised across a TM timescale (see 2.5.2), and analysed together with other *whānau* and community events in a local *whānau* timescale, wide-eyed facial expressions are identifiable as *pūkana* (see 4.2.2.4). The significance of each isolated event emerged as each contributed to a "poetic structure' of signs and event-segments" (Wortham, 2005, p. 98) that defined Puhi's trajectory of socialisation towards "using her eyes" in ways that were consistent with the norms of her *whānau*. What follows is a selection of examples, taken from Puhi's first year and presented in chronological order.

The first example illustrates an interaction between Aunt-Amo (14), Puhi (5;3), and me during which Puhi stood on a couch next to me, while Aunt-Amo played peek-a-boo with her from behind the couch.

Cameo 6.12. Peek-a-boo

Age 5;3

0:08	<p><i>Aunt-Amo pops up from behind the couch with a smile and a gasp, but Puhi has turned her head to look at MH.</i></p> <p><i>Aunt-Amo Oh she's not looking [chuckles]</i></p> <p><i>Aunt-Amo ducks down again.</i></p>	
0:12	<p>Figure 6.1: Glance to right</p>	<p>Figure 6.2 Pūkana</p>
	<p><i>MH makes eye contact with Puhi, glances right, towards Aunt-Amo and back to Puhi, and does a pūkana, saying:</i></p> <p><i>MH Ko wai tērā? <who is that?></i></p>	
0:13	<p><i>Puhi turns back towards Aunt-Amo, smiling.</i></p>	

In Cameo 6.12, Puhi coordinated eye contact with me by turning her head towards me and smiling. As we make eye contact, I glanced, then did *pūkana* in an eye-talk interaction with Puhi. I offer verbal translations of the eye talk illustrated in Figures 6.1 and 6.2, to give the reader insight into possible eye-talk messages. My glance sideways conveyed a message similar to, “look over there [at Aunt-Amo]”, thus coordinating our joint attention (Tomasello, 1988). It also promoted observation of others in a multiparty interaction. My *pūkana* to Puhi indicated, “Watch! This is exciting”, and promoted *mataara* ‘alert watchfulness’, keen observation and heightened interest in the game. As the addressee and respondent in the interaction, Puhi responded to my

glance+*pūkana* eye-talk by smiling and attending to me, bouncing enthusiastically, then returning her attention to Aunt-Amo.

In Figure 6.3, below, Puhi (age 8;2) was again a *pūkana* addressee. Aunt-Amo used *pūkana* at least eight times over a one-minute period in expressions of mock-excitement and mock-surprise, and while smiling. In her role as respondent, Puhi maintained eye contact with Aunt-Amo, smiled, laughed, and produced short vowel vocalisations.

Figure 6.3: Mock surprise

Age: 8;2

Immediately following Aunt-Amo's mock surprise look, shown in Figure 6.3, Puhi used the *kōrero mai* pattern as she re-engaged Aunt-Amo in the interaction described in Cameo 6.6. Within that pattern, Puhi raised and lowered her eyebrows in quick succession in a micro-second action, while smiling and maintaining eye contact with Aunt-Amo.

There are at least three ways to interpret Puhi's eyebrow-raise in this event. First, eyebrow-raising is a necessary component of *pūkana*, so it is possible to read this event as a sign of Puhi's developing competence in *pūkana*. Second, eyebrow-raising is a necessary component of *matahi* 'eyebrow flash' (see 4.2.2.2), and therefore it is also possible to read the event as a sign of Puhi's developing competence in *matahi*. A third possibility is that Puhi was experimenting with eye-talk components, just as she was experimenting with

language components, such as vowels and prosody, at around this age (see 7.5.2). The significance of this *matahī* event is that it is a link in a chain of similar facial gestures and actions. Puhi's use of *matahī* to successfully coordinate eye contact and initiate an interaction with her aunt additionally signals an overlap between her *kōrero mai* and eye-talk trajectories.

Cameo 6.13. *Pūkana* to hold infant's attention

Age 8;2

Puhi is tiring, she blinks, rubs her eyes and rests her head on her arm.

MH *Kua ngenge a Puhi. <Puhi is tired>*

Puhi pushes herself backwards suddenly and laughs, seeming to want to keep herself awake. Aunt-TeAtawhai makes eye contact with Puhi, laughs, frowns and smiles in quick succession, saying:

Aunt-TeAtawhai Nērā? Tika tēnā? <really? is that right?>

Aunt-TeAtawhai teases Puhi by imitating Puhi's laugh and tilts her head back to pūkana, maintaining eye contact.

Figure 6.4: *Pūkana* with tease

Aunt-TeAtawhai Haere koe ki te moe? <you go to sleep?>

Puhi had further experience of *matahī* and *pūkana* over the following months. Cameo 6.13 and Figure 6.4 illustrate both of these functions, when Aunt-TeAtawhai employed a full-face, performance-like *pūkana* expression to catch and hold a tiring Puhi's attention. This event signals another point on Puhi's eye talk trajectory, and illustrates the recurrent practice of *pūkana* used to coordinate eye contact and promote keen, prolonged attention. Puhi responded with keen attention and eye contact (see Figure 6.4) that was sustained for

several seconds, much longer than her brief moment of attention at age 3;0. This indicated that she was “using her eyes” in an appropriate manner; and that her awareness and reading of facial expressions was developing along the expected pathway.

The event illustrated in Cameo 6.13 differs from previous examples in the combination of facial actions that Aunt-TeAtawhai used. With her chin tilted up and the corners of her mouth pulled down, Aunt-TeAtawhai’s facial expression in this event bore greater resemblance to the *pūkana* of performance. Even so, the connection between infant-directed ‘wide-eyes’ and the *pūkana* of performance remained tacit in my data. The connection was made explicit three months later, and is illustrated in Cameo 6.14, when Aunt-TeAtawhai named her action while employing *pūkana* with her son and Puhi.

This event is significant in its links with other events across a *whānau* timescale in three respects. First, the wide-eyed looks in my data up to this point may have been only coincidentally connected to the *pūkana* of *kapa haka*, but Aunt-TeAtawhai’s naming of her *pūkana* action in this cameo made the connection explicit, thus retrospectively clarifying that all previous wide-eyed incidents were contributing both to Puhi’s proficiency in performance, and to her proficiency in the *pūkana* of everyday interaction. Second, the convergence of the *kōrero mai* trajectory with the *pūkana* trajectory at this point is evident in Aunt-TeAtawhai’s concurrent *pūkana* utterances and actions, which were mutually emphasising and promoting. The third link is with the *whānau* trajectory. Aunt-TeAtawhai did *pūkana* first as a distraction to B-Toihau, then as a way of including Puhi in a triadic interaction. Having captured both children’s attention with *pūkana*, Aunt-TeAtawhai then encouraged interaction and affection between the two cousins with imperative phrases, physically joining the three of them in embrace, and by

Cameo 6.14. "Pūkana"

Age 11;3

Toihau is grizzling intermittently. Aunt-TeAtawhai glances at Puhi standing by her, then back at B-Toihau (15;0) as he VOC cries. Aunt-TeAtawhai flicks her head back and does a pūkana to B-Toihau, and whispers.

Aunt-TeAtawhai Pūkana

Figure 6.5a. Pūkana to B-Toihau

Aunt-TeAtawhai moves her gaze to Puhi, still in pūkana. Puhi looks at her. Aunt-TeAtawhai relaxes face but holds eye contact with Puhi, then flicks her head backwards and does pūkana to Puhi.

Aunt-TeAtawhai [whisper] Pūkana

Figure 6.5b. Pūkana to Puhi

Aunt-TeAtawhai relaxes her face and grins... spreads her arms and puts a hand behind each child, gently guiding them closer.

Aunt-TeAtawhai Awhiawhi, awhiawhi, kihi. <hug, hug, kiss>

Puhi leans towards B-Toihau to kiss him...

Aunt-TeAtawhai Kia horo B-Toihau, titiro ki a Puhi, tō tuahine nei. <be quick B-Toihau, look at Puhi, your sister here>

Aunt-TeAtawhai helps Puhi by pushing the back of her head gently towards B-Toihau's face and vocalising a kiss

Aunt-TeAtawhai mmmwah! Ka pai [claps] <good>

naming the children's relationship. This event gives further evidence of the inter-connectedness of Puhi's socialisation into *whānau* communicative practices. In addition it shows that, because te reo Māori was the language of her socialisation, as her proficiency in these practices was progressing, so too she was gaining an understanding of words, phrases, kinship terms and the values they expressed.

In a further event two weeks later, Māmā used *pūkana* to promote keen attention with Puhi (age 12;1). As illustrated in Cameo 6.15, Māmā integrated *pūkana*, gasps, held breath, and eye contact into a series of facial expressions, which she used to coordinate eye contact with Puhi, to encourage her keen observation, and to heighten anticipation before reciting a nursery-rhyme while playing a game familiar to Puhi. In response, Puhi made eye contact with Māmā, straightened her back to sit upright, tilted her head backwards in familiar anticipation of the punch-line action (even before Māmā started to recite the rhyme), and kept her attention on Māmā for approximately 25 seconds. Māmā then began to recite the rhyme. Like *kōrero mai*, this interaction was ostensibly dyadic, but it became embedded in a multiparty interaction when Puhi, who was monitoring the presence of others, coordinated eye contact with first me, then Pāpā in turn, thus drawing us into the game and inviting us to share her joy.

6.4.3 Summary of Puhi's eye talk trajectory

In this section, Puhi's socialisation into the communicative practice of eye-talk has been plotted to reveal a trajectory that began with her early role as addressee and early characterisation as a proto-eye-talker and progressed through her roles as observer and respondent. The eye-talk trajectory has focussed in particular on *pūkana*, to which Puhi responded with increasingly long and keen attention, and which was explicitly named as a form of communication in Puhi's *whānau*.

Cameo 6.15. *Pūkana* in mock excitement

Age 13;1

Puhi turns to Māmā, grasps Māmā's shoulders and starts bouncing up and down vigorously...

It is clear to me that Puhi is asking for a repeat of the game, and that Māmā is stalling, enjoying the moment and letting anticipation build. I talk for Puhi, in time to her bounces:

MH Anō-anō-anō-anō <again [rep]>

Puhi stops bouncing then starts again, looking intently at MH and VOC.

Māmā Anō-anō-anō-anō. Anō-anō-anō-anō.

Māmā positions Puhi on her lap, leans back, smiles, jiggles and repositions Puhi.

Māmā gasps, holds her breath, releases it, gasps again and does pūkana.

Figure 6.6: *Pūkana* with gasp

Smiling, Puhi turns to look at Pāpā. Pāpā turns his head towards Puhi, then makes eye contact with her and smiles, nodding his head slightly in time to the bounce of Māmā's knees.

Māmā starts to chant. Puhi VOCs along with Māmā.

Puhi /a/

Māmā Just-

Puhi /a/

Māmā -like-

Puhi /tih/

Māmā 'drops' Puhi backwards and catches her, saying:

Māmā [high pitch] –this! She so just said /dis/ [this] ay.

From three to twelve months, Puhi had repeated, frequent opportunities to observe how *pūkana* and other eye-talk forms were used with a wide range of meanings and nuances of performance, and in a broad range of contexts. My data show Puhi's participation in eye talk only as observer and respondent but reveal that, over time, the attention she gave to *pūkana* grew from a fleeting moment at age 3;0 (see Cameo 6.11) to nearly half a minute at age 12;0 (see Figure 6.3). Puhi's responses to eye talk, including eye contact, keen attention, and gaze-following, signalled her growing understanding of *whānau* eye talk within different situations and interactions.

In the following section, the focus of my analysis turns to music, song, and *kapa haka*. Puhi's eye-talk trajectory, and in particular her growing participation with the practice of *pūkana*, was intertwined with these other practices. Her learning of *pūkana* as a valued means of communication continued to be promoted, together with moving to music and singing. Since it was the *pūkana* form of eye talk that intersected most with the *kapa haka* trajectory I return to it in that context in 6.5.

6.5 Participating with music: the *kapa haka* trajectory

Music and movement, in many forms, were an integral part of Puhi's communicative environment. The trajectory I establish in this section is of Puhi's developing proficiency with the communicative practice of *kapa haka*.

As explained in 4.2.1.3, *kapa haka* refers to Māori performing arts, which draw on TM forms of dance, song, and *haka taparahi* 'warfare posturing'. Just as Puhi's *whānau* expected their infants to become proficient participants with language and listening, and with *pūkana*, so too they expected that their infants would grow up to sing competently and move rhythmically to music in accordance with cultural practice (Diary), and to become increasingly proficient in *kapa haka* performance (Mereana Winterburn, interview, December, 2014).

Therefore, they were expected to accumulate the following roles, which are discussed in sub-sections 6.5.1 to 6.5.4.

observer/overhearer/addressee → listener → emergent performer → performer

As Puhi gained experience and proficiency with rhythmic movement, music and song, she was increasingly encouraged to participate in *kapa haka*. Since this genre was an integral part of life in her *whānau*, Kōhanga Reo and community, she gathered many experiences, and expectations upon her were consistent. Section 6.5.3 draws together the “*kōrero mai*”, “eyetalk”, and “*kapa haka*” trajectories, and plots Puhi’s growing proficiency with the combination of words, interaction, music and movement, as they come together in her increasingly active participation as a *kapa haka* performer.

6.5.1 Puhi as overhearer/observer, and addressee

At least four different forms of music were present in Puhi’s environment: recorded and live popular music, *waiata tautoko* ‘support songs’, *kapa haka* ‘Māori performing arts’, and *karakia* ‘hymns/prayers’. In her first few weeks of life, experiences with these genres contributed to Puhi’s overall socialisation with music, and she participated with each genre in differing, but overlapping ways. On many occasions she was moved rhythmically to music when, for example, *whānau* rocked her while singing, or danced with her to recorded music. Her participation in these events can be characterised—in lieu of a term for “one-who-was-moved-to-music”—as an “addressee”. Puhi also experienced *kapa haka* in *whānau*, entertainment, and competition contexts from birth.

6.5.2 Puhi as listener, and proto-singer

Within a few weeks of her birth, new music-related roles for Puhi were signalled, and the *whānau* expectation regarding singing was made explicit. For example, at age 0;6.5 Māmā interpreted Puhi’s vocalisations as song and talk, and addressed her with *waiata mai* ‘sing [to me]’ (see Cameo 6.2). This

signalled Puhi's role as proto-singer, and also signalled the *whānau* expectation that Puhi would come to participate as a singer. The *whānau* and community expectation of singing as a cultural communicative practice was also signalled.

From conception, [our] children are raised in a culture of oratory in which speeches are followed by the appropriate *kīnaki* [relish]: a song or *haka*. This happens at all *whānau* occasions. (Maru Karatea-Goddard, interview, September, 2014)

In Puhi's first three months of life, a lack of obvious indications that she responded to recorded music in a productive (as opposed to receptive) way led me to characterise her as an overhearer of this genre during this period. However, over the same time period, when adults sang directly to Puhi to distract her from grizzling or to engage or maintain her attention, she was observed to actively listen. For example, at age 1;1, her response to me singing to her was to stop grizzling and turn her head towards me. At 1;3 she made and maintained eye contact with Māmā (as singer) through three short lines of song, and at 2;0.5, she turned her head towards Unc-Awa when she heard him singing. Unc-Awa acknowledged Puhi's attention shift by making eye contact with her and directing his song to her. In those moments, Puhi's role shifted from 'overhearer' to that of being an active participant, i.e., to a "listener".

At least once a month, Puhi attended *whānau* and community events where *kapa haka* and traditional song featured. At a local graduation ceremony, for example, various groups performed in support of their graduands. At her uncle's 21st birthday party a few weeks later, *whānau* members performed in support of speakers and to entertain attendees. At both these events, Puhi (aged 2;1 and 3;0) participated as an overhearer/observer and listener. Songs and *haka* at these events were associated with *whānau*, *hapū* and *iwi*, and Puhi was to hear them repeatedly over time, including at local school performances, such as that shown in Figure 6.7.

Local and national competitions were another source of *kapa haka* experience. At age 4;0 Puhi was immersed in the sights and sounds of a four-day national *kapa haka* festival. In varying stages of wakefulness and sleep over the duration of the festival, Puhi experienced live on-stage performance and off-stage *haka tautoko* ‘support *haka*’ during daytime, re-plays on television in the evenings, and *whānau* conversational build-up to, and critique of, performance. She participated as an overhearer and observer and also as listener and observer across these varied activities. More active forms of participation and response emerged over the following months.

6.5.3 Puhi as emergent performer

As she became more mobile, *whānau* members increasingly encouraged Puhi to move rhythmically by moving her in time to music. For example, Unc-Awa held Puhi’s hand and “pumped” it in time to recorded music as illustrated in Cameo 6.16.

Cameo 6.16. Fist-pumping

Age 4;0

6:50	B-Jack (13)	Today ... [Unc-Awa] was holding onto her [Puhi’s] hand and I was... watching and we were doing like these, like fist pumps, and she was doing it, she was going [demonstrates moving closed hand rhythmically], like, properly, but, but [Unc-Awa]... was holding her hand.
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In this cameo, B-Jack characterised Puhi’s behaviour with the same “she does” structure as was used in 6.5. By saying that she was *doing it [fist-pumping]...properly*, B-Jack characterised Puhi as the ‘doer’, the one who moved rhythmically to music in an appropriate manner (albeit appropriate to a global teen sub-culture rather than TM).

My observations and recordings reveal that *whānau* frequently moved Puhi rhythmically to music, with the purpose of amusing or settling her. For example in my role as Puhi’s grandmother I sang, *Pekepeke, pekepeke, Mokopuna e* ‘Jump, jump, Grandchild’, while moving her legs in a jumping motion as she lay

on her back (at age 5;2). Six weeks later, Māmā was recorded singing *kanikani kanikani kani, e tū* ‘dance, dance, dance, stand [still]’ while holding Puhi’s hands (age 7;0) and jiggling her in a dancing motion. Puhi responded to Māmā with attention, eye contact, smiles, and vocalisations. This signalled the broadening of Puhi’s roles to include ‘active respondent’ and a participant in activity as an emergent dancer, an indication that her trajectory of socialisation into participating with music accorded with the expected *whānau* pathway.

By the time Puhi was aged 8;3, adults entertained Puhi and themselves, and encouraged her to move rhythmically, by directing vocal and mechanical percussion to her. For example, Māmā tapped a rhythm, and called to Puhi to *kanikani, korikori* ‘dance, move’, and four days later, Pāpā played a tune on a recorder to Puhi (8;3), to which Puhi ‘danced’ sporadically over a four-minute period. Cameo 6.17, represents a portion of the latter event.

Cameo 6.17. Dancing to recorder

Age: 8;3

0:07	<p><i>Pāpā and MH each hold Puhi under one arm so that she is standing with support. Pāpā starts to play the recorder. Puhi flicks her head round to watch, making eye contact with Pāpā and smiling.</i></p> <p><i>MH [high pitch] Kanikani <dance></i></p> <p><i>Puhi rocks her head back and forth, ‘dancing’ briefly, then looks at the recorder and reaches for it...</i></p> <p><i>MH [high pitch] Kanikani <dance></i></p> <p><i>Puhi ... rocks her head and body back and forth. She is distracted, then as Pāpā finishes playing the tune, she looks up at him.</i></p>
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In this example, in my role as grandmother, I implicitly reinforced Puhi’s characterisation as ‘dancer’ in real-time, by twice saying *kanikani* ‘dance’ in a high-pitched, encouraging tone. On both occasions she fulfilled my expectation that she would respond by dancing.

Adults promoted dance to Puhi, from 3;0 to 12;0, in several ways. Pāpā ‘beatboxed’ (created a rhythm using vocal percussion), to Puhi (age 9;3). In

both the recorder and beatboxing examples, Pāpā made eye contact with Puhi while he made music. Puhi responded with eye contact, a smile, and by rocking her body rhythmically back and forth briefly, which Māmā and I articulated as *kanikani* ‘dance’. Adults directed song and percussion to Puhi, held her upright, and used high-pitched, reduplicated, or repeated imperative forms such as *kanikani* ‘dance’ and *korikori* ‘move’ in Cameo 6.17 and, *pēnei, pēnei* ‘like this, like this’ at age 11;3. Adults coordinated and maintained eye-contact with Puhi, while moving their own heads or bodies rhythmically, and responded to Puhi’s dance by smiling, laughing, and imitating her. Māmā explicitly characterised Puhi’s participation with music by stating that Puhi “loves dancing”.

In the community, *whānau* members were involved with school *kapa haka* teams in the roles of supporter, tutor, performer and audience member, and Puhi attended practices and performances with those *whānau* members. At community occasions, consistent with traditional practices, song and *haka* were used to bring people together, reinforce *whakapapa* connections, show support and solidarity, and entertain.

Figure 6.7. Local school *kapa haka* performance: girl performs pūkana at right (Whānau photograph, 2014)

Figure 6.7 captures three of Puhi's cousins performing with the local school *kapa haka*. It also illustrates costume, actions, stance, and *pūkana*. In *kapa haka* performance, as in the everyday interactions discussed in 6.3, *pūkana* promoted attention, and emphasised the messages delivered through song in *kapa haka*.

Audiences participated actively, clapping and cheering, and performing *haka tautoko* 'support *haka*'. In addition, the school song repertoire overlapped with that of the *whānau*, giving Puhi further experience with already familiar *iwi* songs and their use. At 9;0 and 12;0, Puhi participated as an audience member by listening, observing, clapping and cheering during and after each performance item. She also interacted with *whānau* members in the audience, by smiling and laughing with whoever held her, and by searching for other *whānau* members in the audience and making her way from one person to another. This latter is significant to Puhi's *whanaungatanga* trajectory in which she develops *mataara* and proficiency within *whānau* participatory arrangements.

By 12;0, then, Puhi had accumulated the roles of "dancer", "audience member" and "emergent performer". This corresponded with the very beginning of Puhi's first-words period, when there was evidence that she was familiar with certain songs and chants. For example, she attempted to jump to a lyric *pekepeke* 'jump', and to join in with a nursery rhyme at the same age (see Cameo 6.15). Puhi also used hand actions she had learnt to represent a swimming fish and a flying butterfly when hearing familiar songs about these creatures (e.g., aged 17;2). Her first-words data set reflected the lyrics she heard (see 7.3.2.1). For example, she approximated *pūrerehua* 'butterfly' and *mōrena* '[good] morning' while singing with others in her 18th month.

Repeated experience with *hapū* and *iwi* song repertoires meant that Puhi's familiarity with their lyrics, messages, and movement developed over time. A

new set of experiences with music occurred from age 16;0, when Puhi began to attend Tū Roa Kōhanga Reo. Song, music, rhythmic movement and *pūkana* were fundamental to the Kōhanga Reo curriculum, along with historical stories, *whakapapa*, traditional knowledge, and language acquisition (Te Kōhanga Reo, 1995). On her first day at Kōhanga Reo, Puhi heard familiar and new songs, and spent much time keenly observing daily routines, which referenced *tikanga Māori* and Anglo-colonial timescales and included *karakia* ‘prayer’, hymns, *mihimihi* ‘greeting speeches’, *waiata* and *haka*. Over the following six weeks, Puhi became familiar with the routines, and showed a continued progression towards the role of singer. In addition there were signals of a shift towards the role of music-maker. In one video-recorded session, illustrated in Cameo 6.18, children were given various instruments to play. Most of the children explored a range of instruments. Puhi played with maracas and bells, but kept gravitating to guitar-type instruments.

Cameo 6.18. Ukulele

Age 16;0

25:29	<i>Puhi puts down maracas and picks up a large ukulele, hoists its bridge under her arm and plucks the strings with other hand, then turns to watch Whaea-Arapera who is playing guitar.</i>
26:31	<i>Puhi makes eye contact with Whaea-Arapera, who nods as she strums, and smiles at Puhi. Puhi smiles and plucks the ukulele strings. Whaea-Arapera stops strumming, takes the ukulele from Puhi, and pats the cushion next to her in a clear invitation to Puhi to join her. Puhi accepts the invitation, sitting next to Whaea-Arapera. Whaea-Arapera hands Puhi the ukulele, helping to position it similarly to how Whaea-Arapera is holding the guitar. Whaea-Arapera starts to strum. Puhi stays sitting with ukulele, occasionally plucking, strumming or patting it, and watching others, through several songs to 37:00.</i>

Whaea-Arapera promoted rhythm and strumming to Puhi and signalled Puhi’s new role as emergent guitar-player. Puhi seemed to accept the role by settling in to a position that facilitated both playing and observation of playing the guitar. All this occurred in the context of Whaea-Arapera’s use of the guitar as accompaniment in the real-life context of singing together at Kōhanga Reo.

6.5.4 *Puhi as performer*

Music, song and other communicative elements of *kapa haka* were part of everyday routine and everyday interactions at Tū Roa Kōhanga Reo. For example, caregiver Whaea-Mariana used *pūkana* to catch children's attention when calling out to them, and it was not unusual for adults to break into song to reinforce children's learning. For example, when a butterfly flew into the children's midst, adults and children spontaneously began singing a familiar song about butterflies. Daily routine also involved designated singing and *kapa haka* sessions. Adults had similar expectations to those of Puhi's adults at home, i.e., that children would become competent singers and *kapa haka* performers (Te Kōhanga Reo, 1995). *Kaiako* promoted this, for example, by showing and directing *tuākana* (children aged 3-4 years) to stand in traditional *kapa* 'lines'. *Tēina* (0-3 years) were left to observe and participate as they chose, and from a location of their choice, such as next to *tuākana*, or from the periphery. Figure 6.8 shows the participatory arrangement of a *kapa haka* session.

Three further mechanisms for promoting aspects of *kapa haka* are illustrated in Figure 6.8. The first aspect is spatial organisation: *tuākana* (T) are standing in lines; *teina* (P and Puhi) observe and participate from a position of their choosing, and *whāea* (Wh) are positioned in front, beside, and behind the *kapa* 'lines'. The strategic placement of adults in Kōhanga Reo *kapa haka* sessions is another example of multiparty interaction within which children were encouraged to use their eyes to interact with, observe and monitor others, both older and younger than themselves. The second aspect is a hands-on-hips action, illustrated by the three *whaea*, three *tuākana* (T1, T2, and T3) and Puhi. The third aspect is eye contact between Puhi and Whaea-Mariana (WhM), indicated by the white arrow. Whaea-Mariana used eye contact, smiles and imitation to endorse Puhi's vocal approximation of *hī* and gestural approximation of *hope*, a hands-on-hips *kapa haka* action.

Figure 6.8. *Kapa haka* participatory arrangement
Age: 19;0

Whaea-Arapera used formulaic *kapa haka* language, such as *kia mau* 'be ready' and *hei* or *hī* (exclamations) to encourage children to participate; this show-and-display mechanism was facilitated by the spatial organisation of children and adults in relation to each other, the adults' performance, and interaction between participants via facial expression. In addition, Puhi overheard *kaiako* giving *tuākana* imperatives such as, *e tū* 'stand up/stand still', and asking *tuākana* to nominate songs they would like to sing, *He aha te waiata?* 'What is the song?' Through these mechanisms, as well as through the fundamental appeal of music, song and rhythm, Puhi and other children were encouraged to listen to and sing lyrics, in melody and harmony, and to observe and perform actions, posture, facial expressions, all within a spatial organisation specific to *kapa haka*.

At age 19;1, Puhi attended the *tangihanga* 'mourning ritual' held for her maternal great-grandfather, Koro-Jim on his death. In accordance with *tikanga*,

on the final evening of the *tangihanga*, individuals gave speeches and anecdotes that acknowledged the deceased and invoked memories of his life. During speeches, Puhi participated as an overhearer and sometimes as a listener. As each speech ended, *whānau* members showed their support for the speaker by performing a *waiata tautoko* or *haka tautoko* 'supporting song or *haka*'. Each time this occurred, Puhi watched and listened to the singers intently, at one point making eye contact with me and saying /waita/ (*waiata*) 'song/singing', before walking to stand directly in front of the singers, as if intending to join them, or at least to observe keenly at close quarters. Puhi thus signalled her role of intent listener/observer of *waiata tautoko*, and perhaps also her desire to participate more fully.

At home, Puhi's participation with songs as communicative devices was developing rapidly. She had a succession of favourite songs, which included Kōhanga Reo songs, *whānau* compositions, and versions in English and in te reo Māori of a well-known song that she regularly heard at birthday celebrations, including her own. Her singing had at least two functions: self-entertainment, and coordinating attention with others, often resulting in interaction. For example, Puhi (20;0) named herself in repeat renditions of '*Hari huritau*' 'Happy birthday'. On several occasions she incorporated the song into successful attempts to initiate interaction with others, just as she had employed her pre-verbal 'put-on' laugh, to initiate interaction in her ninth month. For example, at one event aged 22;0, Puhi looked intently at each of the five adults present as she sang the first lines, appearing to carefully consider who to choose before naming her grandaunt (to whom she had refused to speak ten minutes previously) in the line *Hari huritau ki a* [NAME] 'Happy birthday to [name]'. Nēni-NikiP responded with some surprise, and with smiles, attention, eye contact and talk. This careful choice by Puhi signalled her proficiency with the song and her proficiency in participating in a multiparty forum. Furthermore, it signalled an astute understanding of the social situation and her control over

it, as she deliberately chose to engage with Nēni-NikiP and other individuals through song on her own terms, as a follow-up to choosing not to interact on their terms. On many other occasions, including in events captured at age (21;2) and age (21;3), Puhi sang a *whānau*-composed birthday song for her own enjoyment. Singing these birthday songs was an interaction initiation mechanism for Puhi, a way of bringing people together, and may also have invoked happy memories of *whānau* occasions. Thus, these events link with Puhi's *whanaungatanga* trajectory (see 6.6).

On one *whānau* occasion, around fifty *whānau* members gathered to prepare and share food, and to play, dance and sing, in celebration of the fifth birthdays of two of Puhi's cousins. Cameo 6.19 illustrates at least three sub-events demonstrating the *whānau* practice of *mataara* 'alert watchfulness' followed by *kōrero mai* interaction and inclusion of younger children, including Puhi, by older children. The cameo also illustrates three sub-events in which Puhi demonstrated that her roles had broadened to include emergent speaker, and two sub-events in which she demonstrated her role of intent listener-observer. The first three sub-events occurred over a seven-minute period, during which Puhi drew on her understanding of *whānau* gatherings, and of vocabulary she had acquired through songs at *whānau* gatherings. With one aunt, then another, and then with me, Puhi coordinated joint attention by looking at and indicating the tables, which were laid out for the birthday feast, and by repeatedly producing approximations of *huritau* 'birthday' and *hari* 'happy'. Her articulation efforts were misinterpreted as *rare* 'lolly' at 7:37 and as *haere* 'go' at 9:03, but Puhi persisted, attempting again at 14:40 to make herself understood. (See also Figure 7.1)

Cameo 6.19. Hari huritau

Age: 22;0

7:23	<p><i>Aunt-Havaiki (11) runs to Puhi, kneels down, hugs and kisses Puhi saying:</i> <i>Aunt-Havaiki Hey, Puhi!</i> <i>Puhi points and walks towards dinner tables...she reaches up to table</i> <i>Puhi /hehu/ /hehu/ /tuy/ (hari huri tau) <happy birthday></i></p>
7:37	<p><i>Aunt-Havaiki [interprets] Rare? <lolly></i> <i>Aunt-Havaiki gives Puhi a lolly from the table.</i> <i>Puhi /hehu/ /hetau/ (huritau) (hari huri tau) <happy birthday></i> ... </p>
9:00	<p><i>Aunt-Amo (16) carries Puhi into the dining hall, and points to the tables, gasps.</i> <i>Puhi looks and points towards the tables.</i> <i>Puhi /hadi hadi/ (hari hari) <happy happy></i></p>
9:03	<p><i>Aunt-Amo [interprets] Haere ki roto? <go inside?></i> ... </p>
14:40	<p><i>Puhi walks alongside the laid tables. She looks up at MH, points to the tables, and sidles in between two chairs next to the table, saying:</i> <i>Puhi ...ha:ōi haōi haōi/ (hari hari hari) <happy happy happy></i> <i>Puhi points at table and looks up at MH.</i></p>

In a fourth sub-event, immediately prior to the feast, an elaborate birthday cake was carried into the middle of the room and over 50 *whānau* members gathered round to sing to the birthday children. Puhi listened and observed intently, without joining in, despite demonstrations of knowing the songs in previous events. The fifth sub-event occurred after all had feasted and tidied up. Puhi's cousins and Aunt-Sarah, aged 8 to 21 years, came together to perform a dance routine to entertain the gathering. This dance routine was indicative of *mahitahi* – purposeful, collective participation that occurred at these regular *whānau* events, as indeed was the preparation of food, eating, playing, singing, and cleaning up together. In addition, the dance routine signalled that performance was varied across modern as well as traditional genres.

At around age 21;0, Puhi moved to an urban Kōhanga Reo where song again formed part of the daily programme. There, adults routinely played guitar and sang *kapa haka* songs in full voice during daily play sessions outside. Kaiako

reported Puhi's enjoyment of singing and her proficiency with a growing repertoire of songs and *haka* (unsolicited comment), and Puhi further indicated her role as singer by entertaining herself with songs and *haka* independently at home, as in Cameo 6.20. Koro-Leon verbally encouraged Puhi to *haka* and Puhi incorporated the singing and *haka* into her interactions with *whānau* members.

Cameo 6.20. *Haka*

Age: 24;1

Puhi stands by Unc-Awa, looking at his laptop screen. She raises her arms and slaps her hands on her thigh, chanting a line from a haka:

Puhi /pa:kia pa:kia/

Puhi switches to a song:

Puhi [sings]/...kei rōto te:nei/

Puhi glances up at Koro-Leon. She flaps her arms at sides and continues singing indistinctly.

Koro-Leon Kanikani kanikani. <dance dance>

Puhi slaps hands on her legs, switching back to the haka

Puhi /pa:kia pa:kia/ /wae ae kakahi/ (Pākia pākia, waewae takahi[a]) <Slap, slap, stamp feet>

Four months later at age 28;2, Puhi attended a second four-day national festival, where she was immersed once again in the sights, sounds and sensations of *kapa haka*. By this time, she was an active audience member, an intent listener/observer who clapped and cheered, and commented verbally on the performances. As shown in Cameo 6.21, Puhi signalled her recognition of the genre when she called me to share her food and to watch a television show that was screening the event. Although her articulation was still developing, her referential use of the word *kapa haka* to indicate the event, as well as to coordinate attention, is clearly evident in this cameo.

Cameo 6.21. “*Pakahaka*”

Age: 28;3

<i>Puhi</i>	<i>Haere mai, Nēni, ki te kai <Come to eat, Nēni></i>
<i>MH</i>	<i>Ki te kai? Mātakitaki rānei? <To eat? Or watch?></i>
<i>Puhi points at television screen.</i>	
<i>Puhi</i>	<i>Āe, te mātakitaki te paka haka [kapa haka] + + + pakahaka [kapa haka] <Yes, watch the kapa haka.></i>

With the experience of *kapa haka* at Matatini under her belt, Puhi's socialisation through and into performance gained momentum when she returned to Kōhanga. There, regular *kapa haka* practice sessions were underway in preparation for an impending performance at a community event. In these sessions, adults promoted rhythm, melody, harmony, lyrics, and the bodily movements of *kapa haka*, mostly through performing with the children, formulaic *kapa haka* commands, and show-and-display *kapa haka* participatory arrangements (Figure 6.8). Adults also promoted *pūkana* through demonstration and raised volume at relevant points in particular songs, notably on singing the lyric *Taniwha, Taniwha, pūkana!* The *pūkana*+word combination was mutually promoting, and was further promoted with eye contact between adults and children and between *tēina* and *tuākana*.

The performance captured in Figure 6.9 signals that, by 29;0, Puhi had appropriated the role of performer. On stage she gave a hearty performance, singing most of the lyrics to several songs and making use of *takahi* and *mahi-ā-ringa* (foot and hand actions). As the *Taniwha* song began, B-Paenui (age 17;0), who was also performing, made his way to where his (older) *tuahine* Puhi stood. On the appropriate lyrics, the two children made eye contact and performed *pūkana* to each other. Puhi then turned to look at *whānau* members in the audience. Figure 6.9 captures a moment when Puhi fixed her gaze on her mother, drew her mouth down, and raised her hand as appropriate for performance *pūkana*.

Figure 6.9. Puhi performs *pūkana* age 29;0

At the time of the performance shown in Figure 6.9, Māmā explicitly characterised Puhi as a “*kapa haka* baby”, thus marking the achievement of a milestone in her socialisation. Loosely defined, this term refers to a child who, from a young age, is socialised through and into the ways of *kapa haka* performance, and who is expected to perform well in *kapa haka* in the future.

Puhi’s development towards the role of performer in *kapa haka* meant acquiring lyrics, tunes, stance, *pūkana*, posture, movement, and participatory arrangements appropriate to *kapa haka*; and understanding the interactions that occur between performers and audience. The event signals the coming together of the four socialisation trajectories: interaction initiation (*kōrero mai*), *pūkana*, song and dance, and *kapa haka* performance.

6.5.5 Summary of Puhi’s *kapa haka* trajectory

From birth, Puhi was an observer/overhearer and addressee of various music genres, whose *whānau* expected her to progress towards the role of performer.

Whānau promoted performance by moving Puhi rhythmically and singing to her, and by taking her to *whānau* and community events where *waiata* and *haka* were routinely performed. *Whānau* characterised Puhi as a “proto-dancer” by 4;0, and encouraged her to dance and sing for their, and her, entertainment.

Singing, music-making and *kapa haka* were also promoted on a daily basis through a music-rich curriculum at Kōhanga Reo, where Puhi was implicitly characterised as an emergent *kapa haka* performer and music maker at 16;0. Her role as *kapa haka* performer was cemented in her first public performance at 29;0, when she incorporated the communicative practice of *pūkana* with lyrics, synchronised singing, stance, and movement, and interacting with *whānau* members while on stage with her Kōhanga Reo *kapa haka*.

6.6 Participating in kinship roles: the *whanaungatanga* trajectory

Whereas previous sections in this chapter have plotted Puhi's trajectory into recurrent communicative practices and her participant roles within those practices, the focus in this section is on describing a broader trajectory that integrates all these communicative practices. I call this Puhi's *whanaungatanga* trajectory. This trajectory involved getting to know *whānau* members, moving between relationship roles, and accumulating *whānau* values and responsibilities. Since these things all involved Puhi interacting with her *whānau*, the *whanaungatanga* trajectory integrates the three communicative practices discussed in 6.3 to 6.5 above.

It is more difficult to conceptualise linearly the expected pathway for Puhi's *whanaungatanga* trajectory than for her trajectories towards the three communicative practices. *Whānau* expected that the learning described in this trajectory would be applied in all situations. The expectation can be summarised as 'all *whānau* members have responsibilities to each other, and to the *whānau* as a collective whole'. This section therefore uses examples from my data to draw together communicative practices, participation roles, kinship roles, responsibilities and values that Puhi accumulated and integrated as she progressed along her *whanaungatanga* trajectory.

6.6.1 Puhi and whanaungatanga roles and responsibilities

Puhi was born into many kinship roles including those of *teina*, ‘younger sister/cousin of a female’ *mātāmua* ‘firstborn’, *tamāhine* ‘daughter’, *tuahine* ‘female sister/cousin of a male’ and *mokopuna* ‘grandchild, great-grandchild’. Each *whānau* member, including Puhi, in her birth role of *teina*, had roles and responsibilities in socialising other *whānau* members. An expectation associated with relating to others as *teina* is made explicit in the *whakatauki* ‘adage’ *Mā te teina e whakarongo* ‘it is for the *teina* to listen’. That is, younger children, and particularly younger siblings/cousins are expected to listen to, and learn from those in *tuakana* roles (see 4.2.3.3). Another expectation was that Puhi would broaden her roles to include that of *tuakana*, and that she would fulfil the expectation *Mā te tuakana e tiaki* ‘it is for the *tuakana* to nurture’. That is, older siblings/cousins are expected to take responsibility in the nurture and socialisation of younger children. A third expectation, as Puhi progressed into the role of *tuakana*, was that she would increasingly come to grips with the complexity of *whānau* values such as knowing kinship connections (*whakapapa*), being watchful and mindful (*mataara*), working and acting together (*mahitahi*), and sharing and caring (*manaakitanga*). These link directly with the KM principles that guided my study (see 3.4).

6.6.2 Getting to know people and connections: whakapapa

The value placed on understanding the intricacies of *whakapapa* was made explicit by Kui, who explained that children “need to learn how they are related to each other” (Mereana Winterburn, unsolicited comment, July, 2012). This, she said, included learning the appropriate kinship terms with which to refer to their relations so that they understood how they connected with each other through *whakapapa*. An example of how adults promoted an understanding of *whakapapa*, and encouraged Puhi to get to know *whānau* members, is

illustrated in Cameo 6.22, in which Unc-TeAta monitored and guided an interaction between Puhi and Waiaio.

Cameo 6.22. “*Awhi* sister”

Unc-TeAta (20) is standing, holding Puhi in one arm and his daughter G-Waiaio (20;1) in the other. Unc-TeAta moves the two close together, saying to G-Waiaio:

Unc-TeAta Awhi Sister <hug Sister>

In this cameo, and in several events in my data, Unc-TeAta promoted the *teina-tuakana* relationship between Puhi and G-Waiaio in three ways. First, he moved the two children close together while enveloping them both in his own hug, (see also Cameo 6.14, where Aunt-TeAtawhai performs a similar action with Puhi and B-Toihau). Second, he encouraged G-Waiaio to show affection to her *teina* Puhi by saying *awhi*. Third, he encouraged G-Waiaio to consider Puhi in the relationship of *sister*. Unc-TeAta’s use of the term *sister* here warrants further comment. Taking into account a solely Anglo-colonial sociohistorical timescale, the term *sister* may invoke a kinship connection between female siblings, who share at least one parent. However, my analysis of the event shown in Cameo 6.22 also references a TM timescale, and acknowledges concepts of *tuakana-teina*. Unc-TeAta was encouraging Puhi and G-Waiaio to connect and relate using a term that blended Anglo-colonial *sister* and *cousin* concepts with TM concepts of *teina-tuakana*.

Sister is one of many kinship terms with which Puhi was gaining experience. Other terms, such as *tuahine* and *cuzzy*, appear in the following sections, and further kinship terms are discussed in 7.4.4.1. Cameo 6.22 illustrates that, from early in life, children in the *whānau* were expected to get to know each other and to know their kinship connections through: talking; sharing food, playthings and activity; and showing nurture and affection to infants and other *whānau* members.

Socialisation into *whanaungatanga* involved many opportunities for relationship-building at large-scale *whānau* gatherings. For example, more than seventy *whānau* members attended Puhi's first birthday party. Most greeted Puhi and other infants using the *kōrero mai* pattern (see 6.3), and greeted each other using the informal *whānau* greeting pattern (see Table 6.1). While she was encouraged to interact, Puhi also demonstrated preference by choosing when and how she participated, and with whom. With some people at that event, (e.g., Kui, Pāpā, Māmā, Unc-Dela) she smiled and held out her arms to be hugged. With others, she only smiled, and with yet others, she averted her gaze, or physically moved herself away, as in Cameo 6.8 (see also Puhi's interaction with Nēni-NikiP in 6.5.4). These events demonstrate Puhi's agency as she co-constructed her *whanaungatanga* trajectory.

6.6.3 Becoming watchful and mindful: mataara

I have already described some events in which *whānau* promoted *mataara* with Puhi (see 6.4 and 6.5.4). Cameo 6.23 illustrates Puhi being encouraged to be watchful, as a mechanism by which to get to know her infant *tungāne* B-Uenuku.

Kui and Māmā encouraged Puhi to observe B-Uenuku and, between 1:13 and 2:08, Māmā guided and monitored the interaction between the two infants. Māmā verbally promoted Puhi's relationship with B-Uenuku by comparing him to Puhi and then by naming the kinship connection between them, i.e., *cuzzy* 'cousin'. Puhi responded by intently observing B-Uenuku and Aunt-Sarah for nearly a minute. The two infants made gentle physical contact, and the adults reinforced the infants' interaction by close monitoring, smiling, and with affectionate touch (e.g., at 1:50).

Later the same day, Puhi interacted with a still younger infant (see Cameo 6.7:). The interaction was guided and monitored by adults. Aunt-Rotana (20) and Māmā encouraged Puhi to show affection by using imperatives combined with

Cameo 6.23. "Show her Baby"

Age 10;2

	<i>At a whānau gathering, approximately 10 people were sitting, conversing in a large room in Kui's house.</i>
1:10	<i>Kui calls to Māmā telling her to direct Puhi's attention towards B-Uenuku (9;2), who is feeding at Aunt-Sarah's breast.</i> <i>Kui [to Māmā] Show her Baby.</i> <i>Māmā sits up and holds Puhi forward so she can see B-Uenuku, saying to Puhi:</i>
1:13	<i>Māmā [to Puhi] Nā, titiro, kei te kaiū, pērā ki a koe. <look, [he] is breastfeeding, like you [do]></i> <i>Puhi watches B-Uenuku feed, makes eye contact with Aunt-Sarah (20), and looks back at B-Uenuku. Māmā lowers her face, watching Puhi watch B-Uenuku.</i> <i>Māmā Oooh [high pitch]</i>
1:20	<i>Kui laughs. Puhi continues to watch B-Uenuku and his mum... B-Uenuku stretches his foot, towards Puhi. Puhi touches his foot with her hand and vocalises, drawing Aunt-Sarah's attention.</i>
1:50	<i>Aunt-Sarah touches Puhi's cheek, makes eye contact with Puhi and smiles.</i> <i>Māmā leans around to look at Puhi's face, then follows Puhi's line of sight, looking at B-Uenuku.</i>
2:08	<i>Māmā [to Puhi, re B-Uenuku] Cuzzy.</i>
2:10	<i>Aunt-Sarah laughs. Puhi looks up at Aunt-Sarah's face...</i>

physical guidance. These mechanisms were also used by Aunt-TeAtawhai (see Cameo 6.14) when she encouraged Puhi (11;3) to show affection to B-Toihau (16;0), saying *awhiawhi* 'hug', and *kihi* 'kiss'. Aunt-TeAtawhai used the kinship term *tuahine*, and Unc-TeAta used *sister* to verbalise a specific kinship connection between Puhi and her cousins. The adults thus promoted the nature and value of those particular kinship connections. By 11;3, then, Puhi was demonstrating her emergent *whānau* responsibilities by observing, being watchful, initiating interaction, and showing affection.

Puhi was encouraged to observe and be watchful through various mechanisms, including *pūkana* (see 6.3.1), imperatives, and physical guidance (see Cameo 6.23). She observed her *whānau* working and acting together at *whānau* gatherings. By 29;0 she demonstrated her developing proficiency with watchfulness, and with interacting using *pūkana*. For example, when she

performed *kapa haka* (see 6.5.4), she located *whānau* members, and did *pūkana* first with B-Paenui onstage and then to Māmā in the audience. This signalled her developing ability to monitor widely, and to participate simultaneously in dyadic and multiparty *whānau* interaction.

6.6.4 Collective responsibility, sharing and caring: manaakitanga

Puhi's movement towards the value of *manaakitanga* (see 3.4.4 and 4.2.1.5) was assiduously encouraged from birth. This occurred both at home and at Kōhanga Reo and involved developing a sense of collective responsibility, reciprocation, sharing, and caring. For example, Aunt-Amo (14) monitored and guided a give-and-take game of passing a balloon back and forth between Puhi (age 10;2) and B-Uenuku (age 9;02). Aunt-Amo further encouraged the infants to interact by seating them so that they were facing each other. In another event during a musical-instrument session at Tū Roa Kōhanga Reo (see Cameo 6.18 for context), Aunt-TeAtawhai responded to an altercation over a ukulele between Puhi and B-Toihau by gently saying, *e noho* 'sit down', and by laying the ukulele on the floor between them so that both could play it together. However, as with her *kōrero mai* and *kapa haka* trajectories, Puhi actively co-constructed her *whanaungatanga* trajectory by appropriating roles and responsibilities, and taking liberties with practices. When her actions diverged too far from the expected pathway, adults were quick to remind her of their expectations. For example, when Puhi vocalised her objection to an adult moving a ukulele towards another child, Whaea-Ngahuaia responded with *pūkana*, a smile, and the question *Kāre koe pīrangi tohatoha?* [sic] 'Don't you want to share?' Whaea-Ngahuaia's gentle remonstrance to Puhi drew attention to the expectation of sharing.

Adults sharing items, including food, with infants was recurrent in my data, and was a mechanism by which Puhi learned about sharing, as shown in Cameo 6.24.

Cameo 6.24. Sharing food

Age: 19:2

31:00	<i>Puhi looks intently at Koro-Henare (50) and he turns to her and raises and lowers his head (upwards nod) and does matahī... Puhi VOCs (squeal) x 2 and turns to look at Koro-Henare's dinner plate, from which he is eating. He notices, reaches to pick up an airplane-shaped sweet from the table and moves it slowly towards her making a buzzing sound. She takes it and smiles widely. He pretends to put something in his mouth and chews. She watches attentively, smiling at him.</i>
32:00	<i>... Koro-Henare picks another sweet off the table and makes eye contact with Puhi, holding the sweet towards her... Puhi takes the first sweet out of her mouth and holds it up towards his face. He takes it and chews it exaggeratedly. She watches him and puts the second lolly into her own mouth... Puhi removes lolly from her mouth and offers it to Koro-Henare. He shakes his head and she puts it back into her mouth.</i>

The give-and-take that occurs in this event signals promotion of nurture through sharing with young children. In Cameo 6.25 Puhi demonstrates her appropriation of this, and other *whanaungatanga* values in a hall scattered with balloons, where over thirty children and adults from Te Kāhui Kōhanga Reo were playing and interacting.

This one-minute cameo illustrates Puhi demonstrating the following *whanaungatanga* values:

- *Mataara* 'alert watchfulness' of others in a group, and particularly of her younger cousin, B-Paenui
- Interaction: Puhi interacted with younger and older members of the *whānau*
- *Manaakitanga* 'concern for others and sharing': Puhi procured and shared balloons with younger children.

This event signals Puhi's progressive accumulation of *whanaungatanga* values, including the collective responsibility of members to know each other, to be

mindful and watchful, to share, and to care for each other, which are common purposes of her *whānau*.

Cameo 6.25. *Mataara* and *manaakitanga*

Age: 26:1

26:40	<i>Puhi is standing next to B-Paenui holding a pink balloon in one hand. She turns away from B-Paenui and squats to pick another balloon up but it drifts away from her. B-Paenui walks away. Puhi stands with her pink balloon, and returns to where B-Paenui was standing previously, saying:</i> <i>Puhi [to B-Paenui]/anei pae/ (anei Pae) <here [B-Paenui]></i>
26:42	<i>She sees that B-Paenui is no longer there so offers the pink balloon to another younger boy standing nearby, saying:</i> <i>Puhi [to younger boy]/anei tēka.ika/ (anei [NAME]) <here [NAME]></i> <i>The boy picks up another balloon from the floor, refusing Puhi's offer. Puhi surveys the room, still holding her pink balloon. She sees B-Paenui, and runs to him, saying:</i> <i>Puhi /anei...anei/ <here...here></i> <i>B-Paenui runs away, and Puhi follows, puts a hand on his back.</i>
26:50	<i>B-Paenui takes the pink balloon.</i>
27:02	<i>...Puhi picks up another balloon from the floor, stands, surveys, looks at KoroU (60) who is sitting at the side of the room holding and rocking a baby, who is sitting facing outwards on his lap.</i>
27:10	<i>Puhi looks intently at the KoroU's face, walks into his and the baby's line of sight, reaches out to touch baby.</i>
27:20	<i>KoroU looks down at Puhi, smiles, nods, saying:</i> <i>KoroU [to Puhi]... [names baby]</i> <i>Puhi [to KoroU]/p:/ <oh></i>
27:25	<i>...Puhi turns away, surveys the room, and sees a younger child bending to pick up a balloon.</i>
27:30	<i>Puhi approaches, bending down, looking at child's face.</i> <i>Puhi [to child]/ke te pa ke a koe/ (kei te pai? kei a koe?) <are you ok? have you got [it]?></i> <i>Puhi and child both stand up. Puhi tosses her pink balloon in the air.</i> <i>Puhi [to child]/kei a koe/ <have you got [it]?></i> <i>Puhi surveys the room again, sees B-Paenui, smiles, calls out:</i>
27:40	<i>Puhi [to Tng P]/panui tiaōe:/ ([B-Paenui])</i> <i>Puhi runs to him, roaring like a lion:</i> <i>Puhi /ja:/ [laughs]</i>

6.6.5 Working and acting together: mahitahi

Puhi gained experience with the values and practices of her *whānau* at regular, large-scale *whānau* gatherings. Through repeated experience with *kōrero mai* interactions as an infant, Puhi learned the format of those interactions, and also the format of informal greetings, which involved a pattern in which a group of people greeted each other consecutively (see 6.3). Later, when she participated in formal *hohou rongo* greeting rituals she appeared to have an understanding of that format as well. In a *pōhiri* event she attended at age 27;0, Puhi demonstrated her willingness to participate, and her understanding of the pattern by looking at each successive greeter in line, and responding either by turning away, or by shaking hands and accepting a kiss on the cheek, or *hongī*.

Examples from my data have shown that Puhi established relationships with *whānau* members through *kōrero mai* and other interactions, through the use of kinship terms, through guided interaction with younger infants, and through participating with *kapa haka*. Other examples indicate her development towards *whānau* values of watchfulness, mindfulness, collective responsibility, sharing, reciprocation and nurture.

Puhi's proficiency with *whānau* roles, responsibilities, practices and values came together at two formal events: a *whānau* wedding (at 37;1) and at a graduation of *hapū* members at university (age 38;1). More than a hundred people attended the wedding, and well over 200 attended the graduation. At each event, Puhi stayed alert to where key members of her *whānau* were placed in the large gathering and made her way between us despite our distance from one another, and despite the large number of people present. At each event, Puhi was sitting with me at some distance when members of her mother's *whānau* assembled, and arranged themselves in *kapa* 'lines'. Upon observing her *whānau* gathering to perform, she made eye contact with me and said *waiata*. She then ran to stand next to Māmā in line, holding onto Māmā's

clothing and looking out at the audience as her *whānau* performed *hapū* songs and *haka*. Although she did not perform every word and action, she did join in with some singing and an occasional well-timed action. At each event, when the performances ended, she returned to where I was sitting and said, *I waiata au* ‘I sang’. The expectations of her *whānau* regarding Puhi knowing her *whānau*, being watchful, participating, performing, taking responsibility and acting together were thus realised in these two events.

6.6.6 Summary of Puhi’s whanaungatanga trajectory

This section has drawn together the three previous trajectories with Puhi’s trajectory towards *whanaungatanga*. *Whānau* socialised Puhi through and into kinship roles and responsibilities, and through and into values of *whakapapa*, *mataara*, *manaakitanga*, and *mahitahi*. As she progressed towards proficiency in communicative practices she also gained an understanding of *whānau* values and took on responsibilities associated with kinship roles. That is, through repeated *kōrero mai* interactions as an infant she got to know her many *whānau* members, and developed an understanding of kinship terms and the *whakapapa* connections they represented. Through being nurtured with affection, and being encouraged to nurture, share and show affection she learnt to interact with young *whānau* members. While developing proficiency with *pūkana*, Puhi also became a watchful observer, so that by the end of the study she was able to monitor and locate key *whānau* members even in large crowds. As Puhi developed proficiency with songs and *kapa haka* her understanding of *mahitahi* developed so that she wanted to participate in *waiata* and *haka tautoko* with her *whānau*, and was able to. This section has shown how Puhi’s trajectories through and into communicative practices, participant and kinship roles and responsibilities, and *whānau* values, were simultaneous and interwoven.

6.7 Chapter summary

In this chapter, aspects of the language socialisation of one case-study child within her *whānau* were revealed as four trajectories of socialisation (Wortham, 2005). These trajectories were marked out by signs and events that were contingently linked across a developmental timescale that spanned Puhi's first 39 months of life.

In this chapter, I have identified three recurrent communicative practices which involved culturally-particular forms of language, gaze, movement and interaction. I have described Puhi's socialisation through and into these practices, namely: *kōrero mai*, eye talk, and *kapa haka*. I have also described Puhi's *whanaungatanga* trajectory, which involved her socialisation through and into kinship roles, responsibilities and values. Although for the most part each of the four socialisation trajectories have been discussed separately, the events signalling Puhi's progression in each were also linked to events in the others, and thus each trajectory was interwoven with the others. I have argued that the four socialisation trajectories converged at two events when Puhi demonstrated her responsibilities and drew on her proficiencies developed through *kōrero mai*, eye talk and *kapa haka*, to participate in a manner that was particular to the context of her MEB *whānau*.

Whānau members implicitly and explicitly communicated their expectations regarding the practices, roles and values that Puhi would appropriate. They encouraged Puhi along the pathways they expected her to follow by, for example:

- using IDT with high pitch and simple, formulaic language;
- doing *pūkana* and other eye talk;
- using te reo Māori IDT, with some English;
- willingly interpreting Puhi's vocalisations and eye talk;
- smiling, holding hands out, calling by name;
- implicitly inviting Puhi to take turns, signalled non-verbally with pauses, and verbally with *nē* and *nērā*;

- explicitly inviting Puhi to take turns, signalled verbally with phrases such as *kōrero mai* and *waiata mai*;
- playing games and singing songs in two languages;
- moving Puhi physically to watch and hug her cousins, and moving her in time to music; and
- demonstrating position, stance, and movement in *kapa haka*.

These, and Puhi's own actions, emerged as signs and events that indicated her changing participation. Although individually most signs and events were not sufficiently robust to signal progression, when analysed across events and over time, successive signs and events gave clarity to preceding ones, and each trajectory was revealed as a series of contingently linked signs.

Because the socialisation trajectories were Puhi's own, they were subject to her individual preferences and agency. I have argued that Puhi navigated, and sometimes diverged from, the pathways her *whānau* expected of her, while accumulating the roles of listener, respondent and initiator; proto-singer; and emergent speaker, dancer and music-maker, singer and eye-talker. Thus, she appropriated the practices and roles, rather than simply reproducing them by, for example: adding to practices such as using laughter as an effective way of initiating interaction with *whānau* members; refusing to participate fully with some interlocutors; and showing preference for an alternative pathway, such as her preference for guitar-type instruments. Some of Puhi's divergences were sanctioned as acceptable, such as when *whānau* joined in with her laughter or settled her to play the guitar. At other times, *whānau* members remonstrated with her by, for example, showing a sad face when she would not interact, or by verbally reminding her of the expectation of sharing.

I have considered the relevance of *tikanga Māori* and Anglo-colonial sociohistorical timescales and also local *whānau* timescales to the practices and kinship roles discussed in this chapter. For example, consideration of both sociohistorical timescales gave clarity to an analysis of an English kinship term used by Puhi's uncle to encourage her appropriation of *tikanga Māori* kinship

roles and its associated responsibilities. I have used examples that underline the high value placed on relationship-building, watchfulness and sharing in Puhi's *whānau*. Participating fully in various roles involved developing a sense of responsibility. This included being watchful of others and mindful of herself, anticipating what might come next, and then positioning herself in a place where she could carry out her responsibilities.

I have argued that the practices I focussed on were particular to Puhi's *whānau*, *hapū* and MEB) contexts, not least because te reo Māori was integral to all of the practices, roles, responsibilities and values that Puhi appropriated. Since it is Puhi's socialisation through and into te reo Māori that is a major focus of this study, the next chapter presents my linguistic analysis of her language production. It traces the emergence of grammatical structures of te reo Māori as her proficiency increases, in order to reveal her LA trajectory.

Chapter 7: Linguistic analysis

He rite ki te kōpara e kō nei i te ata
Like a bellbird singing at dawn

7.0 Introduction

In the previous chapter, *kōrero mai*, eye talk, and *kapa haka*, were identified as recurrent cultural communicative practices, and Puhi's increasing participation and developing proficiency was plotted to reveal her trajectory of socialisation through and into each practice, and through and into *whanaungatanga* roles, responsibilities and values. Many of the practices discussed in Chapter 6 involved language, as well as other cultural tools such as gesture, movement, routine and song, which were arranged in culturally- and situationally-coherent ways.

In this chapter I focus specifically on language as a recurrent communicative practice that is used in culturally-, situationally-, and linguistically-coherent ways, and explore Puhi's entry into using this communicative practice. In particular, I focus on her early speech – the “sweet notes” of the bellbird in the *whakataukī* that begins this chapter – and her developing proficiency with the grammatical structure of te reo Māori, in order to address the research question: *In what order do grammatical structures of te reo Māori emerge as this child acquires Māori and English as a 2L1-speaker?*

This chapter defines the scope of the data, and explains data sources and citation conventions, before presenting results and discussion from the analysis of three sets of data. Wortham's concept of “socialisation trajectory” (2005) is used to describe the emergence of grammatical structures of te reo Māori as a product of Puhi's language socialisation. The trajectory of Puhi's language acquisition (LA) is revealed through the analysis of the language she produced across twenty months from 10;05 to 30;0.

7.1 Data scope and sources

7.1.1 Scope of data

Since the research question specifies the emergence of grammatical structures of te reo Māori, analysis in this chapter again focuses only on data gathered from Puhi, whose principal productive language was te reo Māori (see Chapters 5 & 6).

The three data sets analysed in this chapter are drawn from data gathered during the overlapping periods shown in Table 7.1. Each data set is further described in the section in which it is analysed.

Table 7.1. Three data sets relative to Puhi's age

Data set title	Puhi's age at start	Puhi's age at end
First words	10;05	20;2
First combinations	18;0	24;0
First sentences	22;0	30;0

7.1.2 Sources of data

The data analysed in this chapter are primarily from weekly video recordings that were collected over a period of 30 months, but also include some *whānau*-sourced data, and diary records (see 3.5 for description of data-gathering methods and Table 3.1 for data citation conventions).

7.2 Analytic approach

Puhi's LA is considered in this analysis as an outcome of her language socialisation. I used Wortham's (2005) "socialisation trajectory" concept to track how Puhi's productive language (hereafter, 'production') changed over time as she progressed towards fuller participation as a user of language within her *whānau*. Within the socialisation trajectory model I used linguistic analysis to compare Puhi's production to adult structures of te reo Māori. In some respects, this reflects what occurred naturally, since *whānau* members interpreted Puhi's structures in real time, according to their own language use. My analysis began

as I transcribed video footage (see also 3.6.1), since this involved making best guesses at Puhi's intentions for each of her utterances. I explored grammatical functions in Puhi's first words, and grammatical structures as she began to combine words and morphs into phrases, and then to combine phrases into longer sentences. I selected ten of her first words to track from their first appearance through to age 30;0 (months;weeks). I compared Puhi's structures with adult-acceptable grammatical structures of te reo Māori as described by W. Bauer (1993; 1997), Biggs (1969), Harlow (2001; 2007); and Hohepa (1967).

My analysis was guided by the following questions:

- a. How does Puhi's production reflect the languages in her environment, and how is her bilingualism realised in her productive language?
- b. How does Puhi's production compare with LA "universals"?
- c. What grammatical forms and functions, and what communicative functions are present in the data?
- d. Given that Māori has sentences with and without verbs, what is the order of acquisition of verbal and nominal sentences in Māori?
- e. Given that Māori has VSO (verb-subject-object) word order and English has SVO (subject-verb-object) word order, which does Puhi follow?
- f. Given the high frequency of the passive in Māori, when does it emerge?
- g. Given the high importance of function words in Māori for signalling grammatical relations, when do they emerge?
- h. Given the complexity of negation in Māori, when do negative sentences emerge?

Throughout the chapter I draw on LA research and BFLA research (see 2.3 and 2.4) and relate this to what is revealed in my data regarding Puhi's Māori language socialisation. As previously noted, morphological and phonological

analysis is largely outside the scope of this study, although inevitably some elements arise in discussion.

In my analysis I use up to six layers of description of Puhi's utterances, as illustrated below.

(7501) Age 24;3

Layer (i)	Puhi:	/a	pəpəi	a	hau	e:i/
(ii)	Interpret:		(pupuhi)			
(iii)	Gloss:	PROTO	blow	PROTO	wind	eh
(iv)	Phrase:	TAM	V	DET	N	TAG
(v)	Sent:		VC		SUBJ	TAG
(vi)	Tr:	'...wind ...blows, eh.'				

KEY

(i) Puhi = Puhi's articulation, mostly in phonemic script between slashes /.../. Where more detail is required, phonetic script is shown between square brackets [...]

(ii) Interpret: = interpretation of imperfectly-articulated forms

(iii) Gloss = gloss for interpretable forms

(iv) Phrase = interpreted phrase analysis

(v) Sent = interpreted sentence-constituent analysis

(vi) Tr = translation into English

N.B.

Vertical lines separate the (phrasal) sentence constituents.

Horizontal lines separate the grammatical analysis from the utterance and interpretation, and from the translation.

7.3 Puhi's first words

Puhi was first captured on video at 10;0.5 saying an apparently recognisable word. By this time, her parents had already reported that she was saying both *Māmā* and *Pāpā*. Although she had long been characterised by *whānau* members as a proto-speaker (see 2.5.3), this new report signalled a change in her participation roles to that of a "speaker". Puhi's first recorded word was /mama/, which she used to address her father (Pāpā). This first recorded word is significant to the study for two reasons: it is the first item in a data set which I refer to as "Puhi's first words"; and it illustrates the challenges of articulation, semantics, pragmatics and intention that analysts and *whānau* members face

when interpreting children's early language production, and that young children face as they begin to participate with words.

7.3.1 Data

The data set "Puhi's first words" consists of the first 100 word types (see 2.5.4), in Māori or English, that were captured during data-gathering, when Puhi was aged between 10;0.5 and 20;2 (mths;wks). The set comprises words that were extracted from strings of babble or otherwise unidentifiable sounds, and holophrastic utterances. Holophrastic utterances include a few two-word constructions e.g., *see-ya*, that Puhi appeared to have acquired as single items. These are discussed further in section 7.3.

As described in 3.6, words were identified in one of three ways: via real-time interpretation, at transcription, or through *whānau* reports and diary keeping. The words are presented in a chronological list as Table 7.2. There are three categories of words in this table: Māori, English, and indeterminate (ind). A translation for Māori words appears in Column 5. Some words categorised as Māori e.g., *mū* 'moo', are recent loan words that are indistinguishable from their original English form. However, their appearance in Māori-language picture books, with Māori orthography (see, for example, Everitt, 1983), and the context in which they appeared (reading those books) gives justification for their categorisation. Other words I have categorised as English, although there is some evidence in my data, as well as anecdotal evidence, that some English exclamations, for example, *ok*, are undergoing absorption into te reo Māori as loan words.

Table 7.2. Puhi's first words

	Puhi's age	Puhi's word	Interpretation	Translation/ explanation	Communicative function
1	10;0.5	/mama/	Māmā	KIN	coordinating mutual attention
2	11;1	/aba/	Awa	NAME	joining in by repeating
3	11;1	/papa/	pāpā	KIN	coordinating mutual attention
4	12;0	/tə/ /ta:/ /ta/	ta	(Eng baby talk)	influencing another's action
5	12;0	/wɪ wɪ/ /wɪ:/	waewae	leg	referential
6	12;3	/nanan/	Nēni	KIN	coordinating mutual attention
7	12;3	/u:/ /wɪ/	ū / oooh	(ind)	expressing excitement
8	12;3	/ai/	hei	(Eng)	coordinating mutual attention
9	12;4	/tətʊ/	titi	titty	requesting food/comfort
10	13;1	/ti:/	this	(Eng)	joining in familiar routine
11	13;2	/pap/ /pap pap/	bopbop	(Eng)	requesting food/drink
12	13;4	/ɪp/	oops	(Eng)	joining in by repeating
13	14;1	/wɪa/	woof (dog noise)	(Eng)	joining in by repeating
14	14;2	/wbʊm/	boom	(Eng)	(unclear)
15	14;2	/pætə/	puku/pito	belly/belly-button	referential
17	15;1	/tekau/	tekau	ten	joining in familiar routine
18	15;1	/pepe/	pēpē	baby	joining in by repeating
19	15;1	/ti/	boo	(Eng)	joining in by repeating
20	16;0	/wɪ/ /iɪwɪ/	hū	shoe	referential
18	16;0	/eij/ /ei/ /ɪjei/	yay	(Eng)	greeting
19	17;0	/aʊ/	kāo	no	objecting
20	17;0	/ata/	arā <voila>	voila	describing completed event
21	17;1	/wəjaja:/ /wəjawa:/	wakarererangi	aeroplane	joining in by repeating, referential
22	17;1	/te:teʊ:/ /te:te/	mutu	be finished	describing completed event
23	17;1	/ti:ti:/ /tite/	kite	see you	farewell
24	17;2.5	/awe/	auē	EXLM alas/oh dear	coordinating joint attention
25	17;2.5	/pa ta ta:/	pūrerehua	butterfly	joining in familiar routine
26	17;3	/eja/	mōrena	good morning	joining in familiar routine
27	17;3	/ij:/	hī (hei)	EXLM	joining in familiar routine
28	17;3	/a::/ /ta:::/	awatea	daylight	joining in familiar routine
29	17;3	/wɪ:/	mū	moo	joining in familiar routine
30	17;3	/əwɪʔ/	au	woof	joining in familiar routine
31	17;3	/jao/	iao	miaow	joining in familiar routine

32	17;3	/tetete:/	kokorokorō	cock-a-doodle-doo	joining in familiar routine
33	18;0	/tij/	tore	vagina	referential
34	18;0	/te te/	koekoe	quack	joining in familiar routine
35	18;0	/aʔ/	maa	baa	joining in familiar routine
36	18;0	/tjaʔ/	pērā	like that	joining in by repeating
37	18;0	/ti:hi tihi/	tōhi	toast	referential
38	18;0	/pu:/	pū	pooh	describing world
39	18;0	/ja/ /tija tija/	see ya	(Eng)	farewell
40	18;2	/ija/ /wja eija/ /ja ja ja/ /tja/ /tja/ /eja/	wera	hot	describing world
41	18;2	/mami/	mimi	pee	referring to action
42	18;2	/jɪp/	yep	(Eng)	agreeing
43	18;2	/aiʔ/	āe	yes	agreeing
44	18;2	/tou:/	don't	(Eng)	role playing
45	18;2	/apapa i/	awhiawhi	cuddle	requesting comfort
46	18;2	/ta tati tati/	raiti	light	coordinating joint attention
47	18;3	/papi/	rāpihi	rubbish	joining in by repeating
48	18;3	/peje/	pene	pen	joining in by repeating
49	18;3	/na/ /ne/	nah/no	(Eng)	objecting
50	18;3	/ta ta/	katia	shut (it)	narrating event
51	18;3	/vai/ /wai/	wai	water	coordinating joint attention
52	18;3	/eiei eiei eiei eiei/	heihei [rep]	hen	coordinating joint attention
53	18;3	/aeje/	haere	go	joining in by repeating
54	18;3	/pepi/ /pepe/	Pēpi	baby	Diary*
55	18;3	/kai/	kai	eat/food	Diary
56	18;3	/pae/	Paenui	NAME	Diary
57	18;3	/i:/	Kui	NAME	Diary
58	18;3	/toi/ /toitoitoi/	Toihau	NAME	Diary
59	18;3	/ʌpu/	Kapu	NAME	Diary
60	18;3	/ama/	Amo	NAME	Diary
61	18;3	/po:/	pōro	ball	Diary
62	18;3	/ipi/	hipi	sheep	Diary
63	18;3	/tiji/	kurī	dog	Diary
64	18;3	/tau/	kau	cow	Diary
65	18;3	/pitipiti/	wītipiki	weetbix	Diary
66	18;3	/a nio/	paraihe niho	toothbrush	Diary
67	18;3	/paoa/	paraoa	bread	Diary
68	18;3	/aje/	rare	lolly	Diary

69	18;3	/ana/	anā	EXLM	Diary
70	18;3	/kei/	okay	(Eng)	Diary
71	18;3	/pɾpu/	love you	(Eng)	Diary
72	18;3	/pɾpei/	ka pai	good	Diary
73	18;3	/pau/ /pɾpau/	kua pau	all gone	describing completed event
74	18;3	/emə/	homai	give (to speaker)	request object
75	18;3	/kɔk/ /gɔk/	look	(Eng)	coordinating joint attention
76	19;0	/ta/	ika	fish	referential
77	19;0	/ano/	anō	again	requesting action
78	19;0	/a awa/	nā Awa	Awa's	connecting entity with person
79	19;0	/na neni	nā Nēni	Nēni's	referential
80	19;3	/ŋga:ku//ja:ku:/	nāku	1SG POSS	referential
81	19;3	/mɐmɐi/	mamae	pain	expressing pain
82	19;3	/a:ja/	[Puhij] Ihaia	NAME	referential
83	19;3	/e:mi/	Hēmi	NAME	referential
84	19;3	/ape/	kope	nappy	referential
85	19;3	/eke/	heke	get down	describing action
86	19;3	/tiko/ /piko/	tiko	poo	describing action
87	19;3	/vate/ /pate:/	whare	house	referential
88	19;3	/a ti ti te:/ /pe:ti/	pereti	plate	describing world
89	20;0	/kaŋo/	tango	take (off)	joining in by repeating
90	20;0	/pək e pəke/ /peke/ /pɪke/ /pəke/	peke	jump	singing
91	20;0	/ko/	Koro	Grandfather	joining in by repeating
92	20;0	/pɾni/	pani	ointment	coordinating joint attention
93	20;0	/nono/	nono	buttock(s)	joining in by repeating
94	20;2	/wau/	woah/wau	(Ind)	expressing surprise
95	20;2	/tədə:/ /tədu:/	tūru	chair	referential
96	20;2	/tenei/	tēnei	this	repetition, joining in
97	20;2	/kawa/	kawa	sour	describing world
98	20;2	/ai/	ahi	fire	referential
99	20;2	/ua/	ua	rain	joining in by repeating
100	20;2	/pɾkəpɾka/	pukapuka	book	referential

*Most words taken from diary entries (coded as 'Diary') were recorded without context.

7.3.2 Discussion of Puhī's first words

In tracking the emergence of structures of te reo Māori, I considered the relevance of Gentner's (1982) noun-bias hypothesis (see 2.3.1.1). For this I

analysed the first 25 words in the first-words data set, identifying four categories of grammatical function, as presented in Table 7.3.

My data appears to support the noun-bias hypothesis, in that there were more nouns than verbs in Puhi's first 25 words. However exclamations were far more prevalent than nouns in my data. Even when names and nouns were tallied together, exclamations were slightly more prevalent. This suggests that factors such as salience, frequency, communicative function, and value to the child's social participation might be more significant than conceptual simplicity alone (Tardif et al., 2008).

Table 7.3. Grammatical functions of Puhi's first 25 recorded words

Grammatical function	Number of examples in first 25 words	Percentage
People's names	4	16%
Simple nouns	7	28%
Exclamations	12	48%
Verbs	2	8%

Of Puhi's first 25 words, I categorised 9 as English (including 5 exclamations) and 14 as Māori. This indicates that she acquired her earliest words from her ambient environment as well as from IDT. Turning to the whole of the first-words data set, I categorised 85 words as Māori words; 13 as English; 1 as a Māori-English exclamation (*chur*); and 2 (/wau/ and /u:/) as indeterminate. This indicates that te reo Māori was Puhi's principal productive language by age 20;2, and underlines the significance of IDT (see also Chapter 5) to her LA trajectory. However, the presence of both Māori and English words in the first-words data set signal that Puhi is developing bilingually, even though her principal productive language is Māori.

Most of Puhi's first 100 words are not easily categorised grammatically. Her earliest verbs *kite* 'see' and *mutu* 'finished' appeared to target formulaic chunks including *ka kite* 'will see [you]', and *kua mutu* 'has finished' (see 7.3.3.2). Puhi

also produced bases that often act as verbs in te reo Māori, such as *wera* ‘hot’, *awhiawhi* ‘hug’ and *mimi* ‘pee’ but these also act as nouns (with appropriate shifts in sense) and could not be definitively classified in the absence of initial particles in the first-words period.

7.3.2.1 Social participation: Routines and formulaic language

The first-words data set revealed Puhi’s early production of routinised words which signalled her intention to participate with others in those routines, rather than an intention to express a particular grammatical function. For example, she participated by imitating or recalling words that she had heard in formulaic language such as in songs and books. These included words from all grammatical categories, including nouns such as *ika* ‘fish’ and *awatea* ‘daylight’; an English pronoun, *this*; English and Māori exclamations, e.g., *yay*, *auē* ‘alas’, and greetings and farewells such as *mōrena*, ‘[good] morning’; and *see-ya* (Eng). In each case, Puhi showed her understanding of a routine by participating with appropriate words at appropriate times. For example, at age 12;1, she participated in a game with her mother by approximating the word *this*, as illustrated in Cameo 6.15. At 17;3 Puhi participated in a routine greeting song at Kōhanga Reo. The song was addressed to each child individually, and each child replied to his or her individualised verse by calling out, *Mōrena!*

Cameo 7.1. *Mōrena* song

Age: 17;3

[All singing]	<i>Mōrena Puhi Ihaia, mōrena <[good] morning Puhi Ihaia, [good] morning></i>
Puhi	<i>/eja/ (Mōrena) <[good] morning></i>

Cameos 6.15 and 7.1 both illustrate events when Puhi’s production was motivated by her desire to participate. They signal that Puhi was analysing the communicative functions of the utterances she heard. Other first words that Puhi heard in song, and later produced (both in song and in other situations) was the noun *pūrerehua* ‘butterfly’ and the verb *peke* ‘jump’.

She encountered the words *awatea* ‘daylight’ *mū* ‘moo’, *au* ‘woof’, *iao* ‘miaow’, *kokorokorō* ‘cock-a-doodle-doo’, *ika*, ‘fish’, *āporo* ‘apple’, and *rāpeti* ‘rabbit’ in repeated sentences in favourite books, and produced them during shared-reading sessions and in other contexts. The word *ika* ‘fish’ repeatedly arose in a favourite song and two familiar books that Puhi enjoyed regularly. At age 19;0, Puhi was video-recorded as she searched through a familiar book for a favoured picture of a fish, pointed and repeatedly said /ta/ while looking at me. I interpreted her word in real time as *ika* ‘fish’. Puhi’s utterance and actions indicated her understanding of the word *ika* and its referential function. It also indicated her emerging proficiency at articulating the word, and her preference for a particular picture that she recognised as being related to the word *ika*. This event signalled that Puhi’s acquisition of this word was supported through mechanisms including formulaic language and recurrent practices such as reading and song. Her desire to participate in reading, singing, and interacting using words is also evident.

7.3.3 Analysis of ten indicator words

In order to create a picture of Puhi’s language development over time, I selected 10 words for longitudinal study over the period 10;05 to 30;0 which I refer to as “indicator words”. There were two criteria for my selection: I chose words that made their initial appearance in the first 25 words Puhi used, and words that appeared at least ten times across all three data sets analysed in this chapter. Table 7.4 presents the words, a translation, and the number of times (tokens) they appeared across this period.

The indicator words were revealing in four respects. First, research influence in the data is made apparent by the inordinately large number of times that the name “Nēni” appears (113 times across all data sets), compared to, for example, Māmā or Pāpā (19 times each across all data sets). This is because as researcher, I (Nēni) was present during more recording sessions than any

other person. This leads to an acknowledgement that the data may be skewed generally towards topics, words and structures that arose from interactions with Nēni (me). A second word that appears in much higher frequency than most of the words on this list is *kāo* ‘no’. It is generally accepted across languages that children begin to favour negators like *kāo* as they establish their autonomy at around age 24;0 (University of Illinois Extension, 2015; Holinger, 2012).

Table 7.4. Ten indicator words for longitudinal analysis

	Puhi's articulation (first token(s))	Interpretation	Translation	Tokens (10;0.5 to 30;0)
1	/mama/	Māmā	(KIN)	20
2	/papa/	Pāpā	(KIN)	19
3	/wɪ wɪ/ /wɪ:/	waewae	leg	19
4	/nanan/	Nēni	(KIN)	131
5	/pepe/	pēpē	baby	11
6	/eij/ /ei/ /tjei/	yay	(Eng)	18
7	/aʊ/	kāo	no	97
8	/te:tu:/ /te:te/	mutu	finished	10
9	/ti:ti:/ /tite/	kite	see you	39
10	/awe/	auē	(EXLM)	33

However, I note that *āe* ‘yes’ was even higher in frequency, although it did not appear in my data until six weeks after *kāo*, and thus was not included in my selection. *Āe* appears 270 times in all, nearly three times as often as *kāo*, at 97 times. Third, Puhi's bilingual language socialisation is highlighted in this selection. *Yay* is an English exclamation that expresses joy, approval or excitement (Merriam-Webster) and in Puhi's *whānau*, it was also a component of greetings involving Puhi. *Auē* is a Māori exclamation that expresses astonishment or distress (Williams). An apparently incongruous feature of the list is that it includes only two simple nouns, *pēpē* ‘baby’ and *waewae* ‘leg’. I have shown that common noun types outnumber verb types in Puhi's first 25

words, but most common nouns occurred with fewer than ten tokens across the three data sets, and thus were excluded from my “indicator word” selection.

The following sub-sections present my analysis of the ten indicator words as they appeared in Puhi’s first-words data set.

7.3.3.1 *Māma, Pāpā, Nēni, and Pēpē*

Three kinships terms *Nēni* ‘nanny/grandmother’, *Māmā*, and *Pāpā* appeared as terms of address and reference in the first-words data. As discussed in 6.6, getting to know names, kinship terms and relationships was expected of every *whānau* member, and therefore of Puhi. Her use of the above three terms, and also of *pēpē* ‘baby’ fitted the expected *whānau* pathway in this respect. In this case, the expected pathway is recognisable across many cultures. On three occasions, Puhi appeared to be playing with or practising kinship terms, addressing no one in particular: for instance, she produced /pa:pa ma:ma:/ at 18;2, and then /nene nene nana mama mama/ at 19;1. This may signal that she was experimenting with sounds, or with names and/or with naming, though none of these are clear findings across the first-words period.

7.3.3.2 *Kite and mutu*

Kite and *mutu* were the first verbs that Puhi produced. *Kite* is an experience verb, which Puhi heard frequently in the adult verbal constituent (VC) *ka kite* ‘will see’ (functionally equivalent to *see you* in English). *Kite* appeared in Puhi’s production in farewell routines throughout the first-words period. *Mutu* ‘[to be] finished’ is a neuter verb that occurs in a single video event captured in this period. These words are illustrated in Cameo 7.2 (see over), which also illustrates adults imitating Puhi. Imitation, rephrasing, echoing, and repeating were a feature of the language between Puhi and her interlocutors during the first-words period.

Cameo 7.2. *Mutu and kite*

Age: 17:1

0:00	<i>Puhi is sitting on MH, flicking through the pages of the book. MH demonstrates to Puhi how to turn the pages carefully.</i>
0:40	<i>Puhi /te:te:/</i> <i>Puhi closes the book</i>
0:45	<i>MH Kua mutu <[it] has finished></i> <i>MH Āta huaki + tūpato. <open slowly, careful></i> <i>Puhi opens book.</i>
1:00	<i>Puhi /ti:ti:/ [flicks through the book]</i> <i>...</i> <i>Unc-Awa She's wrecking the book.</i>
1:22	<i>MH closes the book, saying:</i> <i>MH [to Puhi] Kua mutu <[it] has finished></i> <i>MH [to Unc-Awa] Anei Pāpā Awa. <Here Unc-Awa></i> <i>MH tosses the book to Unc-Awa, who is lying on the couch... Puhi leans forward, then turns away from all present and waves towards back window, saying (apparently to no one):</i>
1:40	<i>Puhi /te:te:~/ (Ka kite) <see you></i> <i>Puhi walks over to Unc-Awa. MH leaves the room.</i> <i>Unc-Awa holds a glass of milk for Puhi and she takes several sips. He smiles broadly at Puhi, does pūkana at her... and chuckles.</i>
4:30	<i>Puhi /te:te:/</i>
4:31	<i>Unc-Awa [imitates] tete [laughs]</i>
4:33	<i>Puhi [repeats] /te:te/</i> <i>Unc-Awa Hiahia anō?</i> <i>Puhi returns to Unc-Awa for another drink.</i>
4:40	<i>Pāpā Ka kite Puhi.</i>
4:45	<i>Puhi drinks, puts glass back in Unc-Awa's waiting hand.</i>
4:47	<i>Pāpā Ka kite. Ka kite. [demonstrating, for Puhi to repeat]</i> <i>Puhi turns head, lifting her hand to wave at Pāpā, but then stops mid-wave and makes eye contact with Pāpā. Puhi turns back towards Unc-Awa. She drinks, puts glass in Unc-Awa's hand, and squats to look at the book on ground.</i>
4:55	<i>Unc-Awa [high pitch] tete.</i>
4:58	<i>Pāpā Churchur</i>

At 4:30 and 4:33 Puhi may have intended either *mutu* or *kite*, following on from her utterance and wave at 1:40. At 4:47, Pāpā appeared to be interpreting Puhi's utterance as *kite*, and promoting *ka kite*. Meanwhile at 4:31 and 4:55,

Unc-Awa opted to imitate Puhi's articulation rather than to interpret her intention. At 4:58, Pāpā then reframed Unc-Awa's and Puhi's utterances as an idiomatic Māori-English greeting, *churchur*. Other interpretations are possible, but Cameo 7.2 nevertheless illustrates Puhi's developing understanding and use of the farewell function of *kite*, and the function of *mutu* as it expresses the finished state of an action such as reading a book or drinking.

7.3.3.3 *Auē* and *yay*

The exclamation *yay* occurred repeatedly across the first-words period and *auē* first appeared in a single event near the end of the first-words period when Puhi was age 17;2.5. Both occurred in proto-conversations between Puhi and *whānau* members. For example, when Kui arrived home after an absence of a few hours, she and Puhi greeted each other by taking turns saying *yay*! In another event, Puhi said *auē* when she dropped a toy. Pāpā responded to her with *auē*, and the two then took turns saying *auē*! repeatedly (see Cameo 3.2). Puhi's use of *yay* and *auē* signal her understanding of the shape of conversation in her *whānau*, of the function of *yay* as an expression of joy, and of the surprise function of *auē*.

7.3.3.4 *Waewae*

In two events during the first-words period, Puhi produced /wɪ wɪ/ /wɪ:/ while simultaneously tugging her trousers up to reveal her leg (see 3.6.1.1.3). My real-time interpretation was that Puhi was referring to her leg as /wɪ wɪ/, and was targeting *waewae* 'leg'. Puhi's consistency of simultaneous action and utterance signalled that she understood the connection between the sound she produced and an object (her leg), and further, that making the sound and performing the action was useful in coordinating joint attention with an adult.

7.3.3.5 *Kāo*

Kāo appears five times across the first-words period. In each case, Puhi appeared to use it to disagree or to protest, as an adult would. This signals that she had appropriated the word to express the negative.

7.3.3.6 Summary of indicator-word analysis

Analysis of the ten indicator words across the first-words period reveals that, by 20;2, Puhi had some understanding of the use of *kite*, *yay*, *auē*, and *mutu* in routine contexts, some understanding of *Māmā*, *Pāpā*, and *Nēni* as terms of address, and of the referential use of these terms together with *waewae* and *pēpē* in other contexts. There is negligible evidence that Puhi was analysing the grammatical functions of any of the words but her use of, for example, *kite* in farewell routines indicates that she was making use of words she knew for communicative functions within recurrent practices.

When a longer period – beyond first-words and into first combinations – is considered, the changes in Puhi’s production can be traced to reveal her LA trajectory. For example, Puhi articulated her farewell *kite* as a two-mora utterance a single time at 14;1, and five times at 14;2 (e.g., /tete/ /tite/ and /ti:ti:/). Subsequently, at 16;0, she changed to three-mora articulation, i.e., /ta tete/ /ta titi/ and /tah tete/ (Diary). At this point it became clear that Puhi was analysing the expression, at least phonologically. She appeared to have realised that it was longer than two moras, and had begun to articulate it as a three-mora item. Puhi may also have been analysing the morphological components and syntax of *ka kite*. Although it is not possible to say definitively that this was the case, I chose Puhi’s change to a 3-mora articulation of *ka kite* for the start of the second data set “Puhi’s first combinations”.

7.3.4 Summary of analysis of Puhi’s first words

I identified 100 words that Puhi produced across the ten months between age 10;0.5 and 20;2. I have shown that this data set reflected formulaic language,

including holophrastic utterances that Puhi heard frequently in her environment, and that she produced as single-unit holophrastic utterances. Exclamations featured most strongly in Puhi's 25 earliest words, followed by names and other nouns (combined), and then by verbs, which were significantly fewer than nouns and exclamations. This provides supporting evidence that social and communicative functions (Bloom, 2001; Diesendruck, 2007; Tardiff et al., 2008), and salience (Peters, 2009) are significant in the early acquisition of vocabulary.

Across the first-words period, Puhi applied her first 100 words to a variety of communicative functions including interpersonal, referential and directive functions, and singing. She demonstrated an understanding of: the use of exclamations to express affect (surprise and delight), which is a basic function of this class of words; the referential use of nouns, which is their basic grammatical function; and the use of a negative exclamation *kāo* 'no' to disagree, object and direct. This indicates her desire to participate in the role of a speaker, which she did, for example, by joining in with familiar routines.

A few English words appear in the data set, indicating BFLA development, but also indicating that Māori was Puhi's preferred productive language by 20;2.

7.4 Puhi's first combinations

The appearance of combinations of words and morphs in Puhi's production signals her progress along her LA trajectory. Below, I analyse Puhi's first combinations in relation to the adult grammatical structures that she appeared to be targeting. In particular, I consider Biggs' (1969) argument that the phrase is the basic unit of adult te reo Māori. I also compare Puhi's combinations to Brown's (1973) description that L1-English two-word phrases consist of two content words (see 2.3.1.2). I then analyse combinations comprised of one or more of the ten indicator words selected from Puhi's first words (see 7.3.3), and I consider the communicative use to which Puhi puts her first combinations. This analysis reveals Puhi's progress along her LA trajectory, from 18;0 to 24;0.

7.4.1 Data

The data set “Puhi’s first combinations” consists of all interpretable utterances that were at least two morphs in length, and that were captured when Puhi was between ages 18;0 and 24;0. The period from which the combinations are drawn, referred to as the “first-combinations period”, overlaps temporally with the “first-words period”, which ended at 20;2 (see Table 7.1). A sample of Puhi’s two-word combinations is illustrated in Table 7.5.

7.4.2 Imitation or repetition in the data set

Throughout the first-combinations data there are instances where Puhi imitates or repeats the speech of others. This is not new, as seen in Cameo 7.2, but Puhi’s imitations expanded to include two-word combinations, as shown in Table 7.5.

Table 7.5. Imitated two-word combinations

	Age	Interlocutor’s utterance	Puhi’s imitation	Translation
(7401)	18;2	ka kite	/ta tete:/	ø* will see
(7402)	18;2.5	ka pai	/a pai/	ø was/is/will be good
(7403)	20;1	ko au	/ku au:/	[is] me
(7404)	20;2	kei te pai	/pe pe pai pai/	ø is good
(7405)	20;2	ka kaukau	/a kaukae/	ø will bathe
(7406)	21;1	tērā taha	/... ti: tah/	that side
(7407)	21;1	Pāpā Karl	/ka:ka: kao/	[Grand]uncle Karl
(7408)	21;1	kei roto rā	/təta/	in there
(7409)	21;1	e noho	/e no:/	sit
(7410)	21;3	haramai	/a: mai/	come here
(7411)	22;0	ngā mihi	/a məhəi/	greetings
(7412)	23;1	hei aha	/eijaha:/	never mind
(7413)	23;1	ka pai kōrua	/kai ko:dua/	good, you two
(7414)	23;1	kua kai	/kwa kai/	ø have eaten
(7415)	23;2	kei hea	/kei hea/	where is ø?
(7416)	23;3	he wai	/i: wai/	some water
(7417)	23;3	ka mamae	/ka mamae/	ø will be sore

*ø indicates null subject (see 4.4.7.4)

These examples were useful to my analysis for three reasons. First, imitation provided a good basis for the interpretation of utterances at analysis. That is, if Puhi spoke immediately after an interlocutor and her (Puhi's) utterance bore some resemblance to all or part of the interlocutor's utterance, I assumed that she was targeting that utterance. This was the case with all the examples in Table 7.5. Second, imitation provided useful information about the connection between input and production. It is well-documented that children perceive, learn and reproduce formulaic chunks of language as single units (Tomasello, 2000; see also 2.5.5.5) and Puhi's imitations illustrate one way that this occurred. Third, Table 7.5 illustrates wide discrepancies between a child's articulation and that of an adult. This, in turn, further underlines the complexities of interpreting a young child's language.

7.4.3 Grammatical patterns in Puhi's first combinations

I compared examples of Puhi's combinations to Māori phrases as described by Biggs (1969) and W. Bauer (1993, 1997). As noted in 4.4.4, Biggs (1969) argued that the phrase, consisting of (PART +) Base (+ MOD), is the essential structural unit of te reo Māori. According to W. Bauer (1997), there are three basic phrase types in te reo Māori: nominal phrases (NP); preposition phrases (PP); and verb constituents (VC). By contrast, the basic structural unit of English is the word, and the first combinations of children acquiring L1-English are content-word + content-word combinations (R. Brown, 1973; see also 2.3.1.2).

7.4.3.1 Nominal phrases

Across the first-combinations period, the nominal phrase structure *he* + B appears to become established in Puhi's production. *He* is an indefinite determiner which is used to mark the predicate of a classifying sentence (see 4.4.7.2). The diversity and number of bases that Puhi combined with *he* is greater than with any other particle in the first-combinations data. This alone

indicates that Puhi may have been generating this structure. She combined *he* with bases (B) she acquired in other contexts and was using in the first-words period, e.g., three are (usually) common nouns: *pōro* ‘ball’; *porohita* ‘circle’; *wai* ‘water’; and two are (usually) state intransitive verbs: *mamae* ‘hurt; sore, pain’; *werawera* ‘burn, hot, heat’. *He mamae* and *he werawera* were recorded during a single event. During this event, the input language from the three adults included five tokens each of *mamae* and *wera/werawera* over the duration of the recording session. The adults used *mamae* in various structures, including *ka mamae* ‘it will be sore’; *kei mamae*, ‘[be careful] lest [you] get hurt’; *tō mamae* ‘your pain/sore (lesion)’; and on four occasions on its own with no particle. Adults also used *he wera* on four occasions, and *wera* in several other utterances, including as a modifier in *tō mamae wera* ‘your burn lesion’; in sentences, *i wera tō ringa* ‘your hand got burnt’ and *i wera i konā* ‘it got burnt there [on your hand]’. There were no instances of *he mamae* or *he werawera* in the adult input in this event. Yet Puhi (aged 23;1) produced one clear token of *he mamae* and two clear tokens of *he werawera* and, given her still-developing articulation skills, two further possible tokens: /a wirawira/; /e wijawiðā?/. As this was achieved without direct repetition or imitation of adult production of either type, it suggests that she generated *he werawera* and *he mamae* herself. This is the clearest indication of structure analysis and application from Puhi across the combinations period.

While *he* is in evidence in the first-combinations data, other determiners are conspicuous by their absence. There is a single token of *ngā*, but *te* and *a* are absent, despite all three determiners being high-frequency forms in adult sentences. This may be because *te*, *ngā* and *a* usually occur medially rather than initially in sentences. As such they are often unstressed, and so not as easily heard as VC particles, which are usually sentence-initial and thus more noticeable. In addition, there is evidence that traditional Māori prosody is changing (Keegan, Watson, Maclagan, & King, 2014). If these changes include

a move away from traditional mora-timed rhythm towards the stress-timed rhythm of NZ English, this may cause particles to be less salient in speech, particularly mid-sentence. At present, however, this remains a hypothesis that warrants further research.

Cameo 7.3 illustrates adult use of NPs with and without determiners. The NPs in the cameo are underlined and analysed grammatically.

Cameo 7.3. NPs in input and productive language

Age: 21;0

Puhi is in a car with Pāpā and MH next to a paddock where horses are grazing. Puhi looks at Pāpā, then at MH, saying:
Puhi /iɔ/ (hoiho) <horse>
Puhi turns back to look at horses, babbling:
Puhi /dl/ /etupɪt/ [babble]
One of the horses is standing by a fence about 3 metres from car, directly to Puhi's left.
MH Hoiho. <horse> NULL PARTICLE NP
Puhi slaps car window as if to try and attract its attention.
Pāpā ...Kia ora Hoiho. <hello Horse> NP = PROPER NOUN
Puhi /iɔ?/
Pāpā He aha te tangi o te hoiho? NP = DET SG + N
 <What noise does a horse make?>
Puhi shakes her head slightly as a horse might and makes a horse noise.
Pāpā [laughs] Anō?
Puhi pauses, looking at horses, then repeats horse noise, as above.
Pāpā Tiro ki ngā hoiho. NP = DET PL + N <Look at the horses>
 He hoiho nui nē? NP = DET + N + MOD
 <[They are] big horses, aren't they?>
Puhi looks at Pāpā.
Puhi /aɪɔkɔt/ [babble] [calls to horse] /i:ɔ iɔ/
Pāpā Āe. <Yes>
MH Āe, e rua ngā hoiho, nē. NP = DET PL + N
 <Yes, [there are] two horses aren't there?>
Puhi /ta tite/ (ka kite) <See you later>
Pāpā Ka kite Hoiho NP = PROPER NOUN <See you later, Horse>
Puhi [loudly] /iɔ/ (hoiho) <horse>

Cameo 7.3 also illustrates a second possible reason that *te* and *a* were not identified, i.e., that Puhi's articulation made interpretation difficult and some particles may have been missed at transcription. For example, at 0:00 Puhi says /aiokat/. It is conceivable that the first part of the utterance (underlined) consists of /a/ + /io/, where /a/ is a proto-particle and /io/ is *hoiho* 'horse'.

A third possible reason for the lack of nominal particles in Puhi's production is the large number of particles in te reo Māori. Each carries information about grammatical function, and class-specific information such as tense, or number and definiteness. It may be the case that Puhi has not yet sorted out the functions of each, and therefore sometimes misses them out. A few of Puhi's NP approximations were inconsistent with the adult (PART +) B (+ MOD) form. These are discussed in 7.4.4.

By 24;0 then, Puhi was generating structures that approximated the adult nominal-phrase structure with the form PROTO-DET + B, where the proto-determiner she used most often was an approximation of *he* and the base was one of a small set of common nouns or nominalised state intransitive verbs. The determiner *ngā* was also emerging.

7.4.3.2 Preposition phrases

Whereas Puhi tended to produce common nouns without particles across the combinations period, she more often produced names in combination with particles. For example, at around the age of 19;0, while one-word phrases continued to dominate Puhi's productive language, a recurrent combination appeared that was interpreted as *nā Nēni* and *mā Māmā*.

(7418) nā Nēni
 act:A NP
 Nēni's

(7419) mā Māmā
 Int:A NP
 For Māmā

In my role as Puhi's grandmother I interpreted Puhi's combination as indicating possession. In my role as researcher I analysed the combination by comparing it to an adult possession predicate in which *nā* + NP indicates actual (ACT) possession and *mā* + NP indicates intended (INT) possession as illustrated in (7418) and (7419) where NP is a personal noun and the possessor.

Age 19;0

- (7420) /a.awa awa/ a Awa 'Awa's' (name reduplicated or repeated)
- (7421) /ne nene tsna/ nā Nēni tēna 'That [is] Nēni's'
- (7422) /n nene/ nā Nēni 'Nēni's'
- (7423) /na nene/ nā Nēni 'Nēni's'
- (7424) /a: e:ni/ nā Nēni 'Nēni's'
- (7425) /na nene/ nā Nēni 'Nēni's'

Age: 19;3

- (7426) /ne: nene/ 'Nēni's'
- (7427) /ne nenei/ /ne nenei/ 'Nēni's' 2-06-19 Age: 20;2
- (7428) /ne nenei/ 'Nēni's' [approaches camera]
- (7429) /ne: nenei/ /ne: nenei/ 'Nēni's' [indicates Nēni's clothing item]
- (7430) /pa pui/ 'Puhi's' [no obvious indication of possessee]
- (7431) /pa papa/ 'Pāpā's' [looks towards Papa's room]
- (7432) /pa: pa:pa/ 'Pāpā's' [no obvious indication of possessee]
- (7433) /pa: pa:pa/ 'Pāpā's' [no obvious indication of possessee]
- (7434) /pa: pa:pa/ 'Pāpā's' [swings hand and looks towards Papa's room]
- (7435) /a awa/ 'Awa's' [indicates clothing item]
- (7436) /a: awa/ /a: awa/ 'Awa's' [indicates clothing item]
- (7437) /a amo/ 'Amo's' [looks at clothing item]

In examples (7420) to (7437), and also (7438) to (7444) below, Puhi:

- produced an utterance that was interpreted as a full possession sentence: /na nene tsna/ 'nā Nēni tēnā'
- probably imitated a possession form produced by the adult she was interacting with /jaku/ 'nāku'

- appeared to experiment with possessive preposition phrases, as suggested in /a.awa/ /n nene/ /a: e:ni/ /na nenei/

Puhi's combinations share structural and phonological similarities with adult possessive preposition phrases. However, there were some significant differences. Adult grammars describe the possessive preposition as being drawn from a small, closed group of four (*mā, mō, nā, nō*). Even when Puhi's articulation is taken into account, her proto-prepositions were much more variable (i.e., /a/, /a:/, /pa:/, /ne:/, /na/, /nā:/, /ma/, /ma:/). These forms have the phonological structure (C)V(V). This may signal that Puhi had developed an understanding that a syllable of this form usually goes before a base in te reo Māori, but was unsure of the rules governing those syllables, and so was trialling proto-particles (see 7.4.3.2) rather than specifically trialling possessive prepositions. This is consistent with the notion that proficiency with phonology and syntax develop together, and are inter-related (Peters, 2009; see 2.3.1.2). If Puhi's trial rule was to make her own proto-particles alliterate with the base (cf. *a Awa* (7420), *ne nenei* (7421), and *pa pui* (7430)), this would explain the instances where there was no indication of a possessee in the context. Further evidence from Puhi's VCs suggest supports this latter, non-possessive explanation.

Two further preposition phrases emerged in the first-combinations data, as follows:

(7438)	kei	konei
	PREP PRS	LOC N
	at	here
	'ø is here'	

(7439)	kei	hea
	PREP PRS	LOC Q
	at	where
	'where is ø'	

The NP complements in examples (7438) and (7439) consist of local nouns (*konei*, *hea*), which require no determiner. Thus, all of the examples analysed in this section except one have the same PROTO + N structure. The exception is a 3-word structure, *nā Nēni tēnā*, which is discussed further in 7.4.4.

There are two further differences between Puhi's proto-phrases and adult PPs. Whereas the NP complements in adult PPs are varied, Puhi's NPs are limited to names and local nouns, which do not require determiners in the target adult structures. Adult PPs also contain a range of prepositions that did not appear in Puhi's first combinations, including: *mō*, *nō*, *i*, *ki*, *hei*, *ko*, *e*, *a*, and *o*.

Thus, by 20;0, PROTO + NAME structures had emerged in Puhi's production that approximated adult preposition phrases. Puhi's proto-prepositions were variable (C)V(V) syllables that usually alliterated with the name. By 22;0, *kei* + LOC N had emerged, where the local noun was either *konei* 'here' or *hea* 'where'.

7.4.3.3 Verb constituents: TAM + V (+ mod)

A verb constituent (VC) is comprised of a tense-aspect-mood marker (TAM), a verb (V) and sometimes a modifier (mod) (see 4.4.4.3.). There are ten main TAMs: *ka*, *kua*, *i*, *e...ana*, *kei te*, *i te*, *e*, *me*, *kia*, *kei* (see 4.4.4.3.1). In addition, imperative *e* is sometimes referred to as a TAM (Harlow, 2007) but in my analysis is referred to as an imperative marker (IMP) after Bauer (1993). Puhi's use of imperative *e* + V is discussed in 7.4.3.4.

The TAM + V (+ MOD) structure appears in high frequency in the input data. Many of Puhi's first combinations, including the following examples, were interpreted as TAM + V (+ MOD) structures, and those interpretations provide the basis for the linguistic analysis. There are multiple tokens of examples (7440) to (7443) in the data, and two tokens of (7444). Articulation varied, and the example given is the first recorded example.

(7440) 18;0

/ta tete/

ka kite

TAM see

'ø will see [you later]'

(7441) Age 18;2

/pa pai/

ka pai

TAM good

'ø is/was/will [be] good'

(7442) Age 18;2

/pa: pa:u/

kua pau

TAM be used up

'ø has [all] gone'

The following examples differ from (7440) to (7442) in the number of moras that Puhi produced, but the basic TAM + V structure of the phrase remained.

(7443) Age 20;3

/pe pe pai pai/

kei te pai pai

TAM good good

'[That is] good'

(7444) Age 19;1

/to ta/

k[ia]¹ ora

TAM life/health

'Greetings' (Lit. 'Be healthy')

Across the combinations period, the TAMs in (7440) to (7443) appeared with other verbs in Puhi's speech, so that by age 24;0, she had produced the following TAMs with the range of verbs shown below:

ka + V (*V = kite* 'see', *pai* 'good', *kaukau* 'bathe')

¹ *Kia ora* was often pronounced /kjoʔa/ or /kja ɔʔa/ by adults in my study.

kua + V (V = *pau* 'be used up', *kai* 'eat')

kei te + V (V = *pai* 'good', *tiko* 'poo')

kia + V (V + *ora*)

Thus the TAMs *ka*, *kua*, and *kei te* each appeared with more than one verb, and one verb, *pai*, appeared with more than one TAM in the first-combinations data set. However, the high frequency of these particular combinations in the input data indicates that Puihi's use was probably holophrastic, rather than generated. Nevertheless, each occurrence of the structure was linked with others across her production and input. Together they signal Puihi's growing proficiency with the VC structure and therefore signal progress along her LA trajectory. The fact that most of her particles had the form (C)V(V) and alliterated with the base indicates that she was analysing the structures she heard. This in turn reinforces the proto-particle analysis suggested above for preposition phrases, rather than the possessive-particle analysis.

If the analysis presented above accurately reflects what Puihi was targeting in her production, then five of the main TAMs, *i*, *i te*, *me*, *kei* and *e...ana*, were not present in her first combinations. In terms of the order of emergence of grammatical structures this means that, *ka*, *kua*, *kei te*, and *kia* appeared first in her speech, presented here in the order of their frequency in my data. Each TAM was combined with one of a small set of verbs in combinations that occurred mostly as formulaic units in the input data. If analysis also takes into consideration the significant phonological differences between adult TAMs and Puihi's approximations, then the latter can be characterised as more variable, since they included, /ta:/, /te:/, /ta/, /te/, /to/, /pa:/, /pa/, /pe pe/, and /a/. Either analysis indicates that, by 24;0, Puihi was generating PROTO-TAM + V structures, which approximated adult VCs.

7.4.3.4 Imperative verb constituents

Imperative sentences (see 4.4.8.3) occurred frequently in IDT in my data. Puhi's imperative combinations had the forms: (*e* +) V(DUP) (+ *mai*) for intransitives, and: V.PASS for transitives, unless the base was bound to a directional particle.

Puhi produced one possible token of a V.PASS structure, several possible *e* + V combinations, and several tokens of one V.DUP type (*pekepeke* 'jump'). She also produced one V + *mai* type and two V.DIR types. These are illustrated in examples (7445) to (7450). Although several of these examples are written as one orthographic word, all except *haere* are combinations of sorts, as indicated in the heading of each. The one-word imperative *haere* is included to illustrate the full range of imperative forms in the first-combinations period.

V.PASS: *kati.a*

(7445) Age 18; 2.5

/tata/

kati.a

V.PASS

'shut [it]'

V.DUP (reduplication): *pekepeke*

(7446) Age 20;0

/pəke pəke/

pekepeke

'jump [up and down]'

Bound V.DIR particle: *waiho* = *wa* + *iho*

(7447) Age 21;0.5

/wa:hɔ/

wa.iho

V+DIR

'leave [it] down [there]'

Some imperative VCs require the phrase-initial filler particle *e* in order to meet the three-mora rule (see 4.4.4.1). Examples (7445) to (7447) above meet the

three-mora rule without *e*, but *e* is required in examples (7448) and (7449). In *V* + *mai* imperatives, *e* is not required because the directional particle *mai* lengthens the phrase beyond the minimum three moras.

e + *V*: *e heke*

(7448) Age 16;0

/e ete/

e heke

IMP descend

‘get down’

e + *V*: *e noho*

(7449) Age 21;1

/e nɔ:/

e noho

IMP sit

‘sit [down]’

V + *mai*: *hoki mai*

(7450) Age 21;1

/ɔki mai/

hoki mai

return hither

‘come back’

In Cameo 7.4, Puhi used the imperative sentences *hoki mai* and *e noho*, in context. She directed /e nɔ:/ (*e noho*) ‘sit down’ to the dog, having heard Awa using the same structure in this way. In other events, Puhi appeared to be directing imperatives to herself. Since they were often directed to her, she may have acquired and used certain imperative sentences in the same way. Cameo 7.5 illustrates this possibility.

Cameo 7.4. Imperative *e noho*

Age: 21;1

Several young adults and Puhi are playing with a dog. Puhi calls out loudly and the dog moves away.

Puhi /əki mai/ (hoki mai) <come back>

Puhi approaches the dog and he runs off. Puhi runs after him, calling out:

Puhi /əki mai/ /iki mai/ (hoki mai [rep]) <come back [rep]>

...Awa scratches dog's chin.

Awa Anei ki raro. Titiro. Pēnei. <Here, under [his chin]. Look. Like this.>

Dog walks away.

Awa E noho. E noho. <Sit. Sit.>

Dog pauses.

Puhi /e nɔ:/ <e noho>

Puhi's *e* + *V* combinations are consistent with the grammatical form of an adult imperative. They had a range of communicative functions (see 2.5.5.7) in her production, not limited to commands, but also as narrative or request, and this is also consistent with adult use, as illustrated in Cameo 7.5.

Cameo 7.5. Self-directed imperative

Age: 20;0

Puhi seats herself astride rocking horse and rocks it, looking at Koro and smiling...

Eye contact between Puhi and Koro.

Puhi /ete/ /e.ete/ [heke. e heke] <descend>

Koro Kia tūpato. <be careful>

Puhi dismounts.

In Cameo 7.6, the communicative function appears to lean towards a request, possibly for permission, for an audience, or for reassurance, in the nature of, *May I jump? Look, I'm going to jump, or Shall I jump?* In some instances, Puhi may be producing *peke* 'jump' but intending *piki* 'climb', or generalising the meaning of *peke* to include the meaning of *piki*. This may be because the phonemes /i/ and /e/ have converged since English contact, (Keegan et al., 2009). Whether Puhi intends *piki*, or a blend of *piki* and *peke*, the possible

functions are the same. I note here that *e* in the above examples is consistent with the (C)V(V) form of other proto-particles discussion in this section, although she does not make these alliterate as she did the others.

Cameo 7.6. Imperative *e peke* as narrative or request

Age: 21;1

Puhi walks over to coffee table near window and puts her foot on a large cube toy on floor, looks at Kui

Puhi /*e peke*/ (rising intonation)

Māmā *Nē* <is that so>

Puhi climbs onto toy, leaning on coffee table for support.

Puhi /*e peke*/ (no rise in intonation)

Cameos 7.4 to 7.6 illustrate that Puhi was developing an understanding of the grammatical forms and communicative functions of imperatives.

Across the combinations period, high-frequency types of *V + mai* are present: *hoki mai* ‘come back’ (Lit. ‘return hither’), of which there are five tokens, all from the same recording session, and *haramai*, a well-established adult contraction of *haere mai* ‘come here’ (Lit. ‘go hither’), which is recorded once across the combinations period (but appears both before and after this period). *Haramai* is written as a single word, as are *homai* ‘give [me]’ (Lit. ‘give hither’) and *waiho* ‘leave [it]’ (Lit. ‘put down’). *Ho-*, *hara-* and *wa-* are all bound bases. *Homai* is present in the data both before and after Puhi’s first-combinations period, but not in that data set.

I include one further example with the imperatives. *Whakamaua* is an imperative combination comprised of a base, *whakamau* ‘to wear/attach’ and the passive suffix *-a*. This item occurred frequently in the input data as a single unit in dressing routines, and also in the research context whenever I attached the portable microphone to Puhi’s clothing. It was in this latter context that Puhi approximated the term twice while objecting to having the microphone attached²

² I responded to Puhi’s objection by holding the microphone in my hand until she was happy for me to attach it at a later time.

(see Cameo 7.9 for further context). Puhi omitted the adult-required passive suffix, as did I, in the same event.

(7451) Age 23;1
/pakamau/
whaka- mau
cause to wear/attach
'attach'

This is a reminder that adults did not always use 'adult-acceptable' structures, particularly in informal IDT. One reason is that, as members of their social groups, children influence the speech of adults, just as adults influence children's speech in real time (see 7.4.2).

The examples above signal that, whether or not Puhi was analysing syntax in her language environment, she was absorbing quite complex rules about imperative formation: she used *e* appropriately according to phonological rules for phrase length; she chose the passive form for transitive verbs, but not for intransitive verbs. She also used adult-acceptable exceptions: e.g., *waiho* and *homai* with no passive suffix despite transitivity. This means that the foundation for being able to use these complex patterns in a generative way was established by 24;0, even if Puhi used them only as holophrases across the first-combinations period.

7.4.3.5 Base + base combinations

Whereas function words are usually absent in L1-English combinations (Israel et al., 2000), they featured in most of Puhi's first combinations, which were mostly consistent with Māori phrases. However, Puhi also produced some combinations that were more similar to L1-English combinations. One was a partial imitation of an adult's utterance *he pūngāwerewere kei roto* 'there is a spider inside', which Puhi reproduced as /wedewed doto/. This presumably consists of the second half of *pūngāwerewere* 'spider' and *roto* 'inside'. Puhi's omission of the locational particle *kei* resulted in a noun + location structure,

comparable to an L1-English structure, with no function words. I note however, that her utterance follows Māori word-order.

He pūngāwerewere kei roto

(7452) Age 22:1

Puhi:	/wedewed	dɔtɔ/
Interpret:	(werewere	roto)
Word types:	N	N
Sent	PRED	ADV
Tr:	'spider inside'	

Three content + content verbal structures are shown in (7453) to (7455).

(7453) Age 23;3

Puhi:	/hərəi	te:nei/
Interpret:	(horoi	tēnei)
Word types:	V	N
Sent	V	OBJ
Tr:	'wash this'	

(7454) Age 23;3

Puhi:	/iʔaʔ	a:fi/
Interpret:	(hia	awhi)
Word types:	V	V/N
Sent:	V	MOD/OBJ
Tr:	'want hug'	

Examples (7453) and (7454) are consistent with VO order in null-subject adult sentences of te reo Māori, or in imperative sentences with passivised verbs such as *horoia tēnei* 'wash this'. However, since function words and morphs are absent from these examples, they are also comparable to an L1-English structure of the form V + OBJ.

Example (7455) is perhaps comparable to an L1-English two-word structure of the form SV such as 'I going', from which a function word such as 'am' is omitted.

(7455) Age 21;1 2012-09-09

Puhi: /firangi au:/

Interpret: (pīrangi au)

Word types: V PRON

Sent: V SUBJ

Tr: 'I want'

Two further structures produced by Puhi are not consistent with the (PART +) B (+ MOD) phrase structures. In order to address these, I explore the communicative functions to which Puhi put her first combinations in 7.4.4 below.

7.4.3.6 Forms that indicate BFLA

Puhi's first combinations include two English two-word utterances, one mixed and one paired utterance, as well as numerous Māori-language utterances (see 5.3.4). This indicates that between 18;0 and 24;0 her bilingual development continued, even while te reo Māori continued to be her preferred productive language.

7.4.3.7 Summary of emerging grammatical patterns

A recurrent phrasal structure emerged in Puhi's production between 18;0 and 24;0. The structure had the form (PROTO +) B (+ MOD). The form of Puhi's proto-particle was mostly consistent as a (C)V(V) syllable, but differed from the closed sets of adult particles in that it was more variable, and did not include all particles in the adult sets. Also, Puhi appeared to have developed a trial-and-error rule that meant her proto-particles alliterated with the bases. Imperative sentences with the form (e +) V (+ *mai*) and V.PASS had also emerged by 24;0.

7.4.4 Communicative functions and Puhi's first combinations

Just as Puhi's first words included examples of recurrent, formulaic language, so did her first combinations. Recurrent communicative practices such as those discussed in Chapter 6 provided Puhi with opportunities to repeatedly hear and practise high-frequency combinations. These included (PART +) B (+ MOD) forms, e.g., *ka kite* 'will see [you]' (see 7.4) and kinship terms. Puhi also

generated combinations that she was not likely to have heard before, and which were adult-acceptable. These included kinship terms and question tags, which are analysed in 7.4.4.1 and 7.4.4.2.

7.4.4.1 Kinship terms

Cultural practices of naming and kinship reference are complex in Puhī's *whānau*, and are integral to such cultural values as *whakapapa* 'genealogy' and *whanaungatanga* 'connections' (see 4.2.3). Puhī's *whānau* had expectations that she would appropriate all these practices and values (see 6.5). Throughout my data, KIN + NAME units are frequently in use when *whānau* members refer to each other, coordinate attention, and connect people with each other, and with places and with things (see 4.2.3.4). Arguably, the KIN + NAME structure is a well-formed structure of te reo Māori that provides a pattern for terms of address, just as TAM + V is the structure that provides a pattern for VCs. There is anecdotal evidence of some KIN + NAME use by native speakers for at least 60 years (Hohi Rangi, personal communication, 1988; Leon Hunia, personal communication, 2013) and the practice is now widespread.

While Puhī's first-words data revealed kinship terms (e.g., Māmā, Pāpā, Nēni) and names (e.g., Awa). Her first combinations also featured a KIN + NAME structure from around 21;0, for example:

(7456) Age 21

/wa iki/
whaea Niki
KIN NAME
'Aunty Niki'

(7457) Age 21;1

7:00 /ka:ka: kao/
pāpā Karl
KIN NAME
'Uncle Karl'

(7458) Age 22;2

/...fai amɔ/

whaea Amo

KIN NAME

'Aunt Amo'

Examples (7456) and (7457) are taken from an event in which Puhi produced two kin + name combinations. In the event, shown in Cameo 7.7, Puhi recognised her grand-aunt, Nēni-Niki in a photograph and said /wa ɪki/ "Whaea Niki", which is how she heard Nēni-Niki referred to by other *whānau* members

Cameo 7.7. KIN + NAME structure

Age: 21;1

Puhi sees a photo of Nēni Niki on the wall.

Puhi /wa ɪki/ (Whaea Niki)

Puhi smiles and turns to MH.

MH Nēni Niki.

Puhi [smiles] /ae/ <yes>

MH Kua haere ki te mahi. <[She] has gone to work>

Puhi /ae/

MH Haere a Nēni Niki ki te mahi. <Nēni Niki [has] gone to work>

Puhi /ɪki/ (Niki)

MH Nēni Niki

Puhi /ae/ <yes>

Puhi /me.i/ (mahi) <work>

MH [points to photo] Pāpā Karl.

Puhi [imitates] /ka:ka: ka°/ (Pāpā Karl)

MH Ko Pāpā Karl, nē. Kua haere a Pāpā Karl ki te mahi.

<That's Pāpā Karl, isn't it? Pāpā Karl has gone to work.

Puhi /ae/ <yes>

I interpreted Puhi's utterance and affirmed it, following up with another appropriate kinship term *Nēni* + name. I then pointed to and named Puhi's grand-uncle in the same photo, *Pāpā Karl*, and she repeated after me. Her use of KIN + NAME structures, both in imitation (*Pāpā Karl*) and spontaneously (*Whaea Niki*), signals her recognition of absent *whānau* members and knowledge of how to refer to them. With regards to her *whanaungatanga*

trajectory, this signalled development towards, and appropriation of, values and practices concerning names and kinship reference, and getting to know her wider *whānau* (see 6.6). In regards to Puhi’s LA trajectory, the event provided evidence of progress from using only single kinship terms and single names across the first-words period, to using longer, formulaic single-unit *whānau* terms.

7.4.4.2 Question tags

From birth, Puhi’s *whānau* encouraged her verbal response by speaking to her, then pausing to wait for her response; and through their use of questions, followed by a pause for response. This included the ubiquitous *nē*, *nērā* (Māori) and *eh* (NZE) that can be used both holophrastically and as question tags at the end of most utterance types (Ka’ai, 1990; Meyerhoff, 1994), and that were high-frequency items in my data. In the context of Puhi’s first combinations, the three words are synonymous.

Diary entries and video recordings document that Puhi began to regularly tag *eh* onto her otherwise single-word utterances by 18;2, and *nē* appeared in my data as an imitated holophrase at 22;2 and regularly thereafter as a tag question. Puhi appeared to employ the terms to elicit agreement and “invite participation” from *whānau* members (Ka’ai, 1990).

In examples (7459) and (7460) *eh* appeared at the end of Puhi’s utterances, which was consistent with *whānau* norms in both English and te reo Māori.

(7459) Age 21;1.5

/nini eʔi/

Nēni ei

NAME Q

‘Nēni eh’

(7460) Age 23;0.5

/weðaweðə? ei/

werawera ei

hot Q

'hot eh'

In Cameo 7.8, example (7460) is shown in context. Kui and I warned Puhi away from the hot iron with the word *wea* 'hot' and its reduplicated form, *werawera*. Kui then tossed the towel off the board in an attempt to keep Puhi away from the hot iron. Puhi said *werawera* once, then again, with no response from any of the three adults present. The third time, Puhi added the tag, *eh*, signalling her knowledge of its use to elicit a response. Kui responded by telling Puhi to move away.

Cameo 7.8. Using *ei/eh* tag to elicit a response from interlocutor

Age: 21;1

Kui is ironing clothes. Puhi picks up a towel and loads it onto the ironing board.

Puhi /weðaweðə/ (*werawera*) <hot>

Kui pushes towel.

Kui *Kei te pai.* <It's OK>

Puhi pushes towel.

Puhi /weðaweðə/ (*werawera*) <hot>

Puhi gathers up the end of the towel hanging over the edge and loads it onto the ironing board. MH laughs.

Puhi /weðaweðə? ei/ (*werawera, ei*) <hot, eh>

Kui lays towel over the ironing board.

Kui ...*nuku. Me nuku.* <...move. You should move>

Puhi's use of *eh* in Cameo 7.8 signals that she had isolated and analysed the word in her language environment, and had appropriated both its syntactic placement and its communicative function of requesting continued participation from interlocutors.

7.4.4.3 Summary of communicative functions

Puhi's use of both formulaic language and generated combinations signalled her developing understanding of and proficiency with communicative functions

of language. She used formulaic terms such as *ka kite* ‘will see [you]’ appropriately in farewell situations. Her use of KIN + NAME terms signalled that she was getting to know her wider *whānau* and that she was appropriating values and practices concerning names and kinship reference. She generated combinations with question tags which indicated her understanding of their use in maintaining conversation by requesting continued participation from interlocutors.

7.4.5 Analysis of indicator words

In this section I return to the set of ten indicator words, identified in 7.3.3. I analyse their appearance in Puhi’s first combinations in order to explore ways in which her LA progressed since their initial appearance in the first-words period.

7.4.5.1 Māmā, Pāpā, Nēni and Pēpē

The first-combinations data revealed *Māmā*, *Pāpā*, *Nēni* and *Pēpē*, and other kinship terms being used in four ways: holophrastically, as terms of address and referral, and to coordinate attention; in experimental preposition phrases (see 7.4.3.2); as an idiosyncratic politeness tag, combined with the simple nouns *rare* ‘lolly’, *wai* ‘water’ and *pūtu* ‘boot’, and with a verb *tītiro* ‘look’; in KIN + NAME structures (see 7.4.4.1); and in B + B structures. This section discusses Puhi’s idiosyncratic tag, which appeared in my data at 19;0, and B + B structures which appeared at 22;0.

Idiosyncratic *māmā* tag: request for lolly from an older cousin

(7461) Age 22;0

Puhi: /jaje mama/

Interpret: (rare māmā)

Gloss: lolly TAG

Tr: lolly (?)please

Idiosyncratic *māmā* tag: request for water: Addressing Nēni

(7462) Age: 22;1

Puhi: /tɪtiro ma:ma/

Interpret: (titiro māmā)

Gloss: look TAG

Tr: look ?please

Puhi always addressed her mother as *Māmā* and Puhi's mother reported that she never noticed anything unusual with regards to Puhi's use of the term (interview, 2013). However, Puhi also used *Māmā* when addressing people other than her mother, such as when requesting, for example, water, food or attention. It was possible that Puhi was experimenting with *Māmā* as a general address term, a general term of endearment, or as a politeness tag. Regardless of which is closest to her intention, her consistency in using it at the end of a request signals an emerging understanding of the rule-governed placement of words, and their communicative functions. It also signals Puhi's creative use of language as she appropriated words and structures and used them within her own understanding of her world.

At 19;0 Puhi produced (7421) /ne nene tsna/, possibly targeting *nā Nēni tēnā* 'That [is] Nēni's'. Similar to this structure were two B + B utterances comprised of a name and a demonstrative pronoun. *Māmā tērā* appeared at age 22;0, and *Amo tērā* at 22;2. This (PROTO) + NAME + *tērā* structure is consistent, in some respects, with both Māori adult forms and with L1-English two-word forms. Analysed in relation to the adult structures such as *mā Māmā tērā* 'that is for Māmā', or *ko Māmā tērā* 'that is Māmā' then it could be said that Puhi was targeting one or other of these structures but sometimes omitted a particle. Analysed in relation to L1-English two-word structures, the latter two of Puhi's utterances can be compared to two-word strings with the structure pronoun + name, such as *that Amo* or *that Daddy*, from which function words (e.g. *is*) have been omitted.

7.4.5.2 *Kite* and *mutu*

The formulaic farewell *ka kite* ‘will see [you]’ heralded the start of the combinations period with its (PROTO +) B (+ MOD) form. Puhi continued to use this combination as a holophrastic farewell across this period. Although the combination itself is formulaic, and Puhi consistently used it within those parameters, there is evidence that she appropriated and used it innovatively. In an event recorded at age 18;0, Puhi flicked through a book, closed it, waved to the back cover and said /ti titi/ /ja/ /tija tija/. These utterances were interpreted at transcription as “*ka kite*”, “[*see-ja*”, and “*see-ya see-ya*”. Whether she was genuinely attempting to interact with the book, or was intending to demonstrate humour by bidding farewell to it, her actions and utterances signalled that she had appropriated synonymous formulaic farewells, in both her languages, to express what she wanted to say in an innovative way and in a recognisable context.

Mutu is not captured either as a single word or in combination across the combinations period. However, it appeared in /kau mautu/ and /ku mutu/ combinations within three weeks after that period ended.

As with *ka kite* above, Puhi appeared to be targeting a formulaic unit *kua mutu* ‘has finished’, and used it to indicate a finished state. This signals her deepening understanding of the form and pragmatic function of this formulaic unit.

7.4.5.3 *Auē* and *yay*

The exclamations *auē* and *yay* appeared regularly throughout the first-combinations data as holophrastic utterances. During this period, Puhi reduplicated *auēauē* as a single utterance. Across my data there were many instances of reduplication, which is common in te reo Māori. Puhi may have been demonstrating novelty by using *āue* as a reduplicated form. For example, at a birthday event, Puhi (age 22;0) pointed at a table set for a celebration,

while looking up at me and exclaimed: /aweawe ðeðe ha:ði/ /haðihaði/ (*auēauē*, ...*hari +hari hari*) (See Figure 7.1.) Puhi's utterance, finger-pointing and eye contact signalled her developing ability to coordinate attention with interlocutors using multi-modal semiosis, that is, by integrating these communicative practices. Her production of *auēauē*, and of *harihari* 'happy-happy', signalled her progression towards adult-acceptable reduplication in te reo Māori. It also links to her use of song in her *kapa haka* trajectory (see 6.5) and her *whanaungatanga* trajectory (6.6).

Figure 7.1: "Hari hari hari"

7.4.5.4 Waewae

In the first-combinations period Puhi appeared to target *waewae* 'leg' and as the period progressed, her articulation changed from /wɿ wɿ/ to /wawae/ as she more closely approximated adult-articulation. Analysis across the first-words and first-combinations period thus links the events, and the initial, first-words incident of *waewae* came to be significant as later instances in Puhi's production came to presuppose the first. Just as Puhi used *waewae* holophrastically in the first-words period, so this continued through the first-combinations period. This was consistent with her holophrastic use of common nouns generally up to age 20;02.

7.4.5.5 *Kāo* and other negative forms

Puhi used *kāo* holophrastically across the combinations period to disagree, to disapprove, and to object. For example, when a *whānau* member was departing, Puhi expressed objection with *kāo*; when offered a drink of water, she turned it down with *kāo*; and when I attempted to attach a portable microphone to her clothing, she objected by saying *kāo*. In some events she reiterated the word two or more times, in succession, pausing between each iteration. Up to age 19;3, *kāo* was the only negative verbal form in my data.

The full range of negative types in Puhi's production to age 23;1 are presented in Table 7.6, and these are then analysed in relation to adult structures.

Table 7.6. Inventory of negative forms to 23;0.5

(a)	Puhi's utterance	Interpretation
(b)	/kaɔ/	<i>kāo</i>
(c)	/e kaɔkaɔ/	<i>e kāokāo</i>
(d)	/naɔ/	blend of 'no' and <i>kao</i>
(e)	/ka:e kau/	<i>kare kau</i>
(f)	/kaɔkaɔkaɔ [name]/	<i>kaokaokao</i> [name]
(g)	/ka e pēpē/	<i>kāo</i> [proto] <i>pēpē</i> OR <i>kāre pēpē</i>
(h)	/ka:e pe:pe:/	<i>kāre pēpē</i>
(i)	/ka.e kau e pe:pe:/	<i>kare kau</i> [proto] <i>pēpē</i>
(j)	/kaɔ pe:pe:/	<i>kāo pēpē</i>
(k)	/kaow nə: paepaku:/	<i>kāo</i> [proto] <i>whare paku</i>

The first four items on the inventory signal that Puhi produced several holophrastic negative terms. At 23;0.5 Puhi produced (d) /na:ɔ/, which has phonological similarities with both *kāo* (Māori) and *no* (English). It is possibly a blended word, placing it in the BFLA category of "mixed language utterance". Such blends are a feature of the early production of BFLA children (de Houwer, 2009). At 20;0 Puhi produced *e kāo kāo* and at 23;0.5 she produced the NEG + INTENS structure *kare kau*. *E kāo* appeared occasionally in the input data but *e kaokao* appears to be novel usage by Puhi. *Kare kau* appeared both as a holophrase, as in (e) and in a sentence in (i). Analysed individually and across

the combinations period, these latter two utterances signal Puhi's experimentation with and appropriation of two-morph negative forms, and of such features as reduplication and particle use in te reo Māori.

(7463) *e kaokao* as holophrase

Puhi: /e kaokao/

Interpret: (e kākāo)

Gloss: PROTO no-no

Tr: 'no no'

Examples (f) to (k) in Table 7.6 signal Puhi's foray into sentence negation in te reo Māori, as below.

(7464) *kāo* + *N*

Puhi: /kaɔ pe:pe:/

Interpret: (kāo pēpē)

Gloss: no baby

Example (7462), (see minute 1:45 in Cameo 7.9) is consistent with *kāo*, [NAME] 'no, [NAME]', a two-holophrase combination that is common in my data, especially in speech directed to children. However, Puhi produced the utterance (7464) while directing talk to an adult about a baby, and not addressing the baby directly. It therefore seems more likely that she was targeting a negative sentence.

(7465) *kāo* + NP

Puhi: /ka e pēpē/

Interpret: (kāo PROTO pēpē)

Gloss: no PROTO baby

Utterance (7465) is again directed to an adult (see minute 1:25, Cameo 7.9). It is possible that Puhi was using *kāo* to negate the proto + N combination. Alternatively she may have been targeting *kāre Pēpi* which has the same structure as (7466) below.

(7466) *kāre* + *N*

Puhi: /ka:e pe:pe:/

Interpret: *kāre* *pēpē*

Gloss: not baby

Example (7466) is similar to the adult sentence *kāre/kāore* + NP, where NP = PART + N, but Puhi's combination has no particle (see minute 1:25 in Cameo 7.9).

Puhi's use of *kare kau*, in the utterance /ka:e pe:pe: ka:e kau/ (see minute 1:25, Cameo 7.9) is adult-acceptable where *kare kau* = NEG+ INTENS.

(7467) *kare kau* as intensified negative in sentence

Puhi: /ka.e kau e pe:pe:

Interpret: (kare kau PROTO pe:pe:)

Gloss: not INTEN PROTO baby

Tr: 'no baby at all' OR 'definitely not for/belonging to baby'

Cameo 7.9 illustrates Puhi's use of nine negative forms, including five holophrastic utterances involving one or more iterations of *kāo*. Puhi's negative forms are underlined. The negative utterances in Cameo 7.9, are significant to Puhi's LA trajectory for two reasons. First, they signal that by 23;0.5 she was experimenting with *kāre* and *kāo* as sentence negators, and with *kare kau* as an intensified negative. Second, they signal a move from two-morph combinations to multi-morph sentences. In addition, since *kare kau* is a form that is more common in the Eastern Bay of Plenty (where Koro-Leon grew up) than in Ōtaki (where Puhi was growing up), its appearance in Puhi's production may well be a result of its high frequency of use by Puhi's paternal *whānau*. If so, this underlines the important role that Koro-Leon played in his great-granddaughter's LA, both via direct interaction with her, and indirectly via his role in the LA of the two generations of *whānau* between him and Puhi.

As well as experimenting with negative forms in combinations that included proto-particles, reduplicated forms, and names, Puhi also experimented with the

communicative functions of her negative forms in both her languages. This is apparent in Cameo 7.10 in which Puhi used *kāo* in relation to her *tuahine* responsibilities (see 6.6).

Cameo 7.9. Negatives

Age: 23;0.5

1:00	<p><i>(This interaction takes place concurrently with a conversation between three adults who are present, MH, Kui and Māmā)</i></p> <p><i>Puhi takes hold of the microphone that is attached to her cardigan with a clip.</i></p> <p>Puhi /pa:kamau/ (whakamau) <attach></p> <p><i>Puhi pulls the mic off her cardigan.</i></p> <p>Puhi /kaʊ/ (kāo) <no></p> <p>Puhi [to MH waving mic]/a pae ana ma.i/ (...mau) <... wear> /kaʊ ka ka kaʊ/ (no no no no)</p> <p><i>MH takes mic from Puhi, holds it toward Puhi to attach it again.</i></p> <p><i>Puhi bats at mic and MH's hand.</i></p> <p>MH ...Whakamaua <attach [it]></p> <p>Puhi /kaʊ kaʊ/ (kāo kāo) <no no></p> <p>MH Mā Pēpi Pae? <for Baby Pae></p> <p>Puhi /a:e:/ (āe) <yes></p> <p>MH Nē? <really?></p> <p>MH [to Puhi] Whakamau ki a ia? <attach it to him?></p>
1:25	<p>Puhi /ka:/ [shakes head] /aʔ/ /kaʊ:/ [frowns] /ka e pēpē/ (Kare Pēpē OR Kāre he pēpē OR Kei hea Pēpē?[I interpret as latter at the time, but at transcription lean towards one of the negative combinations])</p> <p>MH Tēnei pēpē <this baby?></p> <p><i>Puhi looks at feet, looks at MH and shakes head, saying:</i></p>
1:35	<p>Puhi /ka:e pe:pe: ka:e kau/ (Kāre Pēpē. Kare kau) <not baby, not at all></p> <p>MH Kare kau? <not at all?></p> <p>Puhi [shaking head] /ka.e kau e pe:pe:/ <not at all [proto] baby></p> <p><i>Puhi turns towards window, squats to prop bottle against glass at ledge (not sufficient room to settle bottle on) Puhi holds bottle, stands and lifts bottle to drink.</i></p>
1:45	<p>Puhi /kaʊ pe:pe: .../ (kāo pēpē) <no baby></p>

Cameo 7.10. *kāo* (rep) + NAME

Age: 23;0.5

3:01	<p><i>Kui, ironing, flicks her L arm and hand up (palm facing down) like a “shoo” gesture as Puhi approaches the ironing board carrying a keyboard.</i></p> <p><i>Kui Kāo. Waiho ki kō. Werawera. <No. Leave it over there. Hot></i></p> <p><i>Puhi looks down at the keyboard, stays put.</i></p>
3:09	<p><i>Kui Werawera ki konei <[It is] hot here></i></p>
4:35	<p><i>...Puhi turns towards a coffee table where B-Paenui stands, playing with some clothing.</i></p> <p><i>Puhi pulls the clothing away from B-Paenui.</i></p> <p><i>Puhi /ka:ɔ:/</i></p> <p><i>Puhi puts the clothing on the table, looks at it, then looks sideways at Paenui.</i></p>
4:40	<p><i>She moves towards him and reaches out her hand, saying.</i></p> <p><i>Puhi /kəʊ kəʊ kəʊ pa:e:s/ (kāo kāo kāo, Paenui) <no no no, Paenui></i></p>

At 4:40 in Cameo 7.10, Puhi used *kāo* three times in quick succession combined with B-Paenui's name. Her actions and words signal that she was demonstrating *tuahine* 'female cousin of a boy' responsibilities as she guided his participation, just as her own participation was guided between 3:01 and 3:09. Analysis of this sub-event adds clarity both to the *whānau* trajectory described in 6.6, and to Puhi's developing LA trajectory. This *kāo* + NAME combination signals that Puhi understood and used *kāo* as a way of guiding her younger cousin. Analysed on its own, *kāo* + NAME does not seem to signal much progress towards negation. However, analysed together with other utterances between 1:00 and 1:45, such progress is revealed.

7.4.5.6 Summary of indicator-word analysis

The analysis of ten selected indicator words shows that, by 24;0:

- Puhi was using kinship terms in an increasing variety of contexts and structures (which indicated her growing understanding of *whānau* practices of naming and referring to people), including possibly trialling *Māmā* as a politeness tag (which indicated her innovative use of language);
- B + NAME combinations

- There was very little change in use of indicator verbs *kite* and *mutu* or of her use of the noun *waewae* within structures of te reo Māori, but that does not reflect the development of her use of verbs and nouns generally (see 7.4.3);
- Simple *kāo* + B, and *kāre* + B structures were emerging, and Puhi used these structures to express communicative functions including disagreement, refusal, and debate, and to guide her younger cousin.

7.4.6 Summary of analysis of first combinations

This section has presented results from a linguistic analysis of the first combinations in Puhi's production from age 18;0 to 24;0. The analysis compared 108 combinations with the three basic phrase types of te reo Māori, as described by Biggs (1969) and W. Bauer (1997), and with two-word structures typically produced by L1-English children. It also considered combinations that indicated BFLA. Puhi's combinations signal that by 24;0 she had acquired both syntactic and social knowledge involving combining words. She had also developed consistent word placement, and proficiency with communicative language-functions such as getting to know the *whānau* and how to address and refer to relatives; being polite; and responding to and inviting response from interlocutors. She had targeted and learnt formulaic language chunks for their communicative functions, and reproduced the chunks in imitation, in recurrent communicative practices, and in novel situations.

Some of the most significant advances were:

By 18;0: PROTO-PREP + NAME structures that approximated adult preposition phrases had emerged. The proto-prepositions in these structures were variable (C)V(V) syllables that usually alliterated with the name.

By 22;0, *kei* + LOC N preposition phrases had emerged, where the local noun was either *konei* 'here' or *hea* 'where'.

By 23;0, DET + B had emerged, where the determiner she used most often was an approximation of *he* and the base was one of a small set of common nouns or state intransitive verbs. The determiner *ngā* was also emerging.

By 24;0, verbal constituents with the form PROTO-TAM + V had emerged in the form of holophrastic, formulaic units. In order of frequency in my data, Puhi's proto-TAMs were *ka*, *kua*, *kei te*, and *kia*. In addition, a variety of imperative forms had emerged, including action intransitive verbs with appropriate distribution of the filler *e*; passive forms of transitive verbs; adult-acceptable exceptions: e.g., *waiho* and *homai* with no passive suffix despite transitivity.

Across the first-combinations period then, Puhi produced many combinations that were consistent with (PART +) B (+ MOD), which is the basic structure of all te reo Māori phrases, but there is less clarity as to which particles, and therefore which phrase types, she was targeting. This finding is significant for two reasons: first, it confirms that Puhi was targeting that structure, one that is particular to te reo Māori; and second, it clearly defines most of Puhi's production as unlike the typical two-word phrases produced by children learning English. This holds true in cases where Puhi reproduced high-frequency adult phrases and also in cases when it appeared that she was generating her own combinations. This is a significant finding that signals that Puhi's language acquisition is particular to te reo Māori and different from early acquisition in English, and leads to a new hypothesis regarding patterns of natural acquisition of te reo Māori. That hypothesis is: that following an initial one-word period, the first structures acquired and produced by young children learning te reo Māori have a form that is consistent with the basic phrase of te reo Māori.

7.5 Puhi's first sentences

Previous sections have shown Puhi's progression along her LA trajectory from first words, through her first combinations of words and/or morphs. As Puhi continued to progress towards proficiency in te reo Māori production within her *whānau*, she began to combine phrases into "first sentences". The analysis in this section focuses on examples of those first sentences. Linguistic analysis of the syntactic form of her utterances revealed the emergence of grammatical structures of te reo Māori in Puhi's production, and her progress in using them for a range of communicative purposes.

In my analysis I use up to six layers of description of Puhi's utterances, as illustrated below.

(7501) Age 24;3

Layer (i)	Puhi:	/a	pəpəi	a	hau	e:i/
(ii)	Interpret:		(pupuhi)			
(iii)	Gloss:	PROTO	blow	PROTO	wind	eh
(iv)	Phrase:	TAM	V	DET	N	TAG
(v)	Sent:		VC		SUBJ	TAG
(vi)	Tr:	'...wind ...blows, eh.'				

KEY

(i) Puhi = Puhi's articulation, mostly in phonemic script between slashes /.../. Where more detail is required, phonetic script is shown between square brackets [...]

(ii) Interpret: = interpretation of imperfectly-articulated forms

(iii) Gloss = gloss for interpretable forms

(iv) Phrase = interpreted phrase analysis

(v) Sent = interpreted sentence-constituent analysis

(vi) Tr = translation into English

N.B.

Vertical lines separate the (phrasal) sentence constituents.

Horizontal lines separate the grammatical analysis from the utterance and interpretation, and from the translation.

My analysis compares Puhi's production with sentences that are acceptable in the informal adult speech that she heard most often. In English, sentence types are often indicated by word classes and the position of words in a sentence. By contrast, many sentence types of te reo Māori are indicated by the particle which introduces the initial phrase in the sentence. However, the initial particle is often omitted in informal adult speech, and in these cases, sentence type is often not immediately obvious. The first set of examples I analyse falls into this category. I then present examples of different types of nominal sentence, followed by examples of positive verbal sentences, and then by the negative (verbal) sentences, and other negative forms. Examples of each sentence type are presented according to their chronological appearance in the data set in order to illustrate Puhi's trajectory towards proficiency in te reo Māori.

7.5.1 Data

The data set I refer to as "Puhi's first sentences", consists of interpretable sentences that are at least one phrase in length and that were captured from Puhi's production between age 22;0 and 29;0. This data set overlaps temporally with the first-combinations data set, which ended at 24;0. The focus of analysis in this section is on constructions consisting of two or more phrases, but shorter sentences are discussed, where appropriate, to show the full range of Puhi's sentence production.

7.5.2 Features of the data set

The first-sentences data-set revealed that Puhi experimented with language in the same vein as she experimented with other communicative practices (see also 6.4.2). While some of her utterances consisted entirely of interpretable bases combined with proto-particles (Peters & Menn, 1993; see also 2.3.1.2, and 7.4.3), other utterances included uninterpretable chunks. Some of the latter chunks were analysed as bits of babble, or "babble bits", that signalled Puhi's

understanding of the possibility of producing longer utterances, although she had not yet acquired all the detail.

7.5.2.1 Babble bits

Puhi's babble bits (BB) mostly consisted of (C)V(V) chunks that are similar to the structure of syllables of te reo Māori, and to much of Puhi's production. They included sounds from te reo Māori, but also included non-Māori sounds, as did her speech in general. Some non-Māori sounds appeared regularly in Puhi's production as approximations of Māori phonemes, e.g., /ð/ often appeared in place of /r/, and /ə/ appeared in place of /e/, /a/ and /i/. Neither /ð/ nor /ə/ are phonemes of traditional te reo Māori but both are common in NZE, which she heard her adults using on a daily basis (see Chapter 5). It is common for young children to consistently use sounds that are close in articulation to, but different from, sounds of a language they are learning, e.g., /θ/ for /s/ and /t/ for /k/ in English (Jarzynski, 2011).

A selection of Puhi's BBs are illustrated by the underlined sequences in (7502) to (7505). These examples are all from Puhi's 25th month and also illustrate that she made errors of articulation, which she sometimes self-corrected (sc), as all speakers do.

(7502) Age 24;0

Puhi: [heihei ðəðəðəðə ei heihei]

Gloss: heihei BB BB(SC) heihei

Tr: 'hen __ __ hen'

(7503) Age 24;0

Puhi: [hikəe ðənənə anana]

Gloss: hīkoi BB

Tr: 'walk __'

(7504) Age 24;3

Puhi: [a:e nenene mʲakad̪i ki wahɔ ei]

Gloss: āe BB makariri ki waho, ei

Tr: 'yes ___ cold outside, eh.'

(7505) Age 24;3

Puhi: [iʔ oneanoə nenene kɔðə ðə: t̪ə waewae ʔe:i]

Gloss: he oneone BB te waewae, ei

Tr: '[There is] sand ___ the foot, eh.'

The babble-bits in (7502) to (7505) signalled Puhi's continued experimentation with phonological aspects of her languages, such as utterance length; prosodic patterns or the "tune" of the language (Peters, 2009), including rhythm and intonation; and phoneme combinations.

7.5.2.2 Proto-particles

Puhi experimented with the articulation and use of particles such as tense-aspect-mood markers (TAMs), e.g., *ka*, *kei te*, *kua* and *i*; determiners (DET), e.g., *he*, *ngā*, and *te*; and prepositions (PREP) e.g., *kei*, *ki*, *i*, *mā* and *nā*. Earlier, during the first-combinations period, it was often not clear which particle Puhi was targeting, and her attempts are therefore referred to as proto-particles (PROTO) after Peters and Menn (1993). Across the first-sentence period, Puhi's articulation and use of some particles became clearer and, where there is sufficient clarity as to which particle Puhi was targeting, I refer to that particle by its form (e.g., /mā/), and type (e.g., POSS), and provide a description of contextual information that justifies my decision. Proto-particles appear throughout the examples in the following sections.

7.5.3 Sentences with omitted particles

Puhi's production reflected the common adult practice of omitting initial particles in informal speech. When the initial particle is omitted, it is often not possible to determine unambiguously whether the sentence is verbal or nominal, since the classification of a sentence is often dependent on the presence of such a

particle. Below I discuss a range of interpretations of some sentences with omitted initial particles, that Puhi produced in her 25th month.

(7506) Age 24;0.5

Puhi:	/mamae	a	matimati/
Gloss:	sore/hurt	PROTO	finger
(a)			
Phrase:	∅CLS V	PROTO	N
Sent:	NPRED		SUBJ
(b)			
Phrase:	∅TAM V	PROTO	N
Sent:	VC		SUBJ

Tr (a): 'finger [is] sore'

Tr (b): 'finger is hurting'

In both interpretations of (7506), the subject NP has a proto-particle in place of a determiner. (7506a) interprets the utterance as a nominal classifying sentence with omitted initial particle *he*. The target is *he mamae te matimati* 'the finger [is] sore'; (7506b) interprets it as a verbal sentence with omitted initial TAM (e.g., *kei te*) in the VC. The target is *kei te mamae te matimati* 'the finger is hurting'.

(7507) Age 24;1.5

Puhi:	/mamae	tuara	nini/	e:i
Interpret:			(Nēni)	
Gloss:	sore	back	KIN	TAG
(a)				
Phrase:	∅CLS mamae	∅DET tuarā	∅PREP Nēni	TAG
Sent	NPRED		Subj	TAG
(b)				
Phrase	∅TAM mamae	∅DET tuarā	∅PREP Nēni	TAG
Sent	VC		Subj	TAG

Tr (a): 'Nēni's back [is] sore, eh'

Tr (b): 'Nēni's back hurts, eh'

In (7507), though it is not shown orthographically, Puhi's intonation supported the analysis of *Nēni* as part of the subject, not separately as an addressee. Therefore, my two possible interpretations of (7507) are:

(a) a nominal classifying sentence with omitted initial particle *he*, and with realised subject;

(b) a verbal sentence with omitted initial TAM, and with realised subject.

Both sentences consist of a predicate phrase (in (a), it is an NP; in (b), a VC), and a subject containing a modifying PP. An initial particle is absent from all three phrases in both of the above analyses, but (7507) is analysable as an emergent sentence of te reo Māori because:

a) it made sense to Puhi's interlocutors; and

b) phrases in the utterance are ordered according to adult sentence norms.

Similar analyses can be made of at least three further sentences beginning with *mamae*, and also with other state intransitive verbs, such as *makariri* in (7508).

(7508) Age 24;3

Puhi:	/makadidi	ki	waho/
Interpret:	(makariri)		
G	cold	PREP	outside
(a)			
Phrase:	ØCLS makariri	PREP	waho
Sent:	NPRED		ADV
(b)			
Phrase:	ØTAM makariri	PREP	waho
Sent:	VC		ADV

Tr (a): '[it is] cold outside'

Tr (b): '[it] will be cold outside'

Assuming that, in (7508a), *ki* approximates the adult norm *kei*, both interpretations are adult-acceptable sentences that include an adverbial phrase. The context suggests that *ka*, expressing future time, is the most likely TAM in (7508b).

Sentences with omitted initial particles that I analyse as nominal sentences include the following examples.

(7509) Age 24;1.5

Puhi:	/tenei	a	faðe	e:i/
Interpret:			(whare)	
Gloss:	this	PROTO	house	eh
Phrase:	ØEQ N	DET	N	TAG
Sent	NPRED		SUBJ	TAG

Tr: 'this [is] the house, eh'

Demonstrative pronouns such as *tēnei* 'this' in (7509) do not act as verbs and, although most bases in te reo Māori can potentially act as either verbs or nouns (see 4.4.3), some almost always occur as nouns, such as *whare* 'house' in this sentence. Example (7509) is therefore analysed as a nominal, equative sentence. The target sentence could be *ko tēnei te whare* 'this [is] the house'. However, as the gloss shows, the word order of Puhi's sentence is also similar to English word order.

The probable target in (7510) is a single-phrase, null-subject classifying sentence with possessive PP as modifier to the predicate NP.

(7510) Age 24;1.5

Puhi:	/potaē	ōa?	awa	a:i/
Interpret:		(nā)		(ēi)
Gloss:	hat	belong	NAME	TAG
Phrase:	ØCLS N	PREP	NAME	TAG
Sent:		NPRED		

Tr: '[this is] Awa's hat, eh'

Example (7511) illustrates a three-phrase sentence with an omitted particle in the DO.

(7511) Age 24;0

Puhi:	/ka	ha	a	neni		ahi	ei
Interpret:	(kua/ka)	(whakakā)		(Nēni)			
Gloss:	PROTO	alight	PERS	KIN		fire	ēi
Phrase:	TAM	V	PERS	N	ØPREP	ØDET	N
Sent:		VC		SUBJ		DO	TAG

Tr: 'Nēni has lit/will light the fire, eh'

Between 22;0 and 30;0 then, two-phrase sentences with omitted initial particles became established in Puhi's production. Although omitted initial particles open an utterance to varied interpretation, contextual information is readily available, and meaning can be negotiated in real time. In Puhi's case, situational context supported her attempts at communication, and interlocutors put effort into making sense of what she said. However, particles help establish specificities and limit ambiguity in more formal or abstract speech, and this signals room for Puhi to gain further proficiency with particles than the above examples show.

7.5.4 Nominal sentences

There are five types of nominal sentence, all of which appeared in Puhi's production. The analysis of those utterances is presented in 7.5.4.1 to 7.5.4.5.

7.5.4.1 Locational sentences

Puhi began using single-phrase locational sentences in the first-combinations period, and continued to use these through the first-sentence period, e.g., *kei konei* 'here', *kei konā* 'there', *kei hea?* 'where?'. In the first-sentences period, from age 23;0.5, she also produced longer locational sentences that were structurally, if not phonetically, adult-acceptable. The basic structure of these sentences is NPRED + SUBJ, where the nominal predicate (NPRED) takes the form of a prepositional phrase introduced by a locational preposition, and the subject is an NP (see 4.4.3.1.3). Examples (7512) to (7515) are *where?* questions, and are the first two-phrase locational sentences in my data.

(7512) Age 23;0.5

Puhi:	/ki je	te kai/
Interpret:	(kei) (hea)	
Gloss:	PREP where	DET SG food
Phrase:	PREP N	DET N
Sent:	NPRED	SUBJ
Tr:	'where is the food?'	

(7513) Age 23;2.5

Puhi:	/ka: e:	te katu/
Interpret:	(kei) (hea)	(kapu)
Gloss:	PREP where	DET SG cup
Phrase:	PREP N	DET N
Sent:	NPRED	SUBJ

Tr: 'where is the cup?'

(7514) Age 24;0

Puhi:	/kei ja:	kwe/
Interpret:	(hea)	(koe)
Gloss:	PREP where	you (SG)
Phrase:	PREP N	N
Sent:	NPRED	SUBJ

Tr: 'where are you?'

(7515) Age 24;3

Puhi:	/ka he	ne karaona/
Interpret:	(kei) (hea)	(te)
Gloss:	PREP where	DET SG clown
Phrase:	PREP N	DET N
Sent:	NPRED	SUBJ

Tr: 'where is the clown?'

Example (7516) shows Puhi's first declarative locational sentence with a subject. The predicate is a basic PP with locational preposition *kei* and local pronoun *konei*, and the subject NP comprises a NP with omitted determiner, a common noun *wharepaku* and a possessive PP that modifies the N.

(7516) Age 25;0

Puhi:	/kei konei	pa.epaku a:ʔa puihaia/
Interpret:		(wharepaku)
Gloss:	PREP here	toilet PROTO NAME
Phrase:	PREP N	ØDET N PREP NAME
Sent:	NPRED	SUBJ

Tr: 'here is [the] toilet of/for Puhi Ihaia'

The grammatical form of all these sentences is the same, and their communicative functions are similar in that Puhi is requesting information, but in

each case the purpose of the request differs. For example, the communicative function of (7512) and (7513) appears to be to engage an interlocutor to get something for Puhi, whereas that of (7514) appears to be to maintain conversational contact with Nēni, who had momentarily disappeared from Puhi's sight. (7516) functions communicatively as a request for information, as Puhi seeks the whereabouts of a toilet. My real time response to her was *Pīrangi mimi koe?* 'Do you want [to] pee?', which signals my ratification of Puhi's utterance as a declarative that expressed her need to go to the toilet.

By 23;0.5, then, basic interrogative locational sentences had emerged in Puhi's production, and declarative locational sentences emerged two months later at 25;0.

7.5.4.2 Possessive sentences

The possessive sentences in my data consist of a predicate in the form of a prepositional phrase introduced by one of the possessive prepositions *mā/nā/mō/nō*, and a subject in the form of an NP (see 4.4.7.2). Example (7517) illustrates a single-phrase, predicate-only possessive sentence of the type that first appeared early in the combinations period and continued throughout the sentences period.

(7517) Age 24;0

Puhi:	/na: dæða/
Gloss:	belong NAME
Phrase:	PREP NAME
Sent:	NPRED
Tr:	'Dela's'

The first example of a possessive predicate sentence with realised predicate and subject shows Puhi's understanding of the the possessive 'rule' *nā* + PRON. In (7518), Puhi appears to have generalised the form of the 1st singular pronoun that occurs in most other contexts to the context of a possessive preposition, where it does not traditionally occur.

(7518) Age 22;1

Puhi:	/na:	au	teja/
Interpret:			(tērā)
Gloss:	belong	1SG	that DIST
Phrase:	PREP	N	N
Sent:		NPRED	SUBJ
Tr:	'that is mine'		

Traditionally *-ku*, not *au*, is the 1st-person singular pronoun used after *nā*. This can be likened to the overgeneralisation that occurs in children's speech in other languages, including English (e.g., pluralising by adding /s/ and variant suffixes to nouns, as in *mans*, and *mouses*) (Fromkin et al., 2009). If children hear traditional forms used by adults and older children, they are likely to appropriate them. If not, the over-generalisation may become a permanent feature of their speech, and eventually may be widely adopted. There is anecdotal evidence that forms of this type (*nā au*; *mō koe*; *mō ahau*; cf traditional forms: *nāku*, *mōu*, *mōna*) are occurring in the speech of older children and of L2 adults, and documented evidence that they are occurring occasionally in print (Kelly, 2015).

Puhi produced three further possessive-predicate sentences introduced by *nā*.

(7519) Age 24;3

Puhi:	/na	nene	tenei/
Gloss:	belong	Nēni	this
Phrase:	PREP	KIN	N
Sent:		NPRED	SUBJ
Tr:	'this is Nēni's'		

(7520) Age 25;0

Puhi:	/na	amɔ	tə	waiwai/
Interpret:		NAME	(te)	(waewae)
Gloss:	belong	NAME	DET SG	leg
Phrase:	PREP	NAME	DET	N
Sent:		NPRED		SUBJ
Tr:	'The leg/foot is Amo's'			

(7521) Age 28;1.5

Puhi:	/na: puhi.ihaia	tena mea	ne/
Gloss:	belong NAME	that thing	TAG
Phrase:	PREP NAME	DET N	TAG
SENT:	NPRED	SUBJ	TAG

Tr: 'that thing is Puhi Ihaia's, eh

Puhi's use of the *n-* morph in (7518) to (7521) is consistent with adult norms showing actual possession, but she diverged from adult norms in her use of the A morph, since parts of the body, such as legs in (7520), were traditionally O-classified. One possibility is that Puhi over-generalised the use of the A morph while she worked out how the O morph was used by those around her. Traditionally, O is unmarked, and A is marked (see 4.4.6.1), but in Puhi's life, A-forms, or possibly neutral forms, may be higher in frequency. Another possibility is that Puhi heard non-traditional use of the A/O distinction from younger speakers and L2-speakers of te reo Māori who are acquiring a non-traditional A/O distinction. There is anecdotal evidence that this is occurring and further research in this area is required.

Example (7522) illustrates the only appearance in my data of the *-ku* form in a possessive sentence with nominal predicate (PP) and Subj (NP) realised.

(7522) Age 28;0

Puhi:	/ma:ku	tenei/
Gloss:	for me	this
Phrase:	PREP N	N
Sent:	NPRED	SUBJ

Tr: 'this is for me'

Analysed together with other *-ku* forms that Puhi produced between 17;0 and 28;0, (7522) signals that the **nā au* form she produced in (7521) at 22;1 was probably experimental over-generalisation, and that there were sufficient traditional forms in her language environment for her to appropriate the *-ku* form.

Possession was also indicated in Puhi's sentences with the neutral possessive determiner *tō* 'your'; for example:

(7523) Age 24;3.5

Puhi:	/mamae	tō	kanu	ano:/
Int:		tō	(karu)	(anō)
Gloss:	ØCLS sore	your	eye	again
Phrase:	ØCLS N	DET	N	MOD
Sent:	NPRED		SUBJ	

Tr: 'your other eye is sore'

Another classifying sentence *he mamae tō kumu* 'your bottom is sore', from the same event can be analysed similarly. Puhi's use of the possessive determiner *tō* 'your' was syntactically adult-acceptable, and indicated that the singular-possessive *t-* form had emerged in her production. However, her use of *tō* was semantically divergent, since Puhi was referring to herself, and either of the determiners *taku* or *tōku* 'my' would have been appropriate. This also occurs in other languages, as children come to grips with the use of speaker-oriented words.

No other possessive determiners were present in my data, signalling that these function words were slower to emerge than sentence-initial *nā* possessive prepositions. The appearance of initial *nā* before medial *tō* is consistent with the appearance of initial particles before medial particles generally in Puhi's production. This may be due to the salience of particles in initial position, but also to the importance of initial particles for unambiguous communication.

A third structure that Puhi used to indicate possession is exemplified in (7507b) and (7540). In those sentences the subject phrase is comprised of a NP modified by a PP in which *a/o* prepositions indicate possession, i.e., *te tuarā o Nēni* 'the back of Nēni' at 24;1.5, and *te tōkena a Nēni* 'the sock of Nēni' at 25;0. These examples indicate that this structure was beginning to emerge in the first-sentences period.

By age 29;0, then, Puhi was indicating possession in three ways in two-phrase nominal sentences. Possession predicate phrases with *nā* had emerged by 22;1, and adult-acceptable forms had emerged by 24;3. These were the most common possessive forms. *Mā* appeared in a single example in my data at 28;0, but neither *mō* nor *nō* had appeared by the end of the first-sentences period, i.e., by 30;0. Puhi was producing possessive preposition phrases with *o* as modifiers, and was experimenting with the second-person singular determiner *tō*, but other possessive forms had not appeared by age 29;0.

7.5.4.3 Classifying sentences with *he*

Adult-acceptable classifying sentences consist of a predicate in the form of an NP introduced by the classifying particle *he*, and a subject in the form of an NP (see 4.4.7.2). In all Puhi's basic classifying sentences of two or more phrases in length, the base that follows *he* is a 'stem nominalisation' of a state intransitive (S-INTR) verb (W. Bauer, 1993; 1997). The verb is unchanged in form, and retains its verbal sense, but the phrase is considered to be nominal. The first examples in my data of a classifying sentence with realised nominal predicate NP and subject NP are illustrated in (7524) and (7525). Both appeared in the same event.

(7524) Age 24;3

Puhi:	/e: parupanu	ninanina	ne	ei/
Interpret:	(he) (paruparu)	(ringaringa)	(nē)	(ei)
Gloss:	CLS dirt	hand	TAG	TAG
Phrase:	CLS S-INTR	ØDET N	TAG	TAG
Sent:	NPRED	SUBJ	TAG	TAG
Tr:	'...hand is dirty, eh, eh'			

(7525) Age 24;3

Puhi:	/e paruparu	e e? e? pui.ihāia	e:/
Interpret:	(he)	(a)	(ēi)
Gloss:	CLS dirt	PERS NAME	TAG
Phrase:	CLS S-INTR	PERS NAME	TAG
Sent:	NPRED	SUBJ	TAG

Tr: 'Puhi Ihaia is dirty, eh'

(7526) Age 25;0

Puhi:	/he mahana	te:nei/
Gloss:	CLS warm	this
Phrase:	CLS S-INTR	N
Sent:	NPRED	SUBJ

Tr: 'this is warm'

In addition to the basic structure, Puhi was gaining experience with an extension of the classifying sentence. This structure is a null-subject classifying sentence, where the NP in the nominal predicate is modified by a preposition phrase. The modifier (MOD) is *nā/mā* + NP. This occurred with an omitted initial preposition in *pōtae nā Awa* 'hat belonging to Awa' and in the title of a book Puhi favoured, entitled *He āporo mā Hoiho* 'An apple for Horse' (Everitt, 1982).

One further example of note is (7527), a mixed language sentence with *te reo* Māori syntax, particle and pronominal subject, but with an English adjective in the nominal predicate phrase:

(7527) Age 25;0

Puhi:	/he jaki	kwe/
Gloss:	CLS yucky	koe
Phrase:	CLS N	N
Sent:	NPRED	SUBJ

Tr: 'you are yucky'

Puhi used (7527) as a mild insult in response to perceived teasing.

The examples in this section signal that, by 25;0, Puhi had progressed along her language trajectory from single-phrase *he* constructions to two-phrase

classifying sentences introduced by *he*. The presence of mixed utterances in the data-set underlined Puhi's BFL development.

7.5.4.4 Existential sentences

Puhi produced the following two-phrase existential sentences in a single event.

(7528) Age 24;3

Puhi:	/pahikada	ki:	dado/
Interpret:	(pahikara)	(kei/ki)	(raro)
Gloss:	bicycle	PREP	below
Phrase:	ØCLS N	PREP	N
Sent:	NPRED		ADV

Tr: 'a bike [is] below'

(7529) Age 24;3

Puhi:	/he podo	ki :	doto	e:i/
Interpret:	(pōro)	(kei/ki)	(roto)	ei
Gloss:	DET ball	PREP	inside	
Phrase:	DET N	PREP	N	TAG
Sent:	NPRED		ADV	TAG

Tr: 'a ball [is] inside, eh'

The two examples are declarative in form, although the addition of the tag *eh* changes (7529) to a leading question. The sentences are referential and interpersonal, indicating Puhi's growing proficiency in making conversation by talking about things in her environment.

Single-phrase existential sentences, such as *he wai* 'water', *he waka* 'a boat', *he tui* 'a tui', *he rakiraki* 'a duck' occur from age 22;0 (see 7.4.3.1). Two-phrase existential sentences had emerged by 24;3.

7.5.4.5 Equative sentences with *ko*

Equative sentences introduced by *ko* were slower to emerge in Puhi's production than, e.g., classifying sentences. At age 24;0, Puhi produced the single-phrase interrogative *ko wai?* 'who?' while showing me a clod of dirt she had picked up in the garden.

(7530) Age 24;0

Puhi:	/ko wa:i:/
Gloss:	EQ who
Phrase:	EQ N
Tr:	'who?'

Analysed on its own in that context (7530) gives only a vague indication of an equative sentence. However, three months later at age 27;0, Puhi produced a clear example of a declarative equative sentence, when she saw her own image on a video-camera and identified herself in (7531). Thus, the earlier sentence can also be analysed as an emergent equative form, even though its function at the time remains unclear.

(7531) Age 27;0

Puhi:	/ko puihaia	tena?/
Gloss:	EQ NAME	that
Phrase:	EQ N	N
Sent:	NPRED	SUBJ
Tr::	'that is Puhi Ihaia'	

One further example occurred six weeks later, at 28;2. The sentence is analysed as an adult-acceptable equative sentence in (7532a).

(7532) Age 28;2

Puhi:	/ko ma:ma:	te ōa ōe/
(a)		
Interpret:	(ko māmā	tērā, nē)
Gloss:	EQ KIN	that TAG
Phrase:	EQ N	N TAG
Sent	NPRED	SUBJ
(b)		
Interpret:	(ko Māmā	kei reira)
Gloss:	TOP KIN	PREP there
Phrase:	TOP N	PREP PRON
Sent:	SUBJ	NPRED

Tr (a): 'that [is] Māmā, eh'

Tr (b): 'Māmā is there'

A second analysis identifies (7532b) as an adult-acceptable, topicalised-subject, locational sentence with a *ko*-fronted subject. Such a sentence is used when a speaker introduces a new topic, as Puhi did when making this utterance. The examples above signal that equative sentences had emerged by 27;0, and that topicalised sentences may also have emerged by 28;2.

7.5.5 Verbal sentences

This section deals with the verbal sentences in my data. In te reo Māori, the basic structure of verbal sentences is verb-subject-(object) or VS(O) and, because phrases are the basic unit of te reo Māori (Biggs, 1969), transitive verbal sentences are comprised of a verbal constituent (VC) followed by an optional subject (Subj) followed by a direct object (DO), i.e., VC + Subj + DO (see 4.4.7.3). Minimally, the VC consists of (TAM) + V, the subject consists of (det) + N, and the object (DO) consists of prep + NP. Intransitive sentences follow the same pattern, but of course lack the DO. Many of Puhi's first-sentences were intransitive sentences with the structure VC + Subj, but other phrase combinations are also present in my data, as illustrated in the following sub-sections.

7.5.5.1 Verbal sentences without subjects

Subjects are often omitted in verbal sentences in te reo Māori (see 4.4.7.4). Null-subject sentences are of interest because they contribute to tracing Puhi's LA trajectory in terms of her articulation and understanding of verbal particles. Some examples of Puhi's single-phrase, null-subject sentences are presented in Table 7.7 (Column 4). These examples illustrate the range of verbal particles (Column 2) that Puhi produced up to the end of the sentences period. The number of tokens of each particle across that period is shown in Column 3.

Table 7.7. Puhi's use of verbal particles between 24;0 and 28;0

Line	Particle	Tokens	Example	Interpret	Gloss
1	ka	40+	/ka mamae/	ka mamae	'will hurt'
2	kua	20+	/kwa kai/	kua kai	'has eaten'
3	kei te	10+	/kei te tanj/	kei te tangi	'is crying'
4	i	6	/i taka/	i taka	'fell'
5	e...ana	4	/e kaka? ana/	e kaukau ana	'is swimming'
6	me	3	/me kɔðeðɔ/	me kōrero	'should talk'
7	kia	2-3	/kja tu:pa:tɔ/	kia tūpato	'be careful'
8	e (IMP)	20+	/e puta/	e puta	'go out/emerge'

Table 7.7 illustrates that Puhi's use of TAMs had progressed since the first-combinations period. During the earlier period, the particles with which Puhi introduced her phrases were quite different from adult forms and were therefore analysed as proto-particles. Proto-particles continued to appear through the sentences period, but approximations became increasingly closer to adult verbal particles. By 28;0 Puhi had clearly articulated eight verbal markers, including *i*, *e...ana*, and *me*, as illustrated in Column 4. Lines 1 to 7 show that Puhi produced seven of the range of nine main adult TAMs, but TAMs *e* and *i te* were not captured in my data. The imperative *e* was present in high frequency as shown in line 8. As in the 'combinations' period, *ka* was the most prevalent TAM in my data, and was also used with the widest range of verbs. Puhi's full range of verbs and their use with verbal particles is presented in table 7.8.

In addition to the verbs in Table 7.8. Puhi used an apparently invented word *takapoti*. The presence of this invented word in my data further confirms Puhi's understanding of the VC phrase, and of the VC + subj NP sentence into which she inserted her invented word, i.e., *ka takapoti au* 'I will *takapoti*.' The structure clearly signals that Puhi is using *takapoti* as a verb. However, vague context and lack of both semantic cue and stated object prevents categorisation of this verb and interpretation of the sentence.

Table 7.8. Verbal particle and verb class use between 10;0.5 and 28;0

Particle (TAMs etc)	canonical transitive	experience	action intransitive	state intransitive and neuter	passive form
No TAM (decl)	awhi hiki horoi tango tiki whakamau tuhituhi whakawhiti	pīrangi	haere haramai hīkoi heke hotu kaukau mimi omaoma pekepeke taka takahuri tangi tiko	mamae mataku pakaru tūpato whara toto	
proto	hiki pana pupuri whiu	hiahia	heke moe pupuhi tiko	mamae mutu ora pai paruparu pau whara	katia tangohia
ka	ringi whiu	kite	haramai hurihuri	mamae mutu pai weto	taea tangohia whiua
kei te	kai	hiahia	aha haramai moe tangi	pai	tangohia

Particle (TAMs etc)	canonical transitive	experience	action intransitive	state intransitive and neuter	passive form
kua			haere	makere mutu pakaru pai pau	
i	horoi	pīrangi	mimi taka		whiua
IMP e/ø	waiho homai		kai piki/peke ⁽ⁱ⁾ puta awhiawhi haere (atu) haramai mahi anō pekepeke titiro	turituri	katia pākia takahia tangohia whakamaui whakahokia whiua
e...ana			kaukau		
kia				tūpato	
ki te	kai				
me	pēnei ⁽ⁱⁱ⁾				
English verbs [All classes]	go(ing) jump know look				

⁽ⁱ⁾ It is unclear if Puhi is targeting the canonical transitive verb *piki* 'climb' or action intransitive verb *peke* 'jump' in her utterance.

⁽ⁱⁱ⁾ *pēnei* is a pro-verb, and cannot be assigned to a verb class due to lack of context.

By 30;0, Puhi was generating sentences using TAMs *ka*, *kei te* and *kua*, which indicated that they had become further established in her production. Two cases of *kia* occurred: *kia ora* ‘be well’ and *kia tūpato* ‘be careful’. Both are formulaic and holophrastic, signalling that Puhi had yet to begin generating her own *kia* sentences. There were single instances of the TAMs *me* and *ki te*. A second possible *me* structure was /ne fakamau/, with which Puhi may have been approximating *me whakamau* ‘should put it on’. Since this is not clear in context, and there are no other examples in my data, /ne/ must be analysed as a proto-particle in this case. The first-sentences data confirms that the range of imperative forms of te reo Māori have become established in Puhi’s production.

7.5.5.2 Basic declarative and interrogative sentences

The sentences in this section are organised by transitivity, except for the example in (7533). Puhi produced one instance of a single-phrase sentence with the pro-verb *pēnei*. Since pro-verbs change classes depending on context, it cannot be assigned clearly to one class or the other.

(7533) Age 23;1

Puhi:	/me	penei/
Gloss:	should	like this
Phrase:	TAM	V
Tr:	‘should [do] like this’	

Puhi probably acquired this formulaic chunk as a single-unit holophrase, and therefore the verb class is not relevant to the analysis. The presence of this phrase in the first-sentences data set indicates that the structure was emerging by 23;1. However, it is unlikely that Puhi was generating sentences with either the *me* structure, or with *pēnei* in any other structure since (7533) was the only clear instance in the data set of either *me* or *pēnei*.

7.5.5.2.1 Intransitive

There are three categories of intransitive verb in te reo Māori: action intransitives, state intransitives, and neuter verbs (see 4.4.7.3). All three

categories are represented in the first-sentences data, and are discussed below.

7.5.5.2.1.1 Action intransitive

The following sentences are those that Puhi produced with action intransitive verbs. These verbs have an agent subject (the ‘doer’).

The sentences in examples (7534) to (7540) were all video-recorded in a single event in which only Puhi and I were present. Often, Puhi was very talkative in such situations and her growing proficiency was on display. The sentences are arranged below according to their structure and complexity, rather than according to minute-by-minute chronology.

(7534) Age 24;3

Puhi:	/i	mimi	a:u
Interpret:			(au)
Gloss:	TAM	pee	1SG
Phrase:	TAM	V	N
Sent:	VC		SUBJ

Tr: ‘I peed’

(7535) Age 24;3

Puhi:	/ka	ramai	he	vaka	ei/
Interpret:		(haramai)		(waka)	(ēi)
Gloss:	TAM	come	DET	vehicle	TAG
Phrase:	TAM	V	DET	N	TAG
Sent:		VC		SUBJ	TAG

Tr: ‘a car will come, eh’

(7536) Age 24;3

Puhi:	/ko	haere	pahikaḍa/
Interpret:	(kua)		(pahikara)
Gloss:	TAM	go	ØDET bicycle
Phrase:	TAM	V	ØDET N
Sent:		VC	SUBJ

Tr: ‘the bicycle has gone’

In (7536) Puhi articulated *kua* as /kɔ/, which is adult-acceptable. However, she omitted the determiner from the subject NP, which is not adult-acceptable.

(7537) Age 24;3

Puhi:	/ke te	hi:kɔi	te te	g g g n	na	tama	e:i/
Interpret:	(kei te)	(hīkoi)	(te)		(ngā)		(ei)
Gloss:	TAM	walk	DET SG	SC	DET PL	boy	eh
Phrase:	TAM	V	DET			N	TAG
Sent:		VC		SUBJ			TAG

Tr: 'the boys are walking, eh'

In (7537) Puhi self-corrected (sc) from the singular determiner *te* to the plural determiner *ngā*. The question tag *eh* in (7535) and (7537) changes the functions of those sentences to leading questions, and signals that the communicative function is interpersonal, as Puhi used the tag to request a response and therefore to maintain conversation. This is the case in all the sentences in which *eh* occurs.

Three sentences with the verb *kaukau* 'swim', shown in (7538) to (7540), were brought about by our proximity to the sea at the time of recording. All were introduced by an approximation of the TAM *e...ana*. A second, similar utterance, *kaukau ana te wai* has a similar structure, but lacks an initial particle and the question tag.

(7538) Age 24;3

Puhi:	/ne	kaka	ana		te	wai	e:i/
Interpret:	(e)	(kaukau)					(ei)
Gloss:	TAM	swim	TAM	[ØPREP]	DET SG	water	eh
(a)							
Phrase:	TAM	V	TAM	ØPREP	DET	N	TAG
Sent:		VC			ADV		TAG
(7538b)							
Phrase	TAM	V	TAM		DET	N	TAG
Sent	VC				SUBJ		TAG

Tr (a) 'is swimming [in] the water, eh'

Tr (b) 'the water is swimming, eh'

The analysis shown in (7538a) indicates that Puhi omitted the subject, and also omitted the preposition from the adverb. An alternative analysis in (7538b) suggests Puhi may have used *te wai* as the subject.

Example (7539) is an adult-acceptable two-phrase declarative sentence.

(7539) Age 24;3

Puhi:	/na	kaka	ana	te	ōakiōaki
Interpret:	(e)	(kaukau)			(rakiraki)
Gloss:	TAM	swim	TAM	DET SG	duck
Phrase:	TAM	V	TAM	DET	N
Sent:		VC			SUBJ
Tr:	'the duck is swimming'				

Example (7540) is a two-phrase declarative with a subject phrase that is modified by a possessive preposition phrase *a Nēni* 'of Nēni'

(7540) Age 24;3

Puhi:	/takɔ	ne	tōkena	a	ne:ni/
Interpret:	∅TAM (tango)	(te)	(tōkena)		Nēni
Gloss:	∅TAM take [off]	DET	sock	PREP	KIN
Phrase:	∅TAM V	DET	N	PREP	N
Sent:		VC			SUBJ
Tr:	'take off Nēni's sock'				

The sentence in (7540) is adult-approximate (not adult-acceptable), because (a) the TAM is omitted; (b) there is a proto-particle in place of the determiner, and (c) the preposition *a* is in place of *o*, (clothing is an O-category item) (see 4.4.6.1).

The sentences in examples (7534) to (7540) are mostly declarative in form, and both referential and interpersonal in function, since Puhi maintained conversation by discussing events and entities around her. As noted previously, the addition of *eh* changed the function of some declarative sentences to leading questions.

Example (7541) is an adult-acceptable declarative that Puhi used to express apprehensive anticipation of a possible event.

(7541) Age 28;2

Puhi:	/ke te amai	te	pɔpɔðiki/
Interpret:	(kei te) (haramai)		(pōpokoriki)
Gloss:	TAM come	DET SG	ant
Phrase:	TAM V	DET	N
Sent:	VC		SUBJ

Tr: 'the ant is coming'

Examples (7534) to (7541) include utterances comprising VCs involving five different TAMs together with a variety of verb types, and NPs involving, for example, a pronoun, det + N, and det + N + mod. As such they clearly indicate that adult-acceptable two-phrase sentences with action intransitive verbs were established in Puhi's production by 24;3.

7.5.5.2.1.2 State intransitive and neuter verbs

As noted in 4.4.7.3, since the nuances between state intransitives and neuter verbs are not relevant at this point on Puhi's LA trajectory, the two verb classes are discussed together. Both verb classes have patient subjects (the 'done to').

(7542) Age 24;0

Puhi:	/kja tu:pa:tɔ/
Interpret:	(kia) (tūpato)
Gloss:	let be careful
Phrase:	TAM V

Tr: 'be careful'

Utterance (7542) is an adult-acceptable single-phrase sentence. Its implied subject is the addressee, and it expresses a wish.

(7543) Age 24;0

Puhi:	na fada? rə	ne	waiwai/
Interpret:	(ka) (whara) BB	(ngā)	(waewae)
Gloss:	TAM hurt	DET PL	leg/foot
Phrase:	TAM V	DET	N
Sent	VC		SUBJ

Tr: 'the legs/feet will get hurt'

Utterance (7543) is declarative with realised subject and added babble bit.

In (7543), Puhi's particle /na/ is dissimilar to *ka*, but the context (given in Cameo 7.11) points to *ka*, and specifically to *ka whara* 'will hurt' as the target, since that was the adult sentence she heard immediately prior to producing her own version. Utterances with *whara* are underlined.

Cameo 7.11. "Ka whara"

Age 24;0

4:05	MH	<i>Kia tūpato, kāo, waiho ki raro, kei, kei pakaru</i> <be careful, no, leave it, lest, lest it break>
	PI	/taka e:i/ (<i>taka ei</i>) <fall, eh>
4:10	MH	<i>Ka taka rānei ki runga i a koe, <u>ka whara koe</u></i> <or it will fall on you and you will get hurt>
4:15	PI	/a fara a:i/ (<i>ka whara ei</i>) <will get hurt, eh>
	MH	Āe <yes>
4:20	PI	/ta? fara/ (<i>ka whara</i>) <will get hurt>
4:21		/na: fada? rə na: waiwai/ (<i>ka whara ngā waewae</i>) <the feet will get hurt>

Cameo 7.11 illustrates that Puhi contributed additional information by suggesting an alternative consequence *taka, ei* '[it will] fall, eh', and by generating her own subject phrase for the sentence, *ka whara ngā waewae* 'the legs/feet will get hurt'. She therefore communicated her understanding of consequences, and perhaps prior knowledge of objects falling onto her feet. Her utterances therefore fulfilled a creative communicative function of predicting possible events.

The sentence in (7544) includes another example of the state intransitive verb *mamae* (see also 7.5.3.1).

(7544) Age 24;0

Puhi:	/kə	mamai	ada	tenei	e:i
Interpret:		(mamae)	BB		(ēi)
Gloss:	TAM	hurt/sore		this	TAG
Phrase:	TAM	V		N	TAG
Sent		VC		SUBJ	TAG

Tr: 'this will hurt, eh'

Puhi used a TAM in (7544), which makes the first phrase *ka mamae* adult-acceptable; the second phrase includes a babble bit, which is not.

Puhi's addition of the question tag *eh* again can be interpreted as changing the sentence function to that of a leading question. Utterances like (7544), regarding potential or actual pain, or regarding evidence of previous pain, were a common theme in Puhi's production at the time. She used the topic to engage the attention of interlocutors, and to maintain conversation, as illustrated in Cameo 7.13. By favouring this topic of conversation (which generally garnered empathetic engagement from her interlocutors) Puhi maximised her opportunity to practise structures with the state intransitive verbs *mamae* and *whara*, as well as associated structures and vocabulary.

Example (7545) is an adult-approximate two-phrase sentence. It is introduced by a high-frequency, neuter-verb phrase *kua mutu* 'has finished' followed by a subject NP with a modified noun. The determiner in the subject NP is omitted.

(7545) Age 27;0

Puhi:	/ku	wutu	wa:	haroi/
Interpret:	(kua)	(mutu)	(wā)	(horoi)
Gloss:	TAM	be finished	ØDET	time wash
Phrase:	TAM	V	ØDET	N MOD
Sent:		VC		SUBJ

Tr: 'wash time has finished'

Since Puhi produced (7545) in imitation of the utterance of an adult, its communicative function is primarily interpersonal, to maintain conversation, but may also indicate her understanding of the topic of that conversation.

Examples (7542) to (7545) indicate that two-phrase sentences with the state intransitive verbs *mamae* and *whara* were established in Puhi's production by 24;0. Two-phrase sentences with the neuter verb *mutu* were beginning to emerge by 27;0.

7.5.5.2.2 Transitive

There are two categories of transitive verb in te reo Māori: canonical transitives, and experience verbs (see 4.4.3.2). Both categories are represented in the first-sentences data, and are discussed below.

7.5.5.2.2.1 Canonical transitive

Canonical transitive verbs do not always have stated DOs in my data, for the same reasons that DOs are also omitted from adult sentences, for example: the DO may be implied because it has been previously stated or because it is implied with some verbs, e.g., *kai* ‘eat’ may have the implied object *kai* ‘food’. In addition, DOs may be omitted from some of Puhi’s utterances because her proficiency is still developing.

The sentence in (7546) is a close approximation of a VC + Subj + DO declarative structure. Since Puhi produced the sentence in imitation of me saying *ka whakakā a Nēni i te ahi* ‘Nēni will light the fire’, my utterance guides the interpretation.

(7546) Age 24;0

Puhi:	/ka ha	a	neni			ahi	e:i
Interpret:	(ka whakakā)		(Nēni)	∅PREP	∅DET		(ei)
Gloss:	(TAM) ignite	PERS	KIN	∅PREP	∅DET	fire	TAG
Phrase:	(TAM) V	PERS	N	∅PREP	∅DET	N	TAG
Sent:	VC		SUBJ			DO	TAG

Tr: ‘Nēni will light the fire, eh’

Puhi’s VC /ka ha/ may be interpreted as a blend of the original VC, *ka whakakā*, or for example:

- the TAM is *ka* and Puhi has abbreviated the verb *whakakā* ‘to cause to ignite’ to a single-mora form; or
- the phrase intended is (TAM) + V, where the TAM is omitted and the verb is a two-mora abbreviation of *whakakā*.

Further, Puhi added a question tag to my original utterance, and this, together with the imitation itself, signals that the communicative function was interpersonal, i.e., to maintain the conversation.

In (7547) the subject is realised, but Puhi omitted the DO (in this case, the road) because it was mentioned previously.

(7547) Age 24;3

Puhi:	/i	witiwiti	puhi.ihaia/
Interpret:		(whakawhiti)	
Gloss:	TAM	cross	ØPERS NAME
Phrase:	TAM	V	ØPERS NAME
Sent:		VC	SUBJ

Tr: 'Puhi Ihaia crossed [the road]'

The communicative function is referential, as Puhi was recounting what had recently occurred.

7.5.5.2.2.2 Experience

Puhi produced just one two-phrase sentence with an experience verb. The DO is omitted but is implied by the context, in which Puhi is requesting an item being held by the addressee.

(7548) Age 28;2

Puhi:	/ke te	hjahja	au/
Interpret:	(kei te)	(hiahia)	
Gloss:	TAM	want	1SG
Phrase:	TAM	V	N
Sent:		VC	SUBJ

Tr: 'I want'

The sentences in this section are two-phrase sentences, and this signals progression from her single-phrase TAM + V utterances in the first-combinations period and further confirms Puhi's phrasal acquisition of te reo Māori.

Sentences of two or more phrases with canonical transitive verbs are present, but few, in my data. This indicates that, by 25;0, these phrases were emerging but lagged behind intransitive verbs in frequency in Puhi's production. This may reflect verb frequencies in spoken language in general, and is an area for further research. By the end of the sentences period, two-phrase sentences with experience verbs were beginning to emerge.

7.5.5.3 Passives

This section concerns Puhi's production of passive forms. These forms are traditionally high-frequency in te reo Māori (Nicholas, 2010), both as transitive imperatives, and in sentences that express perfective events e.g., *kua hokona* '[it] has been sold'. Passive forms first appeared in Puhi's first-words period, mostly in imperative structures, which were high frequency forms in the infant- and child-directed talk of Puhi's language environment in my data. These forms continued to appear through the first-combinations period, and into the first sentences period. Puhi also produced examples (7549) to (7552), with the passive forms *tangohia* 'taken', *taea* 'be able', and *whiua* 'thrown'.

The first example (7549) is analysed in two ways.

(7549) Age 25;0

Puhi:	/iōiōiōi	taohia	tokena/
Interpret:	BB	(tango.hia)	ØDET tōkena
Gloss:		take.PASS	ØDET sock
(a)			
Phrase:		V.PASS	DET N
Sent:		VC	SUBJ
(b)			
Phrase:	PROTO	V.PASS	DET N
Sent:	TAM	VC	SUBJ

Tr (a) 'take [off the] sock'

Tr (b) '[the] sock is being taken off'

In analysis (a), (7549) is an imperative sentence that follows an uninterpreted babble-bit. In this analysis the sentence would be adult-acceptable but for an

omitted particle in the subject NP. In analysis (b), the babble-bit is interpreted as a proto TAM and the utterance as a passive sentence that is adult-acceptable apart from an omitted particle in the subject NP. Note, however, that the proposed proto-TAM does not have the typical (C)V(V) structure of her earlier proto-TAMs.

Puhi produced (7549) in the same interaction as she produced (7540), (7552) and two single-phrase utterances /ka tanohia/ (*ka tangohia*) ‘will take off’, an acceptable null-subject sentence; and /ə tahohia/ (PROTO *tangohia*) ‘be taken [off]’. Together, these utterances illustrate Puhi’s experimentation with active and passive forms of the transitive verb *tango* ‘take [off]’. Their communicative function was both interpersonal and referential as a simultaneous narration of Puhi’s playful actions, addressed to the wearer of the sock that Puhi was removing (see also 7.5.5.4.2 and 7.5.7.1).

Examples (7550) and (7551) are adult-approximate for the reasons exemplified in the analysis of (7545) in 7.5.5.2.

(7550) Age 24;0

Puhi:	/ka fu: a	au/
Interpret:	(whiu/whiu.a)	
Gloss:	TAM throw/be thrown	1 SG
(a)	(ka whiu.a	øPREP au)
Phrase:	TAM V.PASS	øPREP N
Sent:	VC	ADV
(b)	(ka whiu	au)
Phrase:	TAM V	au
Sent	VC	SUBJ

Tr (a) ‘[it] will be thrown by me’

Tr (b) ‘I will throw’

If Puhi was targeting a passive sentence with an omitted patient subject, then (7550a) is adult-approximate, since she omitted the preposition in the adverbial phrase (see 4.4.5). Alternatively, if Puhi was targeting an active transitive sentence (7550b), she added an unnecessary passivising suffix to the verb. The

context, in which Puhi picked up a clod of dirt and then threw it, makes it clear that she did not intend *ka whiua au* ‘I will be thrown’. Similar structural analyses are possible for examples (7550) and (7551).

(7551) Age 24;1

Puhi:	ka	taia	au
Interpret:		(tae.a)	ØPREP
Gloss:	TAM	able.PASS	ØPREP 1SG
Phrase:	TAM	V.PASS	ØPREP N
Sent:		VC	AG

Tr: ‘will I be able?’

The probable target of (7551) is the passive sentence, *ka taea e au* ‘I am/will be able’. There is some evidence that this sentence is a blend of Māori vocabulary and syntax with the English semantics and politeness practices encapsulated in the common NZE request *Can I please...* Quite apart from a missing preposition, the form *ka taea e au* is not pragmatically or semantically acceptable to older speakers of Māori as a polite request (see also Kelly, 2015, p. 49-51).

(7552) Age 28;1.5

Puhi:	/ke te	tanohia?	au:/
Interpret:	(kei te)	(tango.hia)	ØPREP
Gloss:	TAM	take.PASS	ØPREP 1SG
(a)	(kei te)	tangohia	ØPREP au)
Phrase:	TAM	V.PASS	ØPREP N
Sent:		VC	AG
(b)	(kei te)	tango	au)
Phrase:	TAM	V	N
Sent:		VC	SUBJ

Tr (a) ‘[It] is being taken off by me’

Tr (a) ‘I am taking it off’

The structure and analyses of (7551) and (7552) are the same as those of (7550).

In real-time, Puhi's actual utterance was *kāo, kei te tangohia au*. That is, the sentence analysed in (7552) was preceded by *kāo* 'no'. The communicative function of the actual utterance was interpersonal, that is, to refute an interlocutor's statement and to make an alternative proposition (see also 7.5.7.1.1).

The sentence in (7553) is a passive declarative with omitted patient subject and omitted agent.

(7553) Age 24;4

Puhi:	/i	fu:a	ate	ki	roto/
Interpret:		(whiua)	(atu)		(roto)
Gloss:	TAM	throw.PASS	away	to	inside
Phrase:	TAM	V	MOD	PREP	N
Sent:		VC			ADV
Tr:	'[it] was thrown inside'				

Here, Puhi extended the sentence with a locational preposition phrase. Therefore, (7553) indicates the emergence of goal phrases in Puhi's production.

There are no sentences in my data with both a passivised verb and an adverbial agent phrase introduced by *e*. Since this adverbial is optional in a sentence such as (7553), the sentence can be considered complete without it. Adverbials in general are few across my data. It appears that, by 29;0, they were only beginning to emerge in Puhi's production, and agent adverbials in passive sentences had not yet emerged. Instead, Puhi may have generalised passive forms by using them in active sentence structures. Supposing that there are ample traditional passive forms in her input language, Puhi is likely to progress towards those forms. On the other hand, it is possible that her passive forms result from her hearing non-traditional passive forms from younger speakers and L2-Māori speakers. This is an area for further research (see Kelly, 2015).

To summarise, by 30;0, Puhi had progressed from single-phrase sentences with passive verb forms to generating adult-approximate two-phrase declarative

sentences with these forms. Puhi's forms may have been a blend of active and passive declarative sentences that (a) signal influence from L2-Māori adults in her environment; or (b) signal her creativity with passives as she progressed on her LA trajectory towards adult-acceptable structures.

7.5.5.4 Imperatives

Puhi produced numerous instances of single-phrase imperatives in the sentences period. These included structures such as *e puta* 'emerge', *e tū* 'stand', *haere (atu)* 'go (away)', *haramai* 'come', *pekepeke* 'jump (repeatedly)', *titiro* 'look', *mahi anō* 'do again', *awhiawhi* 'hug', *homai* 'give (to the speaker)', and *waiata* 'sing'. Sentences with more than one phrase are illustrated below.

7.5.5.4.1 Intransitive

Puhi produced imperatives with two intransitive verbs: *haramai* 'come here' and *titiro* 'look'.

Examples (7554) to (7556), are action intransitive verb imperatives with goal adverbials that are normally introduced by the preposition *ki*. In (7555), Puhi used *i*, which is usual in transitive sentences, but not acceptable with *titiro*, as here.

(7554) Age 24;1

Puhi:	/titijo	i	jau	wats wats/
Interpret:	(titiro)		(au)	(watch watch)
Gloss:	look	PREP	1SG	watch watch
Phrase:	V	PREP	N	TR
Sent:	V		DO	TR

Tr: 'look at me, watch, watch'

(7555) Age 24;3

Puhi:	/titido	te	ninanina/
Interpret:	(titiro)		(ringaringa)
Gloss:	look	øPREP DET SG	hand
Phrase:	V	øPREP te	ringaringa
Sent:	VC	ADV	

Tr: 'look [at] the hand'

(7556) Age 24;3

Puhi:	/titiro	ki te	vakarere/
Interpret:	(titiro)		(wakarere)
Gloss:	look	PREP DET SG	aeroplane
Phrase:	V	PREP DET N	
Sent:	VC	ADV	

Tr: 'look at the aeroplane'

In (7556) she omitted the preposition. In (7557) the preposition *ki* is clearly articulated. These examples therefore collectively indicate that Puhi was experimenting with prepositions as she worked out the adult rules with different verb classes. The communicative functions of (7554) to (7556) are both referential and interpersonal, since Puhi used them to coordinate attention with interlocutors about entities in her environment.

Puhi produced (7557) late in the sentences period, at 28;0.

(7557) Age 28;0

Puhi:	/hamai	ki te kai	ne:ni/
Interpret:	(haramai)		(Nēni)
Gloss:	come	TAM eat	KIN
Phrase:	V	TAM V	KIN
Sent:	VC	ADV	KIN

Tr: 'come to eat, Nēni'

The utterance *haramai ki te kai* 'come to eat' recurred frequently in her environment. It has an interpersonal communicative function of expressing *manaakitanga*, (see 3.4.4 and 6.6.4). In real-time, I suggested to her that she might actually be meaning *ki te mātakitaki* 'to watch [kapa haka]' (see Cameo

6.21). This suggests that Puhi learnt the sentence as a single unit, and that the expression of *manaakitanga* was her primary intention. This example also illustrates one of only a few adverbials in my data, and is the first example of the use of the TAM *ki te* (see 4.4.4.3.1) at age 28;0.

The examples given above signal that two-phrase intransitive imperatives had begun to emerge by 28;0, but were limited to just two verbs, *titiro* and *haramai*.

7.5.5.4.2 Transitive

Transitive verb imperatives with two phrases emerged by 25;0.

Puhi produced (7558) while playfully claiming my sock as her own. Utterance (7558) is analysed as having a passivised verb and realised subject.

(7558) Age 25;0

Puhi:	/ta.ɔhia	tɔkena/
Interpret:	(tango.hia)	(tōkena)
Gloss:	take.PASS	øDET sock
Phrase:	V.PASS	øDET N
Sent:	VC	SUBJ
Tr:	'take [off] ...sock'	

In the analysis shown above, Puhi omitted the determiner. However, (7548) in 7.5.5.3, is analysed as both a passive declarative sentence and an imperative, and (7558), analysed here as an imperative, could also be analysed as a declarative sentence with an omitted TAM. The communicative function is referential and interpersonal (see also 7.5.5.3 and 7.5.7.1.1).

Example (7559) is an adult-acceptable transitive imperative with *homai* (which does not require a passive ending) and a realised subject.

(7559) Age 27;0

Puhi:	/hɔmai	ja	jati/
Interpret:	(homai)	(ngā)	(nati)
Gloss:	give	DET PL	nut
Phrase:	V	DET	N
Sent:	VC	SUBJ	

Tr: 'give me the nuts'

Example (7560) illustrates a passivised transitive verb imperative with realised patient subject. The demonstrative pronoun requires no determiner.

(7560) Age 28;2

Puhi:	/katia	tenei/
Interpret:	(kati.a)	(tēnei)
Gloss:	shut.PASS	this
Phrase:	V.PASS	N
Sent:	VC	SUBJ

Tr: 'shut this'

The communicative function of the three examples (7558) to (7560) can be analysed as directive; however, they could also be analysed as referential, since Puhi produced them as she performed the actions herself.

The imperatives in the above examples show that, by 24;1, Puhi was progressing from using single-phrase imperatives to also using two-phrase imperative sentences. By 28;0, two-phrase imperatives had emerged in Puhi's production with a small number of passivised transitive verbs.

7.5.5.5 Actor-Emphatic

According to W. Bauer (1997) there is controversy over how actor-emphatic sentences should be analysed. I adopt the analysis where the possessive phrase is the predicate, and the remainder a sentential subject. At the phrase level, the basic form of the actor-emphatic sentence is PP (+ VC) (+ NP) where the PP is introduced by one of the possessive prepositions *nā* or *mā*. Thus the predicate of an actor-emphatic sentence is identical to that in a possessive predicate sentence where the predicate PP is introduced by *nā* or *mā* (see

7.5.4.2). In isolation, example (7561) could be analysed as the predicate of either a possessive sentence or an actor-emphatic sentence. In the context in which it occurred, supplied in Cameo 7.12, there is good reason to choose the latter structure, because she produced this utterance in response to an actor-emphatic sentence.

(7561) Age 24;0

Puhi:	/na:	daða/
Interpret:	(nā)	Dela
Gloss:	belong	NAME
Phrase:	PREP	NAME
Tr:	'Dela's'	

Cameo 7.12. Puhi's alternative proposition

Age: 24;0

	<i>Puhi notices and picks up an umbrella.</i>	
1:21	Puhi	[high pitch, excited] /ɔ:/ /hei/ /hei/ /neinei teinei/ (ō, hei, hei, Nēni, tēnei) <oh, hey, hey, Nēni, this>
	<i>Puhi lifts the umbrella up, turning to show MH.</i>	
1:25	MH	Āe nā Nēni Niki i hoatu tēnā ki a koe, nē. <Yes, Nēni-NikiP gave you that, eh>
1:28	Puhi	/kaɔ/ /na: daða/ (Kāo. Nā Dela) <No. Dela did>

While a possessive sentence cannot be ruled out, there is a strong indication that Puhi was targeting the actor-emphatic sentence. This is supported by her production, four weeks later, of (7562).

(7562) Age 25;0

Puhi:	/nə	ne	neni	i	mahi
Interpret	(nā)	BB	(Nēni)		
Gloss:	PREP	BB	KIN	TAM	work/do
Phrase:	PREP		N	TAM	V
Sent:		NPRED			SUBJ
Tr:	'Nēni did [it]'				

Utterances (7561) and (7562) are the only two possible examples of actor-emphatic sentences in my data. Together with the examples in 7.5.4.2, they

show that, by 24;0, Puhi was extending past single-phrase possessive-predicate utterances into both possessive sentences and actor-emphatic sentences.

7.5.6 Negative sentences

This analysis uses Hohepa's (1967) description that negative sentences in Māori are verbal, but presents them here in their own section, since negation in te reo Māori is more complex than the verbal structures dealt with thus far. This is because negation involves embedding the entire affirmative sentence as a subordinate clause that acts as the subject to the negative predicate. In addition, the subject of the affirmative may be raised to appear as the superficial subject of the negative (see 4.4.9 for further detail).

Analysis of input data gathered in the three months prior to Puhi turning 24;0 revealed the range and frequency of negative forms that Puhi heard at that time. Most were holophrases, *kāo* 'no' being the most frequent, followed by imperative negator *kaua* 'don't'. Verbal sentence negators *kāore*, *kāre*, and *karekau*, and the nominal-sentence negator *ehara*, were significantly lower in frequency.

In the sentences period, Puhi continued to produce holophrastic negative forms such as *kāo*, *kāre*, and *kaua*. In addition, she also combined *kāo* with other words and phrases (see 7.5.6.1) to produce longer negative utterances. Table 7.9. presents an inventory of her utterances that are one phrase or more in length, and that include a negative form.

The examples in Table 7.9 fall into three categories which are described and analysed in sub-sections 7.5.6.1 to 7.5.6.3.

Table 7.9. Inventory of Puhi's negative forms to 29;0

E.g. no Age	Puhi	Interpretation	English gloss
(7563) 23;1	/kauae pəkə/	kaua e peke/piki	don't jump/climb
(7564) 24;0	/... ka.ðe ka.ka.hu/	... kare kākahu	not clothes
(7565) 24;0	/kaɔ ke te te:pu:/	kāo, ki te tēpu	no, at/on the table
(7566) 24;1.5	/ka e peke/	kaua e peke/piki	don't jump/climb
(7567) 24;3	/n n kaðe ðɔa e:i/	...kāre roa, ei	...will not [be] long, eh
(7568) 24;3	/ka:ðe hu: ei/	kāre hū, ei	no shoes, eh
(7569) 24;4	/a: kaðe anɔ/	ā/āe kāre anō	yes, not yet
(7570) 25;0	/kaua e ði ki amɔ/	kaua e ... ki Amo	don't ... to Amo
(7571) 25;0	/amɔ kae fa:da/ /kae pana amɔ/	Amo, kaua e pana kaua e pana, Amo	Amo don't push don't push, Amo
(7572) 25;0	/ka:ɔ tɔkena/	kāo tōkena	no [to] sock
(7573) 27;0	/kaɔ tɐ hɐwɐ.ə mimi/	kāo te hiahia mimi	[I do] not want to pee
(7574) 27;0	/kaje te: mimi/	kāre te mimi	[I was] not peeing
(7575) 27;0	/kare a a aðẽ/	kāre he ārani	no oranges
(7576) 27;2	/panuitʃaðe kau e fjua/	[NAME] kaua e whiua	don't throw it

7.5.6.1 Kāo and kāre as proto-sentence-negators

Between 24;0 and 27;0, Puhi produced six negative utterances negated with *kāre*, and three negated with *kāo*. In her 25th month, she produced two formulaic chunks (7567) and (7569), and in the same month she combined both *kāo* and *kāre* with single words when objecting to putting on clothes e.g., (7564), (7568) and (7572). She also used these negators to reject an

interlocutor's suggestion or question as in (7573) and (7574) and, in (7575), to reject something offered.

(7578) Age 27;0

Puhi:	/kaɔ	tə	həwə.ə mimi
Interpret:	(kāo)	(i te)	(hia.mimi)
Gloss:	NEG	TAM	want.pee
Phrase:	NEG	TAM	V
Sent:	V		SUBJ

Tr: 'I] don't want to pee'

(7579) Age 27:0

Puhi:	/kaje	te:	mimi/
Interpret:	(kāre)	(i te)	
Gloss:	NEG	TAM	pee
Phrase:	NEG	TAM	V
Sent:	V		SUBJ

Tr: 'I was not peeing'

In (7578) and (7579), Puhi used *te* in place of the TAM *i te*.

(7580) Age 27:0

Puhi:	/kare	a.a:	aðě/
Interpret:	(kāre)	PROTO	ārani
Gloss:	NEG		orange
Phrase:	NEG		N
Sent:	V		SUBJ

Tr: 'Not an orange'

Puhi produced (7580) in response to an offer of a orange and other food to eat. She accepted the other food, but refused the orange, which suggests that the utterance is a negated verbal sentence. If so, and she was targeting *kāre au i te hia ārani* then /a.a:/, interpreted in (7580) as a proto-particle may in fact have represented any part, or all, of the underlined portion.

Though not yet full sentences, Puhi's combinations signal that she was beginning to generate her own negative structures.

7.5.6.2 *Kaua* as an imperative negator

Kaua e + V is a high frequency infant-directed sentence structure in my data and first appears at age 23;0.5. From that time Puhi used the structure proficiently e.g., in (7563), (7566), (7571) and (7576). Thus, although her articulation was still developing, my data shows that this structure was established in Puhi's production by 29;0.

7.5.6.3 Communicative functions of negative utterances

Puhi's negative utterances had four main communicative functions:

- *kaua e* directives were used to direct others to stop certain activities, including *kaua e pana* 'don't push', which Puhi said twice to a surprised aunt, who had not pushed anyone, and had no intention of doing so;
- "alternative propositions" introduced by *kāo* or *kāre* (see 7.5.7.7.1);
- clarifying what she did not want, e.g., (7572) to (7575); and
- agreeing with *whānau* members by repeating their formulaic phrases as in (7567) and (7569).

7.5.6.4 Summary of negative utterances

By 25;0 formulaic negative phrases had emerged in Puhi's production, together with combinations of *kāo* or *kāre* with a base, and *kaua e* + V. By 27;0, some utterances negated with *kāo* and *kāre* were closer to adult norms, but still required some refinement of, for example, mid-sentence particles to be minimally acceptable two-phrase negative sentences.

7.5.7 Analysis of ten indicator words

Some of the communicative functions for which Puhi used her first sentences have been indicated in 7.5.3 to 7.5.6. In this section I briefly discuss the appearance of the indicator words in Puhi's first-sentence data, including the communicative functions of those utterances in which the indicator words appear.

7.5.7.1 *Māmā, Pāpā, Nēni and Pēpē*

Names and kinship terms continued to play a part in a range of communicative functions in Puhi's production. These include the following:

- *whanaungatanga*: e.g., listing names after spending holidays with relatives
- coordinating attention: e.g., *Pāpā Awa, titiro* 'Uncle Awa, look';
- taking on a role of responsibility, e.g., *ka pai Paenui* 'good, Paenui';
- *manaakitanga*; e.g., *haramai ki te kai, Nēni* 'Come to eat, Nēni'
- connecting things with people in possessive structures (see 7.5.4.2, and also 7.5.7.1.1);
- requesting assistance: e.g., *Nēni Maraea, te tūru* 'Nēni [I need help with] the chair'.

In addition, alternative propositions and idiosyncratic structures are discussed in 7.5.7.1.1 and 7.5.7.1.2, below.

7.5.7.1.1 *Alternative propositions*

Of the forms that included names and kinship terms in 7.5.4.2, and 7.5.5.6, several had the communicative function I refer to as "alternative propositions". Puhi expressed herself in conversation by refuting an interlocutor's utterance (with, e.g., *kāo* 'no') and then presenting her own alternative proposition. For example: She produced *kāo, nā Pāpā* 'no, [it is] Pāpā's' in reference to Unc-Awa's hat she was wearing, in response to Unc-Awa asking for it back. Additionally in the same event, Puhi was removing my sock from my foot, and in response to my (playful) utterance *Waiho taku tōkena* 'leave my sock' Puhi playfully proposed: *nā Puhi* '[it is] Puhi's [sock]'. Puhi claimed various items on behalf of various people in dispute with her interlocutors, thus gaining experience with debating skills, humour, and language play, as well as experimenting with connections between those items and the people in her life.

7.5.7.1.2 *Idiosyncratic use of Māmā*

Puhi continued with her idiosyncratic use of *Māmā* to people other than her mother when making requests. Her intention in doing this is unclear but it may

have been to use the form as a generalised term of endearment or respect, or as a tag that signalled politeness, like *please* in English (see 7.4.5.1).

7.5.7.1.3 Names in English utterances

Two utterances with kinship terms exemplify Puhi's experimentation with English utterances. Examples (7581) and (7582) show Puhi's use of *Māmā* in phrases that are consistent with typical English language two-morph norms.

Age 27;3	Puhi	tokens	Interpretation
(7581)	/is ma:ma:/	3	it's Māmā
(7582)	/ma:ma de/	4	Māmā there

That is, /is ma:ma/ could be – and was interpreted in real time as – a contracted form of either '[it] is Māmā', '[there] is Māmā', or '[where] is Māmā' and /ma:ma de/ could be 'Māmā [is] there'. This utterance signals that Puhi's English LA was also progressing, and that she was producing two-word English structures comparable to those produced by L1-English children, while at the same time her te reo Māori LA had progressed beyond the two-morph stage, and te reo Māori remained her preferred, principal productive language. Analysing the event in which the utterances occurred gives insight into the communicative function of the utterance, Puhi's *tuakana* role, and her understanding of the use of te reo Māori in her *whānau* as the language for use with infants. The three tokens of /is ma:ma/ occurred when Puhi addressed Nēni-NikiP, who used mostly English to Puhi. This may signal Puhi's understanding that Nēni-NikiP was an English speaker with whom she should therefore use English. Puhi's utterances prompted a multiparty interaction in English as MH and Nēni-NikiP tried to interpret Puhi's utterance. They reframed her utterance and addressed her with their guesses, and Puhi made further attempts. Her younger cousin B-Paenui then joined in, and Puhi directed two tokens of /ma:ma de/ 'māmā there' to him before leading him away to his mother in another room. This may signal Puhi's understanding that adults and older children in her *whānau* mostly used

English, and that taking on the role of a *tuakana* and *tuahine* involved using English as well as Māori.

7.5.7.2 Waewae

The only instances of *waewae* in my data prior to the first-sentences period were holophrastic. However, in the first-sentences period, *waewae* appeared in several sentences at age 24;0 (see Cameo 7.13). A week later, *waewae* appeared in the formulaic chunk *waewae takahia* ‘legs, stamp’ when Puhi performed a *haka* for her own enjoyment, to the delight of *whānau* members. Koro-Leon and Unc-Awa encouraged her by saying *kanikani* ‘dance’, and *mahia tō haka* ‘do your haka’. This event links her understanding of the word *waewae* with her *kapa haka* trajectory (see 6.5).

Waewae also occurred in several utterances that also included multiple babble-bits and proto-morphs (see Cameo 7.13). Although this makes the utterances difficult to analyse in comparison with adult syntax, nevertheless they illustrate nicely Puhi’s lengthening utterances, referential use of *waewae*, and her proficiency in introducing a topic of conversation (sand on her feet) and in sustaining the topic over many conversational turns. Words pertaining to legs/feet are underlined in this cameo. The interaction signals that Puhi was, at 24;3, able to initiate and sustain a discussion about her *matikuku* ‘toenails’ (possibly intending *matimati* ‘toes’) and her *waewae* ‘feet’ as well as *oneone* ‘sand’, and *mamae* ‘pain/lesion’. Puhi did this via utterances comprising numerous babble bits together with interpretable words which are largely ordered according to syntactic norms.

Cameo 7.13. Sandy feet conversation

Age: 24;3

1:00	<p>PI reaches towards her foot:</p> <p>PI /fetekuku/ (matikuku) <toenails [I think she means toes]></p> <p>PI looks at MH, then at her own foot:</p> <p>PI /fetekuku titiðo paðupaðu/ (matikuku, titiro, paruparu) <toenails, look, dirty></p> <p>MH Paruparu tō waewae? <[Is] your foot dirty?></p> <p>PI brushes the soles of her feet with her hand:</p> <p>PI /ɔ:i/ (āe) <Yes></p> <p>MH Nā te kirikiri? Te oneone? <Because of the sand?></p> <p>PI /i? oneanoē nenene kōre: dā: tō waewae e:i/ (...oneone...te waewae, ay) <...sand...foot, eh></p> <p>MH Ō, ... kei runga te oneone i tō waewae? <Oh, is there sand on your foot?></p> <p>MH brushes a finger over PI's toes.</p> <p>PI looks away from MH, brushing at her own foot.</p> <p>PI /a:e/</p> <p>MH Ā. Kua paruparu? <Is it dirty?></p> <p>PI and MH make eye contact...</p>
2:00	<p>PI /gə: gə gə ne matikuku aðe paðupaðu matikuku e:i/ (...matikuku...paruparu matikuku, ei) <toenails dirty, eh></p> <p>MH ...paru ō matikuku? <Are your toenails dirty?></p> <p>PI [looking at MH]/a:e/ (āe) <yes></p> <p>PI /nə paðpaðu unənə anō ei/ (...paruparu...anō, ei) <dirty... again, eh></p> <p>PI /hanənə paðupaðu ei/ /nə paðupaðu.../ <...dirty, eh ...dirty...></p> <p>PI brushes feet enthusiastically with L hand.</p>
3:00	<p>PI /ndə pəðpəðu eo wawae titiðo məmɔe titiðo/ (...paruparu... waewae titiro, mamae, titiro) <dirt... foot... look, sore, look></p> <p>PI inspects an insect bite on her calf.</p> <p>PI /titiðo/ (titiro) <look></p> <p>PI looks up at MH</p> <p>PI /mamae/ (mamae) <sore></p> <p>MH He mamae. Oh he mamae. <Is it sore? Oh it is sore></p> <p>PI kicks leg up and down.</p> <p>MH He mamae kei tō waewae? <Have you got a sore/lesion on your leg?></p>

7.5.7.3 Kite and mutu

Kite and *mutu* continued to appear mostly in the same formulaic phrases *ka kite* and *kua mutu* in which they first appeared in the first-combinations data. An indication that Puhi was beginning to extend her use of *kua mutu* into longer utterances is illustrated in example (7545).

7.5.7.4 Auē and yay

Auē and *yay* continued to appear as holophrases through the sentences period.

7.5.8 Summary of first-sentences analysis

In this section I have identified sentence structures in Puhi's production between age 24;0 and 30;0, and presented a linguistic analysis of those structures. My analysis indicates that most of Puhi's sentences were declarative, both in form and function, but imperative and interrogative forms are also present in my data. Experimentation, omission, and overgeneralisation are features of Puhi's early sentences. Incomplete sentences suggest in some cases that Puhi was still learning adult syntax, but also that she made performance errors, as all speakers do, and some of these she self-corrected. With regards to particles, Puhi continued to experiment and, as time passed, the frequency and clarity of some adult particles greatly increased. In particular, initial particles preceded mid-sentence particles in Puhi's language development, perhaps because the former were positioned more saliently and audibly. Puhi generated sentences starting with the nominal particle *he*, prepositions *nā* and *kei*; and TAMs *ka*, *kei te*, and *kua*. She omitted particles frequently in initial position and DO prepositions mid-sentence – which is adult-acceptable – but she also sometimes omitted determiners mid-sentence, which is not. The TAMs *e...ana*, *me*, and *kia* occurred with a restricted number of verbs or verb classes, and mostly in formulaic phrases, all indicating that these lag behind other TAMs with which she was generating phrases. A small number of

TAMs, including *i te*, are not present in my data, signalling that these were yet to emerge.

In my data, Puhi indicated possession mainly by possessive predicate phrases introduced by *nā*. Possessive determiners and possessive PPs were beginning to emerge; the latter were modifiers in NPs. She produced verbs from all the verb classes of te reo Māori, with the greatest number of verb types appearing with no TAM, proto-TAMs, and/or as imperatives. Verb classes that normally appear in adult imperative forms also appeared appropriately in Puhi's production.

A few English sentences appear in my data, and only a single mixed-language two-phrase sentence. Even though there are only a very few examples captured in English, her progression in both languages is evident. Her understanding that different people use different languages became apparent by 28;0, when she used English with an English-speaking *whānau* member. In addition in all of Puhi's Māori sentences, and her few English sentences, word order was acceptable according to adult norms. These features are typical of BLFA development.

Puhi's production also reflected her emergent numeracy, for example, she occasionally used number sequences as formulaic chunks (i.e., she counted aloud) when prompted by adults, but had not produced any numerical sentences by 30;0.

These features are comparable to those of children at a similar level of acquisition across languages and cultures. Without recourse to multiple corpora, including pre-contact language-acquisition data, there is nothing to suggest that Puhi's language acquisition to 2;4 is anything but typical for a MEB child. However, there is evidence of significant change in the structures being acquired by speakers of te reo Māori in recent decades, and Puhi's divergent structures, e.g., *nā au*, substituting A for O and vice versa, and structures that

are absent from her production at this early stage (e.g., the full range of function words and an immature grasp of possessive forms *mōku*, *nōku*) may be indicative of change on that broader scale, and could provide indicators of areas for further research.

Basic communicative functions are all present and include:

- personal – such as expressing wants and needs;
- interpersonal – such as proposing ideas;
- directive – such as requesting;
- referential – such as talking about entities and actions; and
- imaginative – such as being creative with language.

The results reflect Puhi's increasing proficiency across a range of sentence structures, with a growing lexicon and increasingly elaborate phrases. They also reflect that, at this young age, gaps remained in her language production.

7.6 Chapter summary

As Puhi moved into the role of “speaker” her LA trajectory became apparent through her productive use of language. I have plotted Puhi's LA trajectory in this chapter by identifying and analysing structures in three sets of Puhi's productive-language, which I refer to as her “first words”, “first combinations” and “first sentences”. I have also proposed answers to the set of guiding questions with which I introduced this chapter. By addressing those sub-questions, I have also addressed my second major research question.

Puhi's very earliest production consisted of single words. By mid-way through the first-words period, function words had emerged in single-unit holophrases which provided a starting point for the “first-combinations” period. As the latter period progressed, the majority of her combinations were consistent with the (PART +) B (+ MOD) phrase structure of te reo Māori. This finding reflects the

importance of function words in te reo Māori. With regards to acquisition of te reo Māori, I developed a new hypothesis from my finding, i.e., that

the first structures acquired and produced by children learning L1 Māori have a form that is consistent with the basic phrase of te reo Māori. That form is (PART +) B (+MOD).

This finding is a significant contribution to our understanding of te reo Māori, and of the natural acquisition of te reo Māori. It also supports Biggs' (1969) assertion that the phrase is the basic unit of te reo Māori.

Identifiable nominal and verbal structures emerged concurrently in my data. However, many of Puhi's utterances lacked initial particles, and in these cases, categorisation as nominal or verbal was usually impossible. Since omitted initial particles are common in informal adult speech, my data underlines the fact that Puhi was targeting forms she heard in her language environment, which included adult-acceptable structures both with and without initial particles. In addition, Puhi's Māori-language structures were consistent with the VSO word-order and phrase-order of te reo Māori, while her few English structures were consistent with the word-order of English.

As expected, passive forms emerged early in imperative structures in Puhi's production, which reflected the high frequency of these forms in IDT and CDT input. By 29;0, Puhi was experimenting with passive sentences, but had not yet produced any adult-acceptable sentences with adverbial agent phrases introduced by the preposition *e*.

By 29;0, the high-frequency *kaua e* + V structure was established in Puhi's production, and she was experimenting with other negative forms in sentences. This finding supports studies that indicate high frequency as a contributor to acquisition of structures. It also indicates that, where frequency is not high, acquisition of complex structures is a gradual process. Additionally, despite Puhi not having achieved adult-acceptable negative structures by 29;0, she was

proficient in using her negative forms for a range of communicative functions, such as objecting, denying, proposing alternatives, refusing, and disagreeing.

Puhi's production reflected both languages in her environment. Across each data set there are examples of words, combinations that approximate typical utterances in both English and Māori, and two-phrase sentences in Māori. This indicates that she was analysing and appropriating language both from the ambient environment and from IDT. It indicates that Puhi's proficiency in both languages was developing, and that her ability to choose one or other language for specific communicative functions and with specific interlocutors was emerging by 29;0. However, Puhi's preference for te reo Māori as her principal productive language was indicated by the much larger number of Māori utterances across all three data sets. This latter finding underlines the findings in Chapters 5 and 6, that Puhi's socialisation environment, including cultural and situational aspects, expectations of whānau, and opportunity to hear and use te reo Māori contributed to her choosing to use te reo Māori productively, and to target the structures of te reo Māori that were used around her.

My findings in this chapter, which has presented the final of three analyses, are supportive overall of the hypothesis that children target structures that are specific to the languages they hear. The following chapter concludes my thesis, synthesising the findings of my three analyses by showing how this study contributes to our understanding of the acquisition of te reo Māori, and by suggesting pathways for future research.

Chapter 8: Conclusion

Mātuarautia ngā tamariki

or

It takes a village to raise a child

8.0 Introduction

This chapter brings together the three strands of my analysis to show how the research questions have been addressed, and how this study contributes to the fields of language socialisation and acquisition, and to the revitalisation of te reo Māori.

8.1 The study

The main aim of this study has been to gain an understanding of aspects of natural, Māori-language socialisation and acquisition through considering two research questions:

1. How does Māori language socialisation occur for two children growing up in a Māori-English bilingual environment?
2. In what order are grammatical structures of te reo Māori acquired by these two children as they are socialised as L1-Māori-English bilinguals?

This language-socialisation study has been concerned with communicative practices (verbal and non-verbal) and the situational and cultural contexts in which those practices occur, and with the particularities and universalities of language and culture. It has explored two children's language environments and their language production, and is the first study to document one child's path of development in te reo Māori and other communicative practices over the period from birth to 39 months.

A longitudinal, qualitative case-study approach was chosen as appropriate to following two children as they accumulated communicative (including linguistic), social, and cultural proficiencies over time. I used ethnographic methods to

gather data from the two case-study children and their families: video-recording *whānau* interactions within which the two children participated; observing the *whānau* interacting, keeping diary records; and soliciting comment by informal interview. In addition, in my capacity as Puhi's grandmother, I had access to *whānau* material such as everyday conversation, videos, photos, and social media comments, and was granted permission to gather some of this material for my study.

I carefully transcribed the video-footage, and supplemented this with data from other sources (see above) to generate (a) corpora of productive language from each of the two children and their families; and (b) rich descriptions of the children's interactions and environments. I used a language socialisation framework to analyse my data, since it focused attention on the role of language both in the process of socialisation, and as a goal of socialisation (Schieffelin & Ochs, 1996). This approach allowed exploration of the complexities of the bilingual first-language acquisition (BFLA) of an endangered heritage language and a dominant global language through both a linguistic lens and a socialisation lens. Such an approach was useful in a study of two very young children since it directed attention beyond language to other semiotic modes with which pre-verbal children become proficient before they learn to talk. My approach involved viewing interactions as embedded within situational contexts and within the wider cultural contexts in which socialisation takes place. It highlighted culturally-particular socialisation mechanisms through which *whānau* members individually and collectively guided the children along the pathways that they expected the children to follow. As noted in 3.4.3, three major collective goals of the two *whānau* were: raising young children as contributing *whānau* members; socialising their children towards speaking te reo Māori; and revitalisation of te reo Māori.

For the purposes of analysis I organised the data into eight sets, which are described in detail in 3.6.2. I undertook three strands of analysis, each discussed in its own chapter: Chapter 5 dealt with my analysis of four sets of data related to the case-study children's language environment and choice; Chapter 6 presented my socialisation analysis of all data collected from Puhi and her *whānau* over 39 months; and Chapter 7 presented my linguistic analysis of three sets of productive-language data gathered from Puhi. The reasons for the move in focus from both children to just one child are explained in 5.6 and in 8.2.1. The three strands of analysis have been presented separately for the purposes of exposition; however, all three are part of one closely interwoven and inter-dependent language-socialisation process. The next section will summarise the findings of each strand of analysis before drawing the threads together in a synthesis of the key findings in order to answer my two research questions.

8.2 Key findings

8.2.1 Language environment and choice

The two case-study children, Puhi and Jessica-Lee, were growing up in quite different environments, and – as could be expected – those differences had an impact on the language socialisation pathways taken by each child. To establish a picture of each child's language environment, I used a combined linguistic and socialisation approach to analyse the two children's ambient-language data sets, together with data gathered through informal interview and diary records. The aim was to address, in part, the first research question (see 8.1) by exploring factors that led to L1-Māori production.

I compared the results from each child's data sets and found that some aspects of their language environments were similar while others differed. Notable similarities were that:

- for both children, the *whānau* expected their children to become speakers of te reo Māori;
- each mother spoke Māori infant-directed talk (IDT) to her child most of the time; and
- English adult-directed talk (ADT) was the predominant language spoken around both children at home and in the community.

Notable differences were that:

- numerous other adults and children in Puhī's *whānau* spoke almost all Māori IDT to her, while other adults and older children in Jessica-Lee's *whānau* spoke almost all English IDT to her;
- some adults in Puhī's *whānau* almost always spoke Māori to almost everyone around Puhī: notably, this included her L1-Māori speaking great-grandfather. In contrast, Jessica-Lee's mother was the only regular source of te reo Māori input in her *whānau*, and primarily when directing talk to Jessica-Lee;
- most of the people that Puhī had contact with in her community were speakers of Māori, whereas few in Jessica-Lee's community were.

My analysis established the linguistic make-up of the children's early production and showed that, for Puhī:

- almost all two-word utterances consisted of Māori vocabulary, and had an underlying syntax that was consistent with the (PART +) B (+ MOD) phrase structure of te reo Māori (Biggs, 1969);
- a small number of utterances consisted of English vocabulary, and had an underlying English-language structure;
- consistent with BFLA, Puhī produced an occasional mixed utterance.

For Jessica-Lee:

- most two-word utterances consisted of English vocabulary, and had an underlying syntax that was consistent with typical two-word utterances of children learning L1-English (R. Brown, 1973);
- a small number of two-word utterances consisted of Māori vocabulary, and had an underlying syntax that was consistent with the (PART +) B (+ MOD) phrase structure of te reo Māori (Biggs, 1969);
- some two-word utterances consisted solely of Māori vocabulary, or mixed English-Māori vocabulary, and had an underlying syntax that was consistent with typical two-word utterances of children learning L1-English.

In summary, the principal input language directed to Puhi from the majority of her *whānau* was te reo Māori, while that directed to Jessica-Lee was English. Since, between 20;0 and 24;0, Puhi's principal productive language was te reo Māori and Jessica-Lee's was English, it is reasonable to draw a relationship between the language environment and the children's choice of productive language. The key finding here is that the language environment provided by each *whānau* as a whole, supported by the wider community, played a critical role in each child's choice. Given that both mothers used te reo Māori IDT, it is furthermore reasonable to hypothesise that, for an endangered heritage language, the one-parent-one-language strategy is insufficient on its own to counteract the overwhelming dominance of the majority language.

Having found that Jessica-Lee had chosen English as her dominant productive language, I ceased analysing the data gathered from Jessica-Lee and moved the focus of the study to just one child, Puhi, who, by age 24;0, had achieved the status of L1-Māori speaker.

8.2.2 Language socialisation

In focussing on Puhi's cultural and communicative environment, my goal was to gain insight into the role played by that environment in Puhi's language socialisation (see Chapter 6). Examination of the socialisation data set for Puhi collected across her first 39 months of life (see Table 3.4) led me to identify three "recurrent communicative practices" (Schieffelin & Ochs, 1996):

- *kōrero mai* interactions with infants;
- eye talk, including *pūkana* 'wide eyes'; and
- *kapa haka* 'traditional performing arts'.

Using Wortham's (2005) concept of trajectories of socialisation, I identified tacit and explicit signs, and events and sub-events that linked together to show how Puhi's socialisation progressed through and into each of the above practices. These signs and events were plotted to reveal trajectories of socialisation that

emerged over time. I presented my analysis as three separate trajectories of socialisation, noting also that each was closely interwoven with the others in real life. As I traced the three trajectories, I identified the importance of *whanaungatanga* 'relationships' to Puhi's language socialisation. I therefore traced her progression towards *whanaungatanga* roles, responsibilities, and values as a fourth trajectory that was woven through each of the *kōrero mai*, eye talk, and *kapa haka* trajectories.

From her birth, Puhi's *whānau* welcomed her and imbued her with participant and relationship roles. They tacitly communicated their expectations of pathways that she would follow while interacting with her and with each other in culturally-particular participatory arrangements, and while performing their own roles and responsibilities. When *whānau* members verbalised their expectations, discussed *whānau* practices, physically moved Puhi, overtly demonstrated practices to her, and directed her with imperatives, this amounted both to explicit communication of their expectations, and mechanisms for encouraging Puhi along the expected pathways. This occurred in her homes, and in the community, for example, at Kōhanga Reo, community events, and *marae*. In these places, *whānau* expectations were shared, and community members promoted Puhi's movement along the expected pathways just as her *whānau* did. In addition, Puhi acted as an agent in her own socialisation, appropriating the practices and roles of her *whānau* and community according to her preferences, and for her own ends. This sometimes aligned with the expected pathways, and sometimes diverged from them.

To summarise, in the same way that Puhi's language environment played a critical role in her language choice, so too, her cultural environment within her *whānau* and community played a critical role in Puhi's socialisation into *whānau* communicative practices, as well as relationship roles, responsibilities and values. Thus the key finding of my socialisation analysis is that: guided by the

expectations, actions, and constant support of *whānau* and community, and through her own choices and preferences, Puhi gradually developed proficiency in *whānau* practices, accumulated participant roles and *whanaungatanga* roles and responsibilities, and adopted *whānau* values.

As noted above, Puhi's *whānau* expected her to develop proficiency in te reo Māori, and to take on the role of speaker. Her acquisition of te reo Māori, which took place simultaneously and inter-relatedly with her socialisation towards other communicative practices, roles and responsibilities was presented as a fifth trajectory in Chapter 7, and is summarised in 8.2.3.

8.2.3 Grammatical structures of te reo Māori

The exposition of Puhi's trajectory towards proficiency in te reo Māori addresses my second major research question, and gives greater clarity to the overall picture of a child who was developing both culturally and linguistically as Māori.

In tracing Puhi's LA trajectory (see Chapter 7), I analysed the three overlapping and chronologically-ordered linguistic data sets that were Puhi's "first words" (age 10;0 to 20;2); "first combinations" (age 18;0 to 24;0); and "first sentences" (age 22;0 to 29;0). I used a linguistic lens to describe grammatical forms in, and communicative functions of, Puhi's linguistic production, and to identify universalities and particularities of her LA.

8.2.3.1 First words

By 10;2, Puhi had begun to produce utterances that were interpreted as adult-acceptable words. Between 10;2 and 17;1 twenty-five word types were captured. Of those, there were more nouns than verbs, which at first airing, appears to lend support to Gentner's (1982) noun-bias hypothesis. However, the highest percentage of word types fell into the class of "exclamations". This indicated that, by 17;1, Puhi was targeting and producing words primarily for their communicative function. She demonstrated an understanding of the use of exclamations to express affect such as surprise or delight, which is a basic

function of this class of words; and an understanding of the referential use of nouns. Bases that often act as verbs in te reo Māori were present in Puhi's "first words", but these were not always identifiable as verbs in the absence of tense-aspect-mood markers (TAMs: see 4.4.4.3.1).

Puhi's "first words" reflected formulaic language that she heard frequently. She targeted language chunks that performed specific communicative functions in her *whānau*, with farewells and exclamations being among the first. She reproduced the chunks both in imitation and spontaneously, using them within the recurrent communicative practices in which she heard them, and also in novel situations. Puhi's articulation of formulaic utterances began to increase in length from two to three moras, which suggests that she may have been analysing both phonological and syntactic structure by age 20;2.

8.2.3.2 First combinations: Phrasal acquisition

Increasing utterance length corresponded with the appearance of an important structure in Puhi's production: between 20;2 and 24;0, Puhi produced many combinations with the structure (PROTO +) B (+ MOD). The similarity between Puhi's structure and the (PART +) B (+ MOD) unit that is the basic structural unit of te reo Māori (Biggs, 1969) is apparent. It defines Puhi's structures as particular to te reo Māori and different from typical L1-English two-word phrases, which mostly consist of two content words and no function words (R. Brown, 1973). This is a notable finding in my study that leads to a new hypothesis regarding patterns of natural acquisition of te reo Māori. My new "Phrasal acquisition of te reo Māori" hypothesis is that:

the first structures acquired and produced by L1-Māori children have a form that is consistent with the basic phrase structure of te reo Māori. That form is (PART +) B (+MOD).

The phrasal-acquisition hypothesis holds true in cases where Puhi reproduced adult phrases holophrastically, and also in cases where she generated her own combinations.

The presence of function words (particles) distinguished her phrase structure as distinctly Māori, but it was not always clear which particles, and therefore which phrase types, Puhi was targeting. Puhi's proto-particles had a phonological (C)V(V) structure which was consistent with that of particles in te reo Māori. They differed, however, in that many alliterated with the base in her first combinations, e.g., *nā Nēni* 'Nēni's', which is an adult-acceptable phrase, but **pā Pāpā*, 'Pāpā's' which is not. The presence of these experimental and transitory proto-particles in my data supports Peters & Menn's (1993) notion that protomorphs act as phonological (and articulatory) toe-holds. Further, they indicate that Puhi was generating combinations with an experimental rule.

I also found evidence that Puhi was experimenting with adult grammatical rules, including over-generalising in a similar way to young children learning English and other languages (Fromkin et al., 2009). For example the structure **nā au* 'mine' occurred as a single token in my data at 28;0. Following the possessive prepositions *nā/nō/mā/mō*, an L1-Māori adult would use the clitic 1st person pronoun *-ku*, and not the independent 1st person pronoun *au*. There is anecdotal evidence that structures such as Puhi's **nā au* appear in the speech of L2-learners, and this is also true of Puhi's occasional untraditional use of A and O (see 7.5.4.2). Further study could explore whether these are transitory structures or whether they are indicative of diachronic change in te reo Māori on a broader scale.

I found that Puhi produced a small number of English-language combinations that were consistent with the L1-English content-word + content-word pattern described above. This is significant for three reasons: (a) it indicates Puhi's progression in both English and Māori despite the small amount of IDT English input she received; (b) it thus supports the notion that IDT is not a prerequisite for LA (see, for example, de León, 1998) but that children will also acquire a dominant language through its prevalence in their environments (Gathercole

and Thomas, 2009); and (c) it lends further support to the notion that children target the structures of their language(s).

8.2.3.3 First sentences

Between the ages of 22;0 and 29;0, Puhi used her utterances for all the basic communicative functions of language, and her proficiency in generating all the basic sentence forms, functions, and structures of te reo Māori, became increasingly apparent. The three basic sentence functions: declarative, interrogative, and imperative were present in my data. The functions of Puhi's sentences sometimes differed from their basic form, in accordance with adult norms of te reo Māori.

With the exception of numerical sentences, Puhi produced all the basic nominal and verbal sentences of te reo Māori. A few occurrences of more complex structures, such as negative and actor-emphatic sentences, indicated that these were also beginning to emerge. Additionally, Puhi produced passive sentences, both imperative and declarative passives, which may be due to their comparatively high frequency in Māori. This also lends support to the notion that the order of acquisition of structures is, to some extent, language-specific.

The word-order of Puhi's Māori utterances, and of her few English utterances, conformed to acceptable norms in each language. This revealed Puhi's growing proficiency with the underlying syntax of both her languages, and signalled that she had been analysing language forms, as well as functions, early in life.

By 29;0, Puhi was producing verbs from all the verb classes of te reo Māori. The greatest number of verbs appeared with no TAM, or with proto-TAMs. This signalled that she was acquiring some verbs before she combined them with TAMs, and the same was true of nouns and determiners, since she also produced noun phrases with no particles. These findings underline that she was analysing syntax by 29;0.

The phrasal-acquisition hypothesis presented in 8.2.3.2 is supported by my analysis of the first-sentences data set, which showed that Puhi continued to produce (PROTO +) B (+ MOD) phrases. However, by 29;0, Puhi had abandoned her alliterating proto-particles in favour of closer approximations of a range of adult particles. I found that she generated phrases and sentences with clearly-articulated, initial-position particles of all classes, i.e., *he* (determiner), *nā* and *kei* (prepositions); and *ka*, *kei te*, and *kua* (TAMs). Initial particles preceded mid-sentence particles in Puhi's language development, which suggests that their position may have made them more salient and audible. High-frequency mid-sentence nominal particles *te* and *ngā*, and lower-frequency TAMs *e...ana*, *me*, *ki te* and *kia* had emerged by 29;0. A few particles are absent from my data, possibly because of their low frequency of use in input.

The following section brings together the key findings of my three analyses in order to fully address the first research question.

8.2.4 Synthesising the findings

My two case-study children were each socialised by their *whānau* through and towards two languages: English, a global majority language; and te reo Māori, the endangered indigenous language of Aotearoa-NZ. Although both *whānau* expected their children to use te reo Māori, the LA trajectory for one child, Jessica-Lee, developed towards English, and for the other child, Puhi, towards te reo Māori. This shows that it was not sufficient that the children's parents desired that their children would speak te reo Māori, nor that one adult in the home spoke te reo Māori. Neither were the children's language choices random; rather, the choices were a result of different and multi-faceted socialisation experiences.

In Puhi's case, her parents' desire for their child to speak te reo Māori was combined with a shared expectation among the *whānau* (and significant people in the community) that she would become a L1-Māori speaker. Added to this

was the fact that *whānau* used te reo Māori with Puhi in multiple Māori cultural contexts at home and in the community at large (despite being challenged at times by people who neither spoke nor valued the language (see 5.3.2). Woven in was the important linguistic contribution of a few *whānau* members who understood the importance of modelling the use of te reo Māori with Puhi and with the entire *whānau* at all times. Puhi's consistent access to a large number of Māori-speaking *whānau* members of all ages provided her with opportunity to hear te reo Māori in almost all her interactions and motivated her to actively participate in te reo Māori within a range of roles and cultural practices. The *whānau* communicated their expectations to Puhi, and promoted her progression towards those cultural roles and practices. Puhi's socialisation trajectories showed that, while she exercised her own agency in appropriating the promoted roles, practices, and values, overall she chose expected *whānau* goals to become a proficient participant in *whanaungatanga* roles, in the promoted practices of *korero mai*, eye-talk and *kapa haka*, and within *whānau* values. It was the combination of all these things that supported Puhi to grow to see and understand her world through te reo Māori, and to choose to use the language, and its particular structures, which expressed and reflected that world. Puhi's opportunities to learn and use her Māori language and other cultural tools thus arose through the combined action (*mahitahi*) of the proverbial "village".

Although my findings come from a longitudinal case-study of just two children, they are consistent with, and are supported by, findings of the much larger *Te Kupenga* survey (Statistics New Zealand, 2014). In that study, results indicated strong relationships between Māori language ability and use, and the following factors: knowing tribal identity, participating in modern Māori cultural practices and identifying as Māori. In Puhi's case, these three factors were all, independently, goals and mechanisms in her socialisation. *Te Kupenga's* results also indicated less strong, but still significant relationships between

Māori language ability and use, and the following factors: large *whānau* size, having (and presumably speaking in Māori to) children at home, and having children who were participating in Māori education. These findings are again congruent with my results, since Puhi lived among a large *whānau* in which she was a child who was spoken to in Māori, and who participated in Kōhanga Reo.

Both sets of findings thus underline that Māori language socialisation occurs simultaneously and inter-relatedly with Māori cultural socialisation. This interconnectedness was a key component of the development of Puhi's trajectory towards being an L1-Māori speaker. The trajectories I traced have shown Puhi's socialisation through and into the many strands of culture and into language. From the smallest interactional details such as the glance of an eye, through words and syntax, to broad sociohistorical concepts such as *whanaungatanga*, each strand has contributed to Puhi's development as a speaker of te reo Māori.

8.3 Contributions of the study

My study makes a contribution to existing knowledge about language socialisation and language acquisition at three levels: local; international; and political.

At a local level, my study contributes to an understanding of te reo Māori socialisation by, for example:

- articulating and describing processes in MEB socialisation that involve strategies and mechanisms, language and other cultural practices, roles and values;
- describing non-verbal communicative practices particular to the cultural situation of Puhi's MEB *whānau*; and
- documenting cultural, social and linguistic aspects of socialisation that contributed to two children's choice of either English or Māori as a principal first productive language.

My study further contributes to an understanding of L1-Māori acquisition by: (i) documenting the order in which grammatical structures emerged in one child's

early language production; and (ii) proposing a language-specific phrasal acquisition pathway for children who are beginning to produce structures in te reo Māori.

The corpora created through my study have international, as well as local significance. Since te reo Māori is one of the 99% of languages that have been the topic of little or no research (de León, 2011), the creation of these corpora contributes to broadening the fields of LA and language socialisation.

By describing the role of culturally-particular practices in the language socialisation of a child learning a minority heritage language and a majority global language, my study also contributes depth to current scholarly understandings about language socialisation. It provides supporting evidence of the language “universal” that children target the structures of the language(s) they hear. In the case of te reo Māori, it has shown that function words, which carry an important communicative load, appeared early in the children’s production.

Additionally, my findings have important implications for the study of BFL socialisation and acquisition, as well as for the study of language revitalisation because they direct attention to the combination of many facets of socialisation that contribute to a child choosing to use a minority language. They provide supporting evidence that minority-language learning in bilingual homes is more likely to occur if more than one person in the home knows and uses the minority language (de Houwer, 2009), and if there is ample opportunity for a child to hear and use the minority language in the home and community (Kennedy & Romo, 2013). In addition, although the principal first productive language choices of the children in my study cannot be considered predictors of their language choice or use in later life, my findings have some significance for language revitalisation, since *Te Kupenga’s* results show evidence of a

relationship between L1-Māori language use and Māori language use in later life.

As listed above, these field-specific findings make a small contribution to each field, but taken together, they have the potential to make a much greater contribution to the political goals of Kaupapa Māori research. As stated in 4.1, in line with KM research goals, my major motivation behind this study was my desire to support the revitalisation of te reo Māori and the knowledge, values and practices it expresses.

My findings direct attention to the important contribution not only of the language environment to LA, but also of a rich, multi-faceted process of language and cultural socialisation through which a child becomes a proficient communicator within her *whānau*, and an L1-speaker of a heritage language, te reo Māori. My findings therefore reach beyond making a contribution to a deeper understanding of natural socialisation through and into, and acquisition of, te reo Māori, and point to political implications for the revitalisation of this, and other, endangered languages of the world.

8.4 Future directions

Insights into the details of the complex nature of Māori language socialisation and acquisition indicate considerable potential for this study to have widespread implications for and applications in revitalising te reo Māori, such as by informing the development of Māori language strategy and policy, Māori language curricula, and Māori-medium curricula. Further, it could inform and support *whānau* who begin with a desire for their children to grow up speaking te reo Māori, and who may face issues, challenges and decisions along the pathway towards achieving their goal.

My study has produced corpora from two MEB *whānau*, including one from an L1-Māori child. Such corpora open up numerous research opportunities, as the

well-mined CHILDES database has shown. Some possible foci for research that would extend the present study include:

- a) Syntactic, phonological and semantic analyses of the input corpus;
- b) Natural acquisition of contemporary Māori phonology;
- c) Word frequencies, and word-class frequencies in spoken language;
- d) Diachronic change in te reo Māori, for example, contemporary acquisition and production of:
 - a. passive constructions;
 - b. A/O morphs;
 - c. English words as new Māori loan items, including exclamations and onomatopoeia;
 - d. Prosodic patterns, including rhythm and intonation.

In addition, formulaic language has been shown in my study, as elsewhere (Bannard & Matthews, 2011; Burdelski & Cook, 2012; Ellis, 2001; Tomasello, 2000; see also 2.5.5.5.) to be significant in natural LA. This suggests that identifying salient, easily-acquired formulaic chunks that children learn early in life may be of use to L2-learners of te reo Māori, and for L1-Māori literacy learners. Future research could explore which formulaic chunks are acquired, their relevance to individual learners, and acquisition order.

Furthermore, exploration of one child's language socialisation has identified ways in which Puhī's MEB *whānau* interacted with infants. It has traced Puhī's trajectory from these early practices towards fuller participation in MEB communicative practices including: *waiata tautoko* and *kapa haka* performance, *mataara* 'alert watchfulness' by *whānau* members'; caring and hospitality, or *manaaki*; and informal and formal greeting practices. Further research could identify additional multi-modal communicative practices that are particular to MEB communities, which may help to round out the picture of L1-Māori acquisition and socialisation.

Finally, the movement towards revitalisation of te reo Māori has hitherto been able to draw only on research from corpora in other languages. Further research into socialisation through, and acquisition of, te reo Māori can throw

additional light on how children come to be competent MEB communicators. Deeper understanding of our language and its associated *tikanga* can contribute to its re-emergence as a strong, highly visible and audible component of this nation's linguistic environment. This single case-study has much to contribute to our understanding of te reo Māori socialisation, but it cannot tell the whole story. Further longitudinal case-studies must follow.

Glossary

The English definitions below are provided only to assist the reader and define the Māori words as they appear in this thesis. It is important to note that the Māori words may have a much wider range of meanings in other contexts.

Aotearoa	New Zealand
aroha	love, compassion
auē	exclamation of surprise, grief
awhi	embrace
āwhina	assist; help
ēnei, wēnei	these
hā	breath
haka	traditional performing arts
haka taparahi	warfare posturing
hapū	clan(s), sub-tribe(s)
harirū	shake hands
hohou rongo	(Lit. bind/join in peace) part of <i>pōhiri</i> ritual
hongī	press noses in salute
hui	meet, meeting
hūpē	discharge from the nose
ihi	excitement, power
iwi	tribe(s)
kaiako	teacher(s)
kaikōrero	orator(s)
kāo	no
kapa	row, line of people
kapa haka	team of performing artists, performing arts
karakia	pray, prayer
karanga	call, ritual of calling guests in <i>pōhiri</i>
karu	eye(s)
kaua	don't
kaumātua	elder(s)
kaupapa	base, topic

Kaupapa Māori	Māori philosophy
kia ora	a greeting (Lit. 'May you be well')
kihi	kiss
kite	see
kōhanga	nest(s)
Kōhanga Reo	Lit. Language Nest(s); learning centre for young children and their whānau with a focus on te reo Māori and tikanga Māori
kōkā	mother, aunt
kōrero	talk
kōrero mai	talk to me (Lit. 'speak hither')
koro	term of address to grandfather or male elder
koroua	grandfather or other elderly male relative
kui	term of address to grandmother or female elder
kuia	grandmother or other elderly female relative
kupu	word
mahi(a)	work, do, use, job(s)
mahitahi	cooperate, work or act together
māmā	mother, mum
mana	prestige, status, dignity
manaaki	to care for, show hospitality
manaakitanga	care, hospitality (nom)
manuhiri	visitor, guest
marae	traditional meeting place
mataara	alert eyes, to be alert, watchful
matahī	raise and lower or 'flash' the eyebrows
mihi	greet
mihi whakatau	semi-formal greeting
mokopuna	grandchild(ren); child(ren) of niece or nephew
mōteatea	traditional song(s)
mutu	be finished
nē, nēra	a question tag e.g., isn't it, aren't you
Nēni	grandmother or other elderly female relative (from Eng <i>nanny</i>)
pāpā	father, grandfather or male relative of father's or grandfather's generation
papa kāinga	ancestral home
pēpē/pēpi	baby/babies
pōhiri/pōwhiri	formal greeting ritual
pūkana	wide eyes, to widen the eyes (especially in kapa haka)
putē	wide eye with fixed gaze
reo	language(s)
roimata	tear(s)

taka	fall
takoha	give, contribute; gift, contribution
tautoko	support
te reo Māori me ōna tikanga	the Māori language and its associated practices
Te Whakatipuranga	Generation 2000
Rua Mano	
teina (pl tēina)	younger sister(s) of female cousin(s) of a female, or younger brother(s) or male cousin(s) of a male
Tēnā koe	a greeting (Lit. 'That [is] you')
tikanga	accepted practice(s) and value(s)
tikanga Māori	Māori practice(s), value(s)
titiro	look
tono	request
tuahine (pl. tuāhine)	sister(s) or female cousin(s) of a male
tuakana (pl. tuākana)	older sister(s) or female cousin(s) of a female, or older brother(s) or male cousin(s) of a male
tungāne	brother(s) or male cousin(s) of a female
tūpato	careful
waewae	foot/feet, leg(s)
waiata	song(s), to sing
wairua	spirit
wana	thrill, excitement
wehi	awe, dread
wēnei, ēnei	these
whaea (pl. whāea)	mother(s), aunt(s)
whaikōrero	speech, to orate
whakamana	show respect
whakapapa	genealogy
whakarongo	listen
whakataukī	proverb, adage
whakawhanaungatanga	establishing and maintaining relationships
whānau / whaanau	family (extended)
whanaungatanga	relationship(s)
Whare Wānanga	tertiary education centre (Lit. 'Learning House')
wharekai	dining hall(s)
whētero	protrude the tongue

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Dictionary references

Abbreviation	Reference
Te Aka	Moorfield, J.C. (2003-20013). <i>Te Aka English-Māori Māori-English Dictionary</i> . Retrieved from http://www.maoridictionary.co.nz/
Merriam-Webster	Merriam-Webster. (2015). <i>Merriam-Webster English Dictionary</i> . Retrieved from http://www.merriam-webster.com/
OED	<i>Oxford English Dictionary</i> (2 nd ed.). (1976). Oxford, England: Oxford University Press.
OED.com	Oxford dictionaries. <i>Language matters</i> . Retrieved from http://www.oxforddictionaries.com/
Williams	<i>A dictionary of the Maori language</i> . (1975). Wellington, New Zealand: Government Print.

Appendix 1: Consent forms

A. Information for parents of Puhi Ihaia

Tēnā rā kōrua e whai whakaaro mai ana ki tēnei o ngā mahi rangahau i tō tātou reo rangatira

As study towards a PhD, I am researching what happens as Puhi Ihaia learns te reo Māori as one of two case study subjects growing up in a bilingual English-Māori, bicultural environment.

My research questions are:

- How does language socialisation occur for two children growing up in a bilingual English-Māori, bicultural environment?
- In what order do grammatical structures of te reo Māori emerge as these two children acquire English and Māori as first language speakers?

What will the study consist of?

1. Taking video recordings of Puhi Ihaia at home and in other places for 30 minutes each week from the start of the study until she is 2 years, 6 months of age.
2. Because of this, other people may also be recorded talking or playing with Puhi Ihaia. This will be included in the study as it will help to show what she is learning and what language she is hearing.
3. Mātua/whānau of Puhi Ihaia may be asked what they think she or other tamariki are saying, or trying to say, in the recordings.

I will take all care to be sensitive when I make video-recordings, especially of children. If participants give any indication that they are uncomfortable about my presence or videoing, recording may be stopped or delayed until a later time or date.

I will keep you informed about the study on a regular basis. If you have any questions or concerns about this study, please feel free to contact me or my supervisors. Contact details are:

Maraea Hunia	xxx	04 xxx xxx
Carmen Dalli	Carmen.Dalli@vuw.ac.nz	04 463 5168
Winifred Bauer	xxx	04 xxx xxx

1.1 Agreement

Your signatures on this form show that you understand what the study is about and agree for your child to participate. You may withdraw Puhi Ihaia from the study at any time before the analysis of data without providing reasons.

Kia ora rā

Maraea Hunia

This research has been assessed and approved by:

Victoria University Faculty of Education Ethics Committee

1.2. Consent (please tick boxes as you read and agree to each point)

- ☐ We have been told about the research project and understand what it is about, and have been given the opportunity to ask any questions.
- ☐ We agree for Maraea to video our child/ren, named below, for the purposes of this study
- ☐ We understand that a copy of all video files of our child compiled for the study will be given to each of us through the course of the study and/or at the end of the study, and that if we withdraw from the study, a copy of any footage of our child will be given to each of us.
- ☐ We understand that we may withdraw specific material from this study at any time before the analysis of data without providing reasons.
- ☐ We understand that, although Maraea will endeavour to keep our child's and our own identity confidential, for example by using pseudonyms, total confidentiality may be difficult because of the small and intimate nature of te ao Māori.
- ☐ We understand that information or opinions we provide will be reported only in a non-attributable form unless we specifically consent to those opinions being attributed to either of us.
- ☐ We understand that a copy of all video files of Puhi Ihaia compiled for the study will be retained by Maraea as a family record.
- ☐ We understand that all data will only be used for the purposes of a PhD project and for academic publications from the PhD, and that any other use (e.g., for teaching purposes, or for future research) will require our consent.
- ☐ We understand that the PhD thesis may include photos of our child, and that the thesis may be available online, but that we will be consulted about the choice of photos of our child before publication.
- ☐ We understand that Maraea may ask us to view video recordings to provide clarity or further information including, for example, what we think Puhi Ihaia is doing or saying in a recording.
- ☐ We understand that by signing this form we consent to the use of data that has been gathered before today as well as that gathered from this point on.

Ngā mātua o [case-study child] _____ Date _____

Māmā _____ Signature _____

Pāpā _____ Signature _____

B. Information for parents of Jessica-Lee

Tēnā rā kōrua e whai whakaaro mai ana ki tēnei o ngā mahi rangahau i tō tātou reo rangatira

As study towards a PhD, I am researching what happens as Jessica-Lee learns te reo Māori as one of two case study subjects growing up in a bilingual English-Māori, bicultural environment.

My research questions are:

- How does language socialisation occur for two children growing up in a bilingual English-Māori, bicultural environment?
- In what order do grammatical structures of te reo Māori emerge as these two children acquire English and Māori as first language speakers?

What will the study consist of?

1. Capturing Jessica-Lee's language and image in everyday life using digital audio visual (video) recording equipment for approximately 30 mins each fortnight from now until March 2013.
2. Because of this, other people may also be recorded talking or playing with Jessica-Lee. This will be included in the study as it will help to show what she is learning and what language she is hearing.
3. Mātua/whānau of Jessica-Lee may be asked what they think she or other tamariki are saying, or trying to say, in the recordings.

I will take all care to be sensitive when I make video-recordings, especially of children. If participants give any indication that they are uncomfortable about my presence or videoing, recording will be stopped or delayed until a later time or date.

I will keep you informed about the study on a regular basis. If you have any questions or concerns about this study, please feel free to contact me or my supervisors. Contact details are:

Maraea Hunia	xxx	04 xxx xxx
Carmen Dalli	Carmen.Dalli@vuw.ac.nz	04 463 5168
Winifred Bauer	xxx	04 xxx xxx

1.1 Agreement

Your signatures on this form show that you understand what the study is about and agree for your child to participate. You may withdraw Jessica-Lee from the study at any time before the analysis of data without providing reasons.

Kia ora rā
Maraea Hunia

This research has been assessed and approved by:
Victoria University Faculty of Education Ethics Committee

2. Consent (please tick boxes as you read and agree to each point)

- ☐ We have been given adequate information relating to the nature and objectives of this research project, we understand that information and have been given the opportunity to ask for further clarification or explanations.
- ☐ We agree for Maraea to video our child, named below, for the purposes of this study.
- ☐ We understand that a copy of all video files of our child compiled for the study will be given to us through the course of the study and/or at the end of the study, and that if we withdraw from the study, any footage of our child will be given to us.
- ☐ We understand that we may withdraw specific material from this study at any time before the analysis of data without providing reasons.
- ☐ We understand that, although Maraea will endeavour to keep our child's and our own identity confidential, for example by using pseudonyms, total confidentiality may be difficult because of the small and intimate nature of te ao Māori.
- ☐ We understand that information or opinions we provide will be reported only in a non-attributable form unless we specifically consent to those opinions being attributed to either of us.
- ☐ We understand that all data will only be used for the purposes of a PhD project and for academic publications from the PhD, and that any other use (e.g., for teaching purposes, or for future research) will require our consent.
- ☐ We understand that the PhD thesis may include photos of our children, and that the thesis may be available online but that we will be consulted about the choice of photos of our child before publication
- ☐ We understand that Maraea may ask us to view video recordings to provide clarity or further information including, for example, what we think CHILD 3 is doing or saying in a recording.
- ☐ We understand that by signing this form we consent to the use of recordings that have been made before today as well as those which are made from this point on.

Ngā mātua o Jessica-Lee

Date_____

Māmā _____

Signature_____

Pāpā _____

Signature_____

C. Information for general participants [other than case study subjects]

Tēnā rā koutou e whai whakaaro mai ana ki tēnei o ngā mahi rangahau i tō tātou reo rangatira

As study towards a PhD, I am researching what happens as two young children learn te reo Māori as they grow up in a bilingual English-Māori, bicultural environment.

My research questions are:

- How does language socialisation occur for two children growing up in a bilingual English-Māori, bicultural environment?
- In what order do grammatical structures of te reo Māori emerge as these two children acquire English and Māori as first language speakers?

What will the study consist of?

1. I will be taking video recordings of the two children for about 30 mins each week over a period of two years in their homes and in other places.
2. Because of this, other people may also be recorded talking or playing with the children. I would like to include these recordings of other people as data as it will help to show what socialisation is occurring and what language the two children are hearing.
3. I may also ask mātua/whānau of children who are present at the time of recording what they think their tamariki are saying, or what is happening in the recordings.

You (and/or members of your family) may be present when one or both of the two case study subjects are/were being recorded. Signing the consent form below will permit me to use the recordings as data in this study. I will take all care to be sensitive when I make video-recordings, especially of children. If participants give any indication that they are uncomfortable about my presence or videoing, recording will be stopped or delayed until a later time or date.

If you have any questions or concerns about this study, please feel free to contact me or my supervisors. Contact details are:

Maraea Hunia	xxx	04 xxx xxx
Carmen Dalli	Carmen.Dalli@vuw.ac.nz	04 463 5168
Winifred Bauer	xxx	04 xxx xxx

1.1 Agreement

Your signatures on this form show that you understand what the study is about and agree for your child to participate. You may withdraw Jessica-Lee from the study at any time before the analysis of data without providing reasons.

Kia ora rā
Maraea Hunia

This research has been assessed and approved by:
Victoria University Faculty of Education Ethics Committee

2. Consent (please tick boxes as you read and agree to each point)

- ☐ I/we have been told about the research project and understand what it is about, and have been given the opportunity to ask any questions.
- ☐ I/we agree for Maraea to use video of our child/ren named below, and/or of me/us, for the purposes of this study.
- ☐ I/we understand that I/we may withdraw specific material from this study at any time before the analysis of data without providing reasons.
- ☐ I/we understand that I/we will be given an opportunity to view any video files that include me/us or our children before the analysis of data.
- ☐ I/we understand that information or opinions provided will be reported only in a non-attributable form unless specific consent is given.
- ☐ I/we also understand that because of the nature of te ao Māori, people and places in the research may be identifiable.
- ☐ I/we understand that recordings of Puhi Ihaia which include my/our child/ren will be kept by Maraea as a family record, and that a copy will also be given to her parents to keep as a family record.
- ☐ I/we understand that all data will only be used for the purposes of a PhD project and for academic publications from the PhD, and that any other use (e.g., for teaching purposes, or for future research) will require my/our consent.
- ☐ I/we understand that consent covers recordings that have been made before today as well as those which are made from this point on.

Participants recorded with case study subjects: **Date** _____

Participants' Names	Signatures (parents please sign for children under 16)	Preferred pseudonym for use in Maraea's thesis

D. Information for parents at _(name)_ Kōhanga Reo

Tēnā rā koutou e whai whakaaro mai ana ki tēnei o ngā mahi rangahau i tō tātou reo rangatira

As study towards a PhD, I am researching what happens as two young children learn te reo Māori as they grow up in a bilingual English-Māori, bicultural environment.

My research questions are:

- How does language socialisation occur for two children growing up in a bilingual English-Māori, bicultural environment?
- In what order do grammatical structures of te reo Māori emerge as these two children acquire English and Māori as first language speakers?

As part of the study I will be video-recording Puhi for approximately half an hour at Kōhanga Reo on ____ (date).

If you have any questions about this study, please contact me or my supervisors.

Maraea Hunia	xxx	04 xxx xxx
Carmen Dalli	Carmen.Dalli@vuw.ac.nz	04 463 5168
Winifred Bauer	xxx	04 xxx xxx

1.1 Agreement

Your signatures on this form show that you understand what the study is about and agree for your child to participate. You may withdraw Jessica-Lee from the study at any time before the analysis of data without providing reasons.

Kia ora rā
Maraea Hunia

This research has been assessed and approved by:
Victoria University Faculty of Education Ethics Committee

2. Consent (please tick boxes as you read and agree to each point)

- ☐ I/we have been told about the research project and understand what it is about, and have been given the opportunity to ask any questions.

- ☐ I/we agree for Maraea to use video of our child/ren named below, and/or of me/us, for the purposes of this study.
 - ☐ I/we may withdraw from this study at any time before the analysis of data without providing reasons.
 - ☐ I/we will be given an opportunity to view any video files that include me/us or our children before the analysis of data.
 - ☐ I/we want our children to be referred to in Maraea's write up by the name given below
 - ☐ I/we understand that because of the nature of te ao Māori, people and places in the research may be identifiable.
 - ☐ I/we understand that one copy of the video will be given to the Kōhanga, and that copies will also be kept by Maraea and by Puhi's parents as a family record.
 - ☐ I/we understand that all data will only be used for the purposes of a PhD project and for academic publications from the PhD, and that any other use (e.g., for teaching purposes, or for future research) will require my/our consent.
-

Participants recorded with case study subjects: Date_____

Participants' Names	Signatures (parents please sign for children)

E. Information for parents of child/ren in image(s)

Tēnā rā koutou e whai whakaaro mai ana ki tēnei o ngā mahi rangahau i tō tātou reo rangatira

As study towards a PhD, I am researching what happens as two young children learn te reo Māori as they grow up in a bilingual English-Māori, bicultural environment.

My research questions are:

- How does language socialisation occur for two children growing up in a bilingual English-Māori, bicultural environment?
- In what order do grammatical structures of te reo Māori emerge as these two children acquire English and Māori as first language speakers?

You have been given this information because Whaea Yvonne has given me a photo of your child/ren performing with the kapa haka o Te Korowai Whakamana. This is because one of the children in my study has watched the TKW kapa haka perform and this forms part of her learning about waiata Māori, about aspects of kapa haka, and about te reo Māori.

Signing the consent form below (or giving agreement by email, or verbally) will permit me to use the photo below in my PhD thesis to help illustrate what children see in their community that contributes to their learning.

If you have any questions or concerns about this study, please feel free to contact me or my supervisors. Contact details are:

Maraea Hunia	huniama@vuw.ac.nz	04 xxx xxx
Carmen Dalli	Carmen.Dalli@vuw.ac.nz	04 463 5168
Winifred Bauer	Winifred.Bauer@vuw.ac.nz	04 463 5469

1.1 Agreement

Your signatures on this form show that you understand what the study is about and agree for your child to participate. You may withdraw Jessica-Lee from the study at any time before the analysis of data without providing reasons.

Kia ora rā
Maraea Hunia

This research has been assessed and approved by:
Victoria University Faculty of Education Ethics Committee

2. Consent (please tick boxes as you read and agree to each point)

- ☐ I/we have been given information about Maraea's research project and understand what it is about, and have been given the opportunity to ask any questions.
- ☐ I/we agree for Maraea to use the image below of our child/ren named below, and/or of me/us, for the purposes of this study.
- ☐ I/we also understand that because of the nature of te ao Māori, people and places in the research may be identifiable.
- ☐ I/we understand that this photograph will only be used for the purposes of a PhD project and for academic publications from the PhD, and that any other use (e.g., for teaching purposes, or for future research) will require my/our consent.

Date_____

Children's Names	Signatures (parents please sign for children under 16)

Do you want your child's first name to appear in the thesis? YES / NO

F. Written consent from Puhi's parents: extended data collection.

Maraea [REDACTED]

15/12/2015 09:00

Kia ora Te Tahi. The consent form you signed allowed me to video Puhi for my PhD study up to age 30 months. Do you give your formal permission for the videos I took of Puhi between age 30 months to 40 months? Please give a clear answer as I am going to take a screen shot of this request and your reply for the Vic Uni ethics committee. xx

Tuesday

Te Tahi [REDACTED]

15/12/2015 13:45

I Te Tahi [REDACTED] give my formal permission for you to use the videos you took of Puhi between the age 30 months to 40 months.

Maraea Maraea

09:00

Kia ora Puawai. The consent form you signed allowed me to video Puhi for my PhD study up to age 30 months. Do you give your formal permission for the videos I took of Puhi between age 30 months to 40 months? Please give a clear answer as I am going to take a screen shot of this request and your reply for the Vic Uni ethics committee. xx

Te Puawaitanga [REDACTED]

15/12/2015 09:10

Ae ka whakae au.

Te Puawaitanga [REDACTED]

Appendix 2: Data-collection sheet

File no:

Name of child:

Age: months;weeks

Others Present: MH (camera)

Purpose of recording now: [e.g., systematic data collection] Purpose fulfilled? Yes/ No

Equipment used:

Context:

Story:

Useful for:

Date: 2012-11-04 Start time: 4.43pm Video-clip ID:

Time (as on video)	Others interacting & Child focus	Others present	Context	Role of child Researcher influence	Interlocutor language	Other
0:00						
1:00						
2:00						
3:00						
4:00						
5:00						
etc to 30:00						

End time: Clip duration:

Reason if recording ended prematurely:

Researcher reflections:

Comments/Reflections from mātua/whānau:

Other: