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**INFANT PLACES, SPACES AND OBJECTS:
EXPLORING THE PHYSICAL IN LEARNING
ENVIRONMENTS FOR INFANTS UNDER
TWO**

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Dublin Institute of Technology,

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School of Social Science and Law

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Abstract

While the relationship between play and development is well documented, there is less known about the influence of the physical environment in that process. The purpose of this qualitative study is to describe play interactions of infants under two with the home physical environment. The aim is to explore and identify ways in which infants develop and learn through engaging with objects and spaces of everyday life in the home.

A qualitative ethnographic approach was employed to gather data on five infants, two new-borns and three one-year olds, and their families over twelve months. Data was generated through video, interview and observations of the infants engaging in play with typical objects, in their natural home environments. Families were visited monthly to capture change in infant-environment transactions over time. Analysis focused on infant-environment transactions during play events in typical daily routines, guided by a grounded theory analytical approach.

The study identifies that infant play is multidimensional, and combines and includes play not just with objects and people, but with space. Findings relate to the following aspects: play in relation to the physical environment of the home as observed through engaging with body space, near space, middle space and home space; the nature of change in play over time as it relates to affordances of the physical environment, and parental reasoning in families that shapes play interactions. Emerging findings relate to considering play as transactional processes that have an influence on development, and argues for an amended perspective on the home as a ‘just-right’ environment.

This study describes how five Irish families support play in home environments and informs an understanding of influences on play development from a physical-sociocultural perspective. Suggestions are made in relation to how this study can inform the development of home-based play environments as a result.

Declaration:

I certify that this thesis which I now submit for examination for the award of PhD, is entirely my own work and has not been taken from the work of others save and to the extent that such work has been cited and acknowledged within the text of my work.

This thesis was prepared according to the regulations for postgraduate study by research of the Dublin Institute of Technology and has not been submitted in whole or part for an award in any other Institute or University.

The work reported on in this thesis conforms to the principles and requirements of the Institutes guidelines for ethics in research.

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Signature _____

Date _____

Helen Lynch

November 2011

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CHAPTER ONE: INTRODUCING THE STUDY

This thesis is about the exploration of infants play in the home, with a particular focus on the physical attributes of the environment. The scope of the study is shaped by the five families that participated in it and shared the physical and social contexts of their lives over a twelve month period from September 2009 to October 2010. However, it also is driven by a personal concern about our lack of knowledge about Irish home culture and how infants in contemporary Ireland are experiencing life, in regards to early play and learning. From experiences of working with children who have special needs for many years, I have been drawn to explore more the realities of typical life for children in order to inform our work as practitioners. Furthermore, as an occupational scientist, I am driven to understand play occupation more from an occupational perspective, which emphasises the influences of the environment on development. Although there are debates about how occupational science informs or is linked to practice, this study of infants' home play and the physical environment is relevant to any practitioner who works with infants in Ireland and who strives to ensure his or her practice has ecological validity and is congruent with family life. So this thesis is about a personal and professional journey of exploration to understand early play in home settings.

This introductory chapter introduces the study in relation to the research topic, the research in context and then the research plan. It begins by giving an overview of the rationale that underpins the study including why it is an area of concern that needs to be researched. This includes an introduction to the study purpose, aims and objectives. The topic of study is introduced in relation then to places, spaces and objects as a preliminary overview. It is then set in context, by locating it within a national

perspective to consider its potential contribution to the research and practice worlds in infants and early childhood. Finally, the thesis plan is presented as a guide for the reader for navigating through the text.

INTRODUCING THE RESEARCH TOPIC: The Importance of the study:

'As the environment to be acted upon changes the developing person him or herself changes reorganising his or her actions system' (Reed, 1993, p. 49)

Children learn by both being and doing in the environment. Hence, theorists and researchers contend that learning and development is a result of the interaction between the child and the environment (Wohlwill & Heft, 1987). For the most part, this interaction is observed in infants in the form of play, which can be defined as *'freely chosen, personally directed, intrinsically motivated behaviour that actively engages the child'* (National Children's Office, 2004, p. 11). Indeed, this study highlights that infants begin doing in the world by being playful, and out of this play behaviour comes learning and adaptation. Through observing infants in their natural home environment, this study has been able to explore and describe infant play processes over time, resulting in a view of early play transactions that can inform practice. Infants are seen to play in every context and through play eventually are socialised into other occupations such as meal-time routines and bathing.

Contemporary researchers of child development argue for a dynamic or contextual framework to be employed to explore the true complexity of factors involved in the learning process (Bronfenbrenner & Morris, 1998; Rogoff, 2003). However, as yet, we are in the early stages of understanding the role of the physical environment in these contexts. Within research, the emphasis to date has been on key aspects of sociocultural

environments and interactions with little attention to the physical (Munier, Teeters Myers, & Pierce, 2008). This demonstrates that sociocultural studies have been the dominant trend of recent decades, which has partly been influenced by an assumption that the physical environment influences development only through mediation by the social environment (Wachs, 1985).

Nonetheless research has identified a specific relationship between aspects of the physical environment as they influence development (Adolf, Karasik, & Tamis-LeMonda, 2010; Karasik, Tamis-LeMonda, & Adolf, 2011; Wachs & Gruen, 1982; Wohlwill & Heft, 1987). For example for infants, the physical environment involves interactions with spaces and objects and this is the basis for perceptual learning through visual, oral, or manual action or through mobility (Adolf, Eppler, Marin, Weise, & Wechsler-Clearfield, 2000; Rochat, 1987). Evidence exists to show that object play is inseparable from postural development, which in turn relates to how space is used (Rochat & Goubet, 1995). Such studies highlight the transactive nature of the infant-environment relationship: that it includes action, space and object use which in turn is reliant on the infant's abilities but also in turn shapes the infant's abilities. Therefore, it is acknowledged that the physical environment has a key contribution to make and that the physical environment is a key factor in learning outcomes in children (Elardo, Bradley, & Caldwell, 1975; Wachs, 1978, 1979).

However, due to the paucity of research, play has not been mapped out in relation to the home physical environment to the same extent as the social environment, and play in context has been given little attention by researchers to date (Garner & Bergen, 2006). There is a need for research to address this gap: to explore the development of a child's learning within the physical contextual environment as a transactive process. Consequently, this study brings another dimension to studies of infant play in the home.

While it acknowledges the importance of the social environment, it foregrounds the physical environment in order to identify its role in infant play and learning.

As occupational scientists, we are asked to consider what research is important to occupational science (Hocking, 2009; D. Pierce, 2009). Within this field, there is an acknowledgement that individual experiences of occupation are a key concern, with due regard to the physical as well as social aspect of activity. This study demonstrates one researcher's approach to address this. Firstly, through studying infants from birth and by taking a longitudinal approach to the study, play occupations can be explored from a developmental perspective. This has been an under-explored area in occupational science to date. Secondly, through using an affordance approach to explore the environment, occupational scientists can view the physical environment from a functional perspective and as being agentic, therefore facilitating communication about how the environment can influence and shape change.

This study of physical environments focuses on a study of play in home settings, in order to explore naturally occurring, contextual play occupations. It is guided by recommendations from ecological research to take a transactional approach, which places equal value on the environment in the person-environment interaction (Altman & Rogoff, 1987) but in particular, on the physical environment as an underexplored aspect of this relationship (Wachs, 1985).

INITIAL BROAD RESEARCH AIMS AND QUESTIONS

The purpose of this study is to identify and describe the interactions of children under two with the home physical environment. In doing so, it is hoped that we can increase our understanding of the nature of environmental contexts in relation to children's learning and development. The rationale for doing this study is that children's early play development, when considered from a contextual framework (i.e. using the home as context), is a relatively unexplored aspect of early childhood. There are two broad aims:

1. To begin to address the lack of research that exists in early play development in the context of the home environments of infants
2. To explore and identify ways in which infants develop and learn to negotiate objects and spaces of everyday life in the home

At the outset, initial questions were identified based on these general aims:

1) What is the nature of infant interactions with the physical home environment over time?

This question relates to the need to explore and describe how infants interact with their physical environments over time. This needs to consider the elements within that interaction, including infant characteristics and motivation to play. The developmental aspect relates to describing the nature of change in the infant and the environment, through exploring the interactions with places, spaces and objects over a 12 month period.

2) What are the attributes and affordances of the physical environments that shape this developmental progression?

This question refers to the exploration of the physical environment to inform our understanding of the infant's development over the year through his or her interactions with the places, spaces and objects. It requires attention to the

description of the characteristics of the home environment, and the source of appeal for the infant. Aspects of space use and patterns or routines within the family are part of that exploration.

3) What are the implications for practitioners who work with infants in typical home environments?

The rationale for this study comes from the gap in our knowledge about Irish home environments for infants under two. This knowledge is an important foundation to the development of supportive frameworks to guide child-minding provision at a more formal level and to guide developments in early intervention work for children with special needs, within the health and education sector.

Specific research questions then evolved during the study and will be explored more in Chapter Six (Table 1:1).

Table 1:1: Research questions that evolved and were informed by the study

- | |
|---|
| <ol style="list-style-type: none">1. What is the nature of the home environment?2. What is the nature of play in the home environment?3. What is the developmental sequence of the child in relation to transactions with the physical environment of the home?4. What are the affordances of the physical environments that influence this developmental progression?5. What are the characteristics of the transactional process between child and environment? |
|---|

The physical environment: places, spaces and objects

Frameworks that guide this study are discussed in Chapter Two, but it is useful before proceeding to set the scene by introducing key aspects of the physical environment that are explored in this study: places, spaces and objects.

This study focuses on the physical environment which relates to '*the natural and built physical environment (nonhuman) and the objects and materials within them*' (American Occupational Therapy Association, 2008, p. 645). The natural environment consists of the soil, rock, terrain, water, air and so on. The built environment refers to structures such as houses, schools, shops, playgrounds, streets that have been designed by people for societal use (Law, 1991). Both natural and built environments form the microenvironments of infants in their daily lives and contribute to the microsystem for development and learning.

Elements of the physical environment can be considered in relation to specific characteristics (structure or form, for example physical or sensory nature), meaning, and occupational affordances (of how it is used), but from an ecological perspective '*no element can be understood in isolation*' (Hamilton, 2004, p. 181). However, it is important for setting the scene to separate out each element so their relationship can be understood. In this study the physical environment is viewed as consisting of core elements of places, spaces and objects. Places and spaces are terms often used interchangeably due to the philosophical perspectives across different disciplines. For example, in occupational science place is often conceptualised in a similar fashion to the conceptualisation of space in social geography. The following section explains the concepts of place and space that underpin this study.

Places:

Places are more than a location in space. Places are where individuals are born, live and grow, and engage in the world: the lifespaces where an individual interacts but that have meaning only through the interactions that occur there (Thelen & Smith, 1998). Through multiple interactions, places become part of our lives with historical meaning for each individual that evolve through personal experiences accumulating over time (Rowles, 2009)¹. Furthermore, place can be viewed as a socially constructed concept, given that it has multiple meanings (Hamilton, 2004). Places are ‘*containers of experiences*’ (Hasselkus, 2002, p. 26) of interrelated interactions. Hence, our lives evolve within and through the places where we live rather than being separate from them (Rowles, 2009).

So, places are more than just physical entities; they have social and cultural meaning and emotional dimensions- they provide safety and security, and influence activities that occur within them (Hamilton, 2004). People have relationships with their environments that develop through interactions that evolve as histories of interactions are accumulated (Kuczynski, Harach, & Bernardini, 1999). Children’s place identity evolves in this relationship, which is shaped also by family, community, and cultural contexts (Derr, 2002). In Derr’s study of sense of place of New Mexican children, relationships with place related to the activity that took place there, which supported togetherness and mental well-being. Sharing experiences was a significant factor. Furthermore, the relevance of past experiences such as ancestral ties and family story telling helped shape the child’s meaning of place (Derr, 2002).

¹ Researchers have acknowledged that place can include physical setting, activities and meaning of place (Relph, 1976) or of locale (settings), location (geographical area encompassing the settings), and sense of place (Agnew, 1987).

Aside from this phenomenological view, places are also experienced at a biological or perceptual level: *'people experience place through their senses because of properties such as temperature, lighting, colour and noise'* (Hamilton, 2004, p. 176). Places are often remembered by their signature smell or atmosphere, which is formed by these multiple characteristics. For infants who experience life through a sensory-motor lens in the early years, this environmental aspect is one of significance.

There is a universality to the description of place- we can describe places according to their dimensions such as design (e.g. a home that is a bungalow versus a flat), or purpose (shop versus child-care setting). Some places are named for what occupations take place there, for example, playroom or leisure centre. Others are named based on sociocultural or political origin (e.g. village, city, county). Spivak in his research identified 13 types of places that he termed archetypal places (Spivak, 1973). These were identified based on his idea of essential places that sustain human existence. His taxonomy was derived from a functional analysis of place use, listing places based on activities that need to be carried out in daily life, including places for: shelter, sleep, mating, grooming, feeding, excreting, storing, territory, play, route, meet, complete, and work (Spivak, 1973). This taxonomy is viewed as one way to consider place from a universal perspective (Hamilton, 2004).

Although built environments are designed to meet such functional needs, certain physical environments shape occupations despite how they were intended to be used. For example, in researching children's play preferences, children choose derelict sites over purpose-built play areas, based on affordances for socialisation (Thomson & Philo, 2004). In another study children avoided certain playgrounds due to their unsuitability

in preference for quieter ones (Min & Lee, 2006).² In both examples, play activities led to a choice of a play environment- one of which was purpose built (the quiet playground) and one that was not purpose built (the derelict site) but both environments met the specific needs of the children for play. Even purpose built environments do not always support the functional needs for which they were intended.

While a universal perspective is useful, environments also present with individual characteristics from a cultural perspective, based on custom and practice. Bronfenbrenner describes a blueprint that exist within a culture of how places function, and that this differs between cultures (Bronfenbrenner, 1979). For example, a post-office in one country has the same characteristics and organisational structure physically as other post-offices within that country but compared to one in another country, it will be different. In Ireland for example, it is not standard practice for primary schools to be built with structured playgrounds or canteens (as children do not have school dinners which they do in the UK). So culturally, the built environment in Ireland has its own blueprint that differs to even that of its closest neighbour, the UK.³

² This reflects the concept of environmental press which is described as the social and physical characteristics of the environments that elicit certain activities while discouraging others (Garbarino, 1989; Wood, Towers, & Malchow, 2000).

³ Note: This is an example of how environments are influenced by macrosystem processes that do not support provision of meals or play structures in schools at a policy level with subsequent impact on the built community environments.

Spaces:

Space is similar to place in that it can be considered to relate to geographical location (Agnew, 1987) or function (Rowles, 2009). However, space can also refer to an area, a gap between places, or as having room to move or do an activity. In child development, spaces have been frequently researched from a cognitive perspective, with an emphasis on how the child develops mental images of places and concepts of space (Philo, 2000). This ability involves being able to code and store environmental spatial information in order to recall it and use it to engage with the physical environment (Primeau, 1996). Research has shown that for toddlers, cognitive mapping includes successful movement in familiar spaces and being able to locate preferred objects for play (Primeau, 1996).

In contrast, sociologists and social geographers have contributed to this work on children and space from a broader social perspective within geographical contexts (Philo, 2000). Using this sociological perspective, researchers have identified that children's views on the places and spaces where they live are different to those of adults (Thomson & Philo, 2004). This difference is frequently linked to the functional meaning of spaces (Heft, 1988). Spaces therefore take on an importance when considered from a child's viewpoint as to how they are used and the meaning for the child (Kytta, 2003).

While this sociological perspective is valuable in relation to older children, it has limitations in relation to the current study. How do we explore infants' space-use and their functional meaning? Henderson recommends we consider spatial aspects from a functional-based classification system that *'needs to include the most proximal environment, the chair on which you are sitting, the utensils on the table in front of you'* (Henderson, 1996, p. 421).

Henderson researched children's space use and devised a spatial typology that includes:

1. Peripersonal space- within range of grasp (grasping space)
2. Near space- space through which person moves
3. Far space- seen in distance
4. Cognitive space- mental images of places and things in space

(Henderson, cited in Munier, Teeters-Myers & D. Pierce, 2008, p. 235).

Henderson's spatial typology informed this current research study and provided a starting point for considering the relationship between infant and the physical environment. By employing this typology, infants' choices in interactions with objects and spaces can be identified and explored, as a way of understanding functional meaning for the infant from both a psychological and sociocultural perspective.

Objects:

Objects are '*the materials of everyday life*' that can be seen or touched (Hocking, 1994, p. 29). In themselves, objects have characteristics such as weight, shape, size, texture, states of matter (e.g. liquid or solid), colour, and taste, smell, with moving or static parts in some cases. In other words there are physical and sensory characteristics to objects. From an affordance perspective, these properties are not just characteristics of the object, but properties related to affordances for potential use of the object which depends on how an individual perceives it (Reed, 1993).

The physical environment for children is different to that of adults in relation to the characteristics of the objects within them, such as toys or materials for play (D. Pierce, 2000). Play is different in each generation and as a result there is a need to consider objects in the broader context of material culture rather than just looking at toys as an important source for researching and understanding infant play (D. Pierce, Munier, & Teeters- Myers, 2009). Consequently, objects within the infant's world in this study are

considered from a material culture perspective, which refers to tools, toys, books, house objects, furniture, and technology.

Although objects, spaces and places are identified as playing a vital role in transactional processes, the physical environment in general has been less studied and is a relatively unknown factor in relation to its impact on occupational development of children. The physical environment has traditionally been viewed as the stage or setting in which social transactions occur rather than being an equal participant in the transactions (Wohlwill & Heft, 1987). As a result of this diminished view of the physical environment, it is not surprising that the extent to which solitary play with objects (such as playing with toys) influences cognitive development of children is relatively unknown (Bronfenbrenner & Morris, 1998).

Summary

In summary, this study focuses on the physical environment in relation to objects (material culture of childhood) and also on the natural and built environment of the home, as part of the physical setting wherein an infant interacts. Place refers to the varied physical settings where the infants live and play, including homes, child-care and play settings. This includes consideration of the blueprint of Irish homes, and the meaning and sociocultural contexts of homes in communities. Space in contrast refers to the smaller micro environments within or between these places. However, the overall framework for exploring the home is an ecological one⁴ rather than being primarily a psychological or sociological perspective (Gump, 1989). This study is underpinned by an ecological approach that views settings as entities rather than simply being a context for researching children's lives.

⁴ Ecological frameworks for contextual research are defined and described in more detail Chapter Two, to clarify this position.

INTRODUCING THE RESEARCH CONTEXT:

In 2007 the Centre for Early Childhood Care and Education (CECDE), Ireland issued a national call for research to be conducted on creating indoor and outdoor learning environments of children in early childhood. Learning environments had been highlighted as priority for researching infants' lives from the National Children's Strategy and from the knowledge that environments have been a relatively under-explored aspect in early childhood research (CECDE, 2007). This is a consequence of many factors. For example, Irish culture has been going through a stage of rapid change, with economic developments and subsequent decline over the past decade, impacting significantly on family environments (Children's Rights Alliance, 2011; Greene & Moane, 2000; Redmond, Valiulis, & Drew, 2006). Family life is changing with an increased demand for provision of childcare settings and early childhood programmes to support parents at work. Research has shown that effective early education requires relevant guidelines that build on what families can already do as well as focusing on policy and legislation (Pugh, 2007):

The discourses around curricula and pedagogy need to be viewed in the context of not only the relevant national histories and childhoods in the countries in question but also in the light of contemporary economic politics (Pugh, 2007, p. 39).

Therefore, researching environments in an Irish context is a requirement to enable us to understand how to progress the development of learning environments for young children.

However, within the Irish context, little is known as yet about childcare in general with even less known in relation to home settings specifically. The emphasis to date has been primarily on development of quality childcare standards or preschool services rather than looking at the home. Curricular and quality frameworks such as Aistear (National

Council for Curriculum and Assessment, 2009) and Siolta (CECDE, 2006) have been developed for the early childhood sector. Yet, while these are intended to target early childhood learning, it is difficult to ascertain to what extent these guidelines can influence home settings. Furthermore, although there has been a recent emphasis on home learning environments as a result of UK-based research (Melhuish, 2010), this has yet to be expanded into Ireland.

In Ireland, Early Childhood Care and Education (ECCE) settings are regulated through the Department of Health and Children (DoHC) through the Child Care Act (DoHC, 1991) and regulations (DoHC, 2006) to ensure preschool settings are inspected. However, this does not include home-based settings, where up to three children can be minded without a requirement for inspection.⁵ Childminding therefore continues to be a less regulated sector, which contributes concurrently to the lack of research and development also in relation to home-based settings.

Home settings in early childhood contexts include the child's own home, and other homes where the child may be minded. In Ireland statistics show that more than 75% of families organise informal childcare for their pre-schoolers with relatives in their homes, rather than with formal child-minders or in centre-based settings (Office of the Minister for Children and Youth Affairs (OMCYA), 2008b, 2010a). Home settings consequently consist of a variety of contexts, including environmental contexts (i.e. the child's own home, a relative's home or a child-minders home) and socio-economic contexts that can be either formal or informal (i.e. with carers that include parents, relatives, or child-minders). Given the significant findings of the high prevalence of home settings rather than out-of-home environments, it is clear that research is needed

⁵ In order to support childminders to engage in quality provision however, in 2001, the Childminder Voluntary Notification scheme was established to encourage childminders to notify local services of their childminding service, in return for advice and support from an advisory officer (CECDE, 2004).

to address this aspect of early childhood: to explore the home environment. In addition, as informal home settings are most prevalent, this appears to be a specific unexplored area for research: to research the home setting within a family context.

Internationally, ECCE may be spoken about as an integrated system but in Ireland care and education have developed separately. Furthermore, health services for young children with special needs are provided mainly through early intervention teams⁶ that consist of health and social care professionals and rarely include early childhood educators. Within this health sector, there are as yet no specific family-centred approaches that match the Ecocultural (Weisner, 2002) or Natural Learning Environments (Dunst, Bruder, Trivette, & Hamby, 2006) approaches that have been developed in the USA. In some cases health and education are more integrated where the child with special needs is linked to services such as Enable Ireland (James & Chard, 2010). In general however, although an integrated approach is promoted in Ireland, services for ECCE still continue to work separately from the health sector. Specifically in relation to occupational therapy, ECCE is a relatively under-developed sector as yet (Lynch, 2010).

Creating indoor and outdoor learning environments for children is a challenge for all those who work with children. Depending on disciplinary background it is a consideration that is given mixed attention. For many, once a child can reach play tools, has a place to sit comfortably and is safe, the physical environment might be viewed as adequate. While this may seem adequate, it has many limits. For example research has shown the importance of positioning of young babies and the corresponding effects on early motor development. Recent studies have shown that for many babies, free movement on the floor has been restricted- often due to safety concerns related to

⁶ These practitioners typically work under the Disability Act legislation (Government of Ireland, 2005) to assess children at risk for developmental delay.

sudden infant death syndrome. Parents frequently choose not to put their babies on their stomachs to play, resulting in delays in developmental milestone of rolling over which precedes crawling (Liao, Zawacki, & Campbell, 2005). While these delays do seem to sort themselves out by the time the child reaches one year, it is nonetheless a sign of the importance of environmental experiences influencing development.

On a more significant note, children who grow up in impoverished physical and social environments have been found to have major difficulties in their play and development (Cermak, 2001). While it is difficult to determine what specific role the physical environment plays in this developmental process, it is nonetheless a contributing factor. Evidence appears to indicate that unless children have the necessary experiences of movement and play opportunities in the physical environment their readiness for learning is not at its highest potential (Cermak, 2001; Daunhauer & Cermak, 2008; Daunhauer, Coster, Tickle-Degnan & Cermak, 2010).

This leads us also to the issue regarding who controls the environments of young children: children's lives are governed by the opportunities and licences given to them by parents and carers. Creating indoor and outdoor learning environments relates significantly to the role of the adult in what they do and how they do it. The role of the adult is related to nourishment and protection of the child but also is about a person who can:

Assume the primary task of providing opportunities for and nurturing the child's emotional and intellectual growth in accordance with demands from society and culture (D. Pierce & Marshall, 2004, p. 75).

It is consequently more than an issue of the physical environment, but also a social issue incorporating cultural and societal values and expectations. The physical environment may afford many opportunities (J. Gibson, 1977) but unless parents or carers enable

opportunity also, then the dynamic learning environment does not exist: it is at the core of the interrelationship between the physical-social environment and the child. The starting point for this study was therefore to focus on researching the physical environment, but it soon became apparent that the issue was one of foregrounding the physical rather than presenting it as having primary importance. One of the main outcomes of this study consequently has been for a reconsideration of the transactional world-view as one that is characterised by the triad of child-physical-social transactions, each influencing and in turn being influenced by the other.

INTRODUCING THE RESEARCH PLAN: LAYOUT OF THE THESIS

This study involved inter-related phases that in themselves appeared to be ecological in nature: each influencing the other. Exploration of the literature continued throughout the study and developed throughout data analysis leading to further exploration of literature. Thus literature both informed the study and was identified as a consequence of the study. However, for clarity, a literature review is presented in the first few chapters to present a depth and breadth of work that is required to ensure an ecological approach. This is followed by a methodology chapter before the findings are presented and explored.

The thesis contains eleven chapters. Chapter One is the introductory chapter outlining the rationale and purpose of the study. Chapter Two presents the conceptual underpinnings that inform the study. Writing this chapter both clarified concepts and also led to a practical phase of adapting existing frameworks to apply to researching with infants.

Chapter Three, Four and Five represent an ecological approach in that they review studies from the macro to micro perspective, beginning with a national focus then moving onto a community perspective before finally exploring literature on home environments and play. Chapter Six is the methodology chapter that presents the rationale and decision making process in designing and implementing this study. It also addresses reflexivity, ethical considerations and limitations. Findings are presented in Chapters Seven, Eight and Nine, beginning with an introduction to the participants then addressing findings that relate to the sociocultural environment of the home, before addressing the physical environment. Both chapters (Eight and Nine) are viewed as being interdependent and are informed by each other. Chapter Ten addresses a discussion on the nature and characteristics of play transactions and occupations as highlighted by these findings. Finally, the thesis concludes on Chapter Eleven by considering the implications of these findings, in how they support a deeper understanding of child-physical-social transactions as a basis for the promotion of learning environments in early childhood home-based settings.

Summary

This chapter has introduced the research topic, the research purpose and aims and objectives and the context of the research which all inform the study. From this overview, it is evident that this study aims to address identified gaps in research in relation to the physical environment of infants under two in the home setting. The Irish context has been emphasised as a cultural setting that warrants specific study based on our understanding of ecological research that is influenced by context. However, while it is acknowledged that the social environment (and verbal social interaction also) play a crucial role in infant development, the physical environment is foregrounded in order to

explore its specific role in infant-environment transactions. It is important to note that the intention is not to diminish the role of language in child development in this regard.

This study has potential for increasing our understanding of how infants play in the physical environments of the home and how the physical environment shapes and influences that play. Consequently it emphasises a transactional relationship which enables us to explore more specifically how both work to influence each other. Chapter Two will now outline core frameworks that underpin this study, explaining their relevance and how they earned their place in the research process.

CHAPTER TWO: THEORETICAL FRAMEWORKS:

This study proposes to explore play development as described through the transactions between children and their home environments over a twelve-month period. The aim is to explore early play development of contemporary Irish infants through the lens of the physical environment. In using the physical environment as the lens for this study, the intent is to make the physical more visible in respect to the social environment. The **physical environment** serves as an anchor to the other areas for investigation (e.g. the child, play and learning) and serves to support the development of a strong understanding of each area in a context of environmental perspectives. Placing the physical environment at the centre of inquiry however, leads to difficult questions about how to approach research that is contextual- that does not disconnect each contributing element but recognises the complexities of the interrelationships. Consideration was given therefore to identifying a starting position with which to approach the research study conceptually as well as procedurally. This chapter considers theoretical approaches and frameworks that served to guide the study.

Context: towards an ecological approach

Contemporary theories of child development recognise the importance of context, where an integrated view of development is key (Bronfenbrenner, 1993; Rogoff, 2003; Valsiner, 1987). These and other ecological and sociocultural psychologists research children in their environments in new ways to analyse the development that emerges in specific contexts. For example, research in children's learning has focused on contextual situations and has been influenced by ecological psychology (J. Gibson, 1977), dynamic systems theory (Thelen & Smith, 1998), developmental systems theory

(Adolf & Robinson, 2008), sociocultural contextualism (Rogoff, 2003) and ecological cognitive development (Bronfenbrenner, 1993) among others. However, although this emphasis on contextualism is viewed as positive, researchers have been warned to ensure that the child is not overlooked in contextual research (Bronfenbrenner & Morris, 1998).

This brings into focus the realisation of the complexity of human development and the acceptance of the interrelationship between multiple elements to shape and influence such development (Shonkoff & Phillips, 2000). For example, in their review of the nature and nurture debate Shonkoff and Phillips draw research findings from across behavioural and molecular genetics and brain development to demonstrate that both nature and nurture interact to support development- rather than nature providing constraint and nurture providing change, that both in reality play active roles: *'nature and nurture are each sources of stability and malleability in human growth'* (Shonkoff & Phillips, 2000, p. 55). The issue now for research they argue, is not whether the environment impacts on development, but rather how it influences it.

Environments can be regarded as comprising physical, social, cultural, economic, and organisational aspects of children's worlds (Bronfenbrenner, 1979; Rodger & Ziviani, 2006). Within this grouping, physical and sociocultural environments are proposed as the most significant environments for children (Holloway & Valentine, 2000a; Rodger & Ziviani, 2006; Rogoff, Radziszewska, & Masiello, 1995). Researchers in occupational science argue for the need to include environmental and contextual perspectives when considering the occupational nature of children (Humphry & Wakeford, 2006; Lawlor, 2003). Given this perspective, research into children's occupations requires a contextual approach that takes into account local and regional concerns related to physical and sociocultural environments. However, to date, little

attention has been given to the physical environment as it impacts on occupational development of children (Munier, Teeters-Myers & D. Pierce, 2008).

In reviewing the literature, these recent shifts towards a more contextual understanding of children's lives has resulted in the necessity to cross the boundaries of many disciplines: to draw from the work of developmental, environmental and ecological psychology, as well as sociology, anthropology, geography and occupational science among others. Because context can be considered only part of the picture, Tudge and Hogan (2005) recommend that we use the term ecological theories rather than contextual theories to describe and explore this field. This study of infant's home environments therefore requires an ecological approach so that the infant and the play activities he or she engages in over time are considered in the contexts within which they occur. Though it is a developmental study, it is not based in a psychological framework but needs to be viewed from an ecological one that draws from multiple disciplinary perspectives in its conceptualisation.

Transactionalism:

Ecological research considers the person-environment relationship from four different perspectives: trait, interactional, organismic and transactional (Altman & Rogoff, 1987). Of these, transactionalism is considered as the most interactional, contextual approach, as it grants equal status to the relationship among the elements in context: the person, environment and process (Altman & Rogoff, 1987). Instead of viewing the child-in-environment, the transactional model views the child-and-environment: emphasis is on bidirectionality and interdependent effects of the child and the environment (Sameroff, 2009). Sameroff argues that while an interactional perspective has been useful, it does not consider the influences that objects have on each other and is therefore limited

(Sameroff, 2009). In comparison, a transactional approach stresses the active role of both child and environment in the relationship (Kytta, 2003).

Transactionalism has been adopted across different disciplines, which results in different ways of defining or applying it. For example, Gottlieb considers the transactional relationship from a multilevel perspective that ranges from genetic, to neural to behavioural then environmental levels (Gottlieb, 2003).⁷ In other work, attachment theorists view transactionalism as relating to the social environment and not the physical (Morgan, 2010). Kytta critiqued the role of the physical in environmental psychological research⁸ and found that the physical environment appeared to play a passive role (Kytta, 2003). Furthermore, in her analysis of transactional models such as those developed by Bronfenbrenner, she finds little attention to the physical environment.

Transactionalism has been emphasised in occupational science, as a way of considering the person-environment relationship. For example, transactionalism has been applied in studies of children's occupations, resulting in transactions being conceptualised as occurring at three primary levels: at a self-organising level, at a social transaction level and then at a sociocultural level (Humphry, 2005). Before this recent departure, interactionism was emphasised for example by Davis and Polatajko in their Interactional Model of Occupational Developmental (IMOD) (Davis & Polatajko, 2006). However, IMOD is critiqued as being too reliant on the child as the prime force driving development (Humphry & Wakeford, 2006). Instead, transactionalism has been proposed as a valuable framework within which to conceptualise occupation, as it values the person and environment equally and is driven by a concern that the current view of occupation as an individual experience is too limiting (Dickie, Cutchin, &

⁷ Here, Gottlieb is viewing individual development from a transactional perspective

⁸ In her ecological study of child friendly environments,

Humphrey, 2006). In this new way of viewing occupation, Cutchin suggests that instead of viewing the person as adapting to the environment, we view both as co-constructing or restructuring each other (Cutchin, 2004).

Yet there is ongoing debate about the application and usefulness of a transactional approach to the study of occupation. Pierce argues that we need to ensure that we critique it *'in terms of what it offers in addition to current definitions and concepts, instead of as a replacement'* (D. Pierce, 2009, p. 206). There is a concern that applying a transactional approach threatens to lose the individual voice; that the experience of the person within the person-environment relationship is de-emphasised and therefore at risk of being lost. Consequently, transactionalism may not be as useful as it appears, in the study of occupation. Either way, there is a general agreement of the need to research the physical or spatial aspects of occupation and while a transactional approach may not yet be fully accepted, there is an acknowledgement of the need to make use of such frameworks to support research (D. Pierce, 2009).

In summary, to date the application of a transactional approach in research has focused primarily on the social-cultural environment rather than the physical one across many disciplines. So there is as yet an unexplored aspect to considering the physical environment and its relationship with the person from a transactional perspective. Although the transactional approach is viewed as valuable, it has yet to be adequately explored and developed as an approach to the study of child-physical environment relationship. However, it offers a starting point for approaching ecological research.

The implications for considering a transactional approach are that both the child and the environment must be viewed in their relationship with each other and in how one influences the other and changes over time (Altman & Rogoff, 1987). Each element has agency. So how can transactional research do this effectively? One ecological theory

which supports a transactional approach and which ‘*helps us bridge the divide that exists between psychology and sociology*’ (Tudge & Hogan, 2006, p. 104) is Bronfenbrenner’s Bioecological Model.

Bioecological approach:

Bronfenbrenner first introduced the Bioecological model in 1994 (Bronfenbrenner & Ceci, 1994), and then expanded on it with Morris in 1998, to incorporate essential elements of transactional processes (Bronfenbrenner & Morris, 1998). This model emphasises the interplay between properties of Process, Person, Context and Time⁹ (PPCT). It builds on Bronfenbrenner’s previous interactional work, which emphasised the need to research across interconnected aspects of the child’s environment (Wohlwill & Heft, 1987). Time in particular is identified as a core feature that needs to be embedded in researching child development, as change can only be measured over time (Valsiner, 1987). Bronfenbrenner highlighted that while the emphasis on context had become accepted as essential, it brought with it too much emphasis on context and not enough on the child- he argued for redressing this balance to ensure that research considers the child-in-context (Bronfenbrenner, 1986; Bronfenbrenner & Morris, 1998). Consequently, Bronfenbrenner and Morris developed the Bioecological model, combining interconnected perspectives of the environment, with due consideration to the characteristics of the child, along with the PPCT framework to ensure a transactional approach (Bronfenbrenner & Morris, 1998). In order to understand this approach, a number of core concepts need to be explored:

- Developmental-validity and development-in-context
- The nested system- micro, meso, exo and macro systems

⁹ Note that Process is placed before Person in the PPCT model thus emphasising the primary role of process

- Proximal processes
- Developmentally instigative characteristics

One of Bronfenbrenner's earlier ideas was the concept of **developmental-validity**, which grew along with his thinking about development-in-context. Development-in-context was not just about a systems approach to considering child development, but also demanding '*convergence among disciplines of the biological, psychological and social sciences as they bear on the evolution of the individual in society*' (Bronfenbrenner, 1979, p. 13). Knowledge of child development therefore needs to be built from multiple perspectives. Developmental-validity then related to the core principle that for any child, new learning can only be 'valid' when it is observed in typical settings as well as other settings and other times. For example, a toddler who learns to drink from a cup in childcare can only be said to be able to do this task when it is also carried out at home. In relation to research, this principle is highly important as activities observed in a laboratory setting may not be a true measure of a child's development: hence the term developmental-validity.

The **nested system** developed by Bronfenbrenner refers to interconnectivity between contexts, with the immediate setting being the micro system, interactions between settings being the mesosystem, with the broader contexts being the exosystem and macrosystems (Table 2:1) (Bronfenbrenner, 1979). The element of time was expanded on in later work and named the chronosystem (Bronfenbrenner & Morris 1998). Thus the ecological model considers interactions between family, community and societal elements of the environment and not just the proximal processes that occur in the home.

In ecological research, the properties of the person and of the environment, the structure of environmental settings and the processes taking place within and between them must be viewed as interdependent and analysed in system terms (Bronfenbrenner, 1979, p. 41).

Table 2:1 Bronfenbrenner's definitions of each layer of the nested system, 1993

Microsystem:

A microsystem is a pattern of activities, roles, and interpersonal relations experienced by the developing person in a given face-to-face setting with particular physical, social and symbolic features that invite, permit or inhibit engagement in sustained progressively more complex interaction with and activity in the immediate environment (p. 15).

Mesosystem:

A mesosystem comprises the linkages and processes taking place between two or more settings containing the developing person. Special attention is focused on the synergistic effects created by the interaction of developmentally instigative or inhibitory features and processes present in each setting (p. 22).

Exosystem:

The exosystem comprises the linkages and processes taking place between two or more settings, at least one of which does not contain the developing person, but in which events occur that indirectly influence processes within the immediate setting in which the developing person lives (p. 24).

Macrosystem:

The macrosystem consists of the overarching pattern of micro- meso- and exosystems characteristic of a given culture, subculture or other extended social structure with particular reference to the developmentally instigative belief systems, resources, hazards, lifestyles, opportunity structures, life course options, and patterns of social interchange that are embedded in such overarching systems (p. 25).

Emphasis on exploring not just **within** settings but also **between** them is key in understanding this nested system. However, Bronfenbrenner also acknowledges that this integrated view of child development does not stop researchers from focusing on one aspect of the environment but to analyse the system in which it exists and operates (Bronfenbrenner, 1993).

At the microsystem level, **proximal processes** take place, which are viewed as '*primary engines of development*' (Bronfenbrenner & Morris, 1998, p. 996). Proximal processes refer to specific interactions that occur in the proximal environment (Table 2:2).

Bronfenbrenner defined the proximal environment as consisting of *'physical and symbolic features of the setting that invite, permit, or inhibit engagement in sustained progressively more complex interactions with and activity in the immediate environment'* (1993, p. 11). Consequently, proximal processes shape and effect development depending on the characteristics of the child and proximal environment within which they operate. In proposing this system, he argues that there are no *'intelligent children'* only intelligence in context. So the proximal environment includes social and physical processes and structures that support development.

Table 2:2 Features of Proximal Processes (Bronfenbrenner & Morris, 1998).

1. For development to occur, the person must engage in activity.
2. To be effective, there must be regularity in doing activity over extended periods of time.
3. Regular engagement must continue long enough for the activity to become increasingly more complex.
4. Bidirectionality in process of change.
5. Includes interactions with objects and symbols.
6. Moderating influence of proximal process (content, timing, effectiveness) influences change over time.

Finally, the concept of **'developmentally instigative characteristics'** needs addressing. This concept was proposed in 1993, and then expanded in 1998 to include aspects related to developmentally generative dispositions and developmentally disruptive ones, with consideration to forces, resources and demand characteristics that need to be considered (Bronfenbrenner, 1993; Bronfenbrenner & Morris, 1998). These characteristics relate to aspects such as temperament and disposition, sensitivity or reactivity to the environment, knowledge, ability and skills, and agency. So while some are genetically determined, they also relate to the ability of the child to employ abilities and adapt them to the demands of human life.

Bronfenbrenner outlines implications for applying a PPCT framework in research. All four elements of the PPCT framework are required, process needs to be separated from environment, and interactions need to be reciprocal with due attention to characteristics of the person (Bronfenbrenner & Morris, 1998). In this study of home environments, the PPCT model is being used to inform and sensitise the researcher to give due regard to each of these elements in the transactions being observed in the home. Time is addressed through monthly visits over one year. Context is addressed through interviews to consider the meso, exo and macro systems at play, but also through being in the microenvironment. Person and process are considered through the monthly observations and exploration of proximal processes in the home. At the micro level, the home visits become about Proximal Processes, Context and Personally Instigative characteristics.

An affordance approach to understanding the physical environment:

To study the child-environment relationship, there is a need to view the physical environment as having an influence on the child or having agency. Agency can be defined as *'the state of being in action or of exerting power; a means of producing effects'* (Lentin, 2005, p. 192). How can this be considered when the common understanding of the environment is that it is present as a backdrop to daily living, and is passive due to its non-human nature? The affordance approach offers one way to move beyond this immediate perception of the physical world (J. Gibson, 1977). This approach considers how individuals develop a perceptual understanding of the world and the processes involved in the person-environment relationship. Gibson describes an affordance as *'what it offers animals, what it provides or furnishes for good or evil'* (J. Gibson, 1977, p. 68). Affordances are viewed as being intrinsic to the person-environment relationship. In other words, affordances depend on the person's ability to

perceive them. For an infant, this may mean that before the infant can walk, a surface affords a crawling space. When walking skills are learned, the surface affords opportunities now for walking on as well as crawling. Thus the idea of physical environments affording opportunities for action evolved, based on the combination of specific physical properties of the environment matched with an individual's perception of them. An affordance approach can be viewed as transactional as it views the person and environment as both having agency (C. Clark & Uzzell, 2002).

Gibson's theory of affordances is considered to be linked to activity theory and the notion that activity is essential for development (Kyttä, 2003). Affordances are learned through three forms of activity or interactions: by communication, interaction with objects and through locomotion (E. Gibson & Pick, 2000). Kyttä expanded further on the theory of affordances by identifying four types of affordances: **potential**, **perceived**, **used**, and **shaped**. She also identified the need to include social affordances in her studies with children (2003) although it has been noted that J. Gibson did not differentiate between social and physical affordances in his work (C. Clark & Uzzell, 2002)

J. Gibson's affordance approach has been applied in studies of children's outdoor play (Heft, 1988; Kyttä, 2003). Heft argued for applying an affordance analytical approach to the environment as an alternative to the typical use of **form**: for example instead of naming an object by form (e.g. a tree), naming it for function (e.g. climb-on-able). Affordances enable researchers to identify the **functional properties** of an object or place. Using an affordance approach also supports a child's view of the world in which the child lives, based on the knowledge of '*the tendency of children to name places in terms of their functional significance*' (Heft, 1988, p. 35). In Heft's and Kyttä's work, a taxonomy of outdoor play was applied which resulted in the development of

environmental categories that enable discovery of specific affordances. For example, a shelter was identified as affording a place to hide, or a place to be at peace (Kyttä, 2003). Such a taxonomy supports environmental analysis that is not based on the presence of commercialised or expensive equipment, but on the function or potential experiences provided by different objects or places within the physical environment. This has strong value for considering environmental resources and assessments in early childhood settings.

From an occupational science perspective, the concept of affordances has been proposed as a revolutionary way of viewing the environment in terms of the properties of the objects and places within it (Munier, Teeters-Myers & D. Pierce, 2008). Yet to date, few studies have drawn from this concept to guide research on environments. In their study of prosimians and the physical environment, Wood et al. considered affordances in relation to the influence the environment had over the behaviour of the sifikas (Wood et al., 2000). However, their analysis focused instead on **environmental press** rather than affordances. Environmental press is more prominent in occupational therapy literature and is drawn from theory developed by Henry Murray in the late 1930's to explain influences of social expectations on behaviours in context (Hamilton, 2004) or to describe social and physical characteristics of the environment that elicit certain activities while discouraging others (Wood, Towers & Malchow, 2000). From this definition, environmental press appears to be focus on social habits and customs and how these shape behaviour in the physical environment. So perhaps the concept of affordances offers a physical perspective on environmental behaviour to a greater extent than the concept of environmental press, and is therefore more applicable for a study on

infant engagement in the environment, whereby social customs or habits are not yet developed.¹⁰

In the analysis of child-environmental relationships, the concept of affordances allows the transactional approach to be activated and applied (Kytta, 2003). For the researcher, the physical environment can be viewed as having agency and as being active in the transactional processes being studied. The affordance approach to observing children under two enables objects and places to be viewed in terms of how and what the child does with them, rather than naming them in broader, conventional terms. In this way, objects are described by how they are used by the child, which allows for individual difference. Using an affordance approach in this study gives the environment agency and recognises that environments change over time both in relation to physical characteristics and in relation to functional use.

Towards an occupational development approach

In developmental studies, a traditional developmental approach is insufficient to conceptualise transactional processes and change over time (Davis & Polatajko, 2006). Occupational science offers one alternative: to use an occupational developmental approach. Since the discipline of occupational science emerged in the late 1980's, there have been numerous definitions and evolving concepts of occupation and occupational science (for example, Christiansen, F. Clark, Kielhofner, & Rogers, 1995; Hocking, 2009; D. Pierce, 2001; Royeen, 2002). Pierce contends that that *'a plethora of definitions is the norm in science'* (D. Pierce, 2009, p. 204) so instead of considering multiple definitions as problematic, it is a strength of the discipline as it enriches it. However, she argues the need for a broad enough definition that is inclusive rather than

¹⁰ Although it is acknowledged that social customs and habits would exist in the form of the adult who orchestrates the infants' environment.

limiting. Consequently, defining occupation in relation to children and specifically infants becomes important and current definitions need to be critiqued with this in mind.

Occupational science is the study of occupations, which are defined as “*chunks of daily activity that can be named in the lexicon of the culture*” (Zemke & F. Clark, 1996, p. vii). An occupational science approach is based on key assumptions of occupation (see Table 2:3).

Table 2:3: Key assumptions of occupation (Primeau & Ferguson, 1999).

- | |
|---|
| <ul style="list-style-type: none">• That individuals have a drive to engage in occupation• Occupation is complex and multidimensional• Occupation must be considered within an environmental context• Occupation is experienced within the context of time• Occupation holds meaning for the person engaged in it• Occupation influences health and well-being• Occupation is both the product and process of development |
|---|

Primeau and Ferguson’s outline identifies features that apply to infants’ lives: the drive to engage in occupation, the importance of context and time, and processes of development. Occupations are viewed as being contextual- taking into account the socio-cultural contexts of activity, and the physical and biological factors that influence such occupations. With the inclusion of context, time and development, their outline can therefore be named as an occupational developmental approach. Occupational development is a life-long process of ‘becoming’ which Wilcock defined as holding *‘the notions of potential and growth, of transformation and self-actualisation’* (Wilcock, 1998, p. 251). This is not to see childhood or adolescence as only being related to a future goal- that of reaching mature adulthood¹¹ but rather, this is to

¹¹ Which is a stance that developmental psychologists have been accused of taking (Greene & Hill, 2005).

emphasise that as humans we are always in a dynamic learning process of change through our daily experiences and interactions with the environment.

This brings us to critiquing of some of the key assumptions and dilemmas arising from definitions outlined above. For children, play is considered to be the primary occupation (Parham, 2008; D. Pierce et al., 2009). In this study infant play behaviour is being studied which presents a number of challenges, if we apply these key assumptions of occupation. Firstly, infant play behaviour may not be viewed as **complex** (e.g. tapping a table or mouthing an object). Secondly, there is the issue of **meaning**- how can we consider infant play behaviour in relation to meaning? Traditionally, occupations are known to be meaningful through researching with participants who can explain the subjective meaning of activity for themselves. Infants are unable to explain the personal meaning in the same way. Thirdly, the issue of the purpose of occupation as relating to health and well-being is questionable: how do infants' occupations relate to health and well-being or are there other elements here to consider? Fourthly, in considering Zemke and F. Clark's definition there is the issue of occupations being named in a culture- how are children's play occupations represented in culture? Can we truly say that they are?

Complexity, meaning, purpose, voice:

Questions concerning complexity, meaning, purpose and voice have challenged researchers who aim to research with an occupational development perspective. These issues have been identified and addressed in some studies, for example Spitzer's study of occupations of autistic children who are non-verbal (Spitzer, 2003b) and a study of prosimians' occupational behaviour (Wood, Towers & Malchow, 2000). Furthermore, Humphry's work proposes that other principles need to be considered in relation to children's occupations (Humphry, 2002, 2005; Humphry & Wakeford, 2006). Guidance can be taken from this literature.

For example, **complexity** is a core concern in relation to infant's occupations. Wood et al. (2000) and Spitzer (2003b) in considering occupational behaviour argue that the issue is not about complexity but of discerning which behaviours are occupational in nature and which are not. Spitzer remarks:

A definition of occupation that does not acknowledge the occupations of children with developmental disabilities because of the requirement of skill and complexity essentially dehumanises those who engage in "less skilled" or "simple" activities (Spitzer, 2003b, p. 71).

Wood et al.'s work identified instead some core properties of occupational behaviour that can be considered instead of focusing on complexity as an essential element. Occupational behaviour was identified as involving **intentionality** and **purposiveness** and observable through **environmental transactions**- transactional because there is an element of change and influence, which then refers to the final properties: that of **agency** and **adaptedness** (Wood, Towers & Malchow, 2000). Using these properties, a researcher can ensure the occupations being observed are occupational, and this offers a valuable starting point when researching infants.

Why is this such a specific concern? Infants are under researched in occupational science to date and may be in danger of being underrepresented or misunderstood as a result. We may face the same problem identified by Spitzer: for children who may not engage in typical occupations, we are at risk of not recognising what is occupational (Spitzer, 2003b, 2004). Infants have their own repertoire of play occupations, but from an adult's subjective perspective, these play occupations may be viewed as merely exploratory, non-purposeful movements, for example (Humphry, 2009; Spitzer, 2004). Using Wood et al.'s properties of occupational behaviour enables adult researchers to view behaviours differently without relying on complexity as an essential component.

However, we need to challenge what it means to lack complexity. On initial reflection, it may seem that we need to consider children's occupations as being merely simpler versions of adult occupations but Humphry warns against such assumptions (Humphry, 2005). Research shows that children name their occupations differently than adults (Lynch, 2009) or that their occupations may have no name (Hocking, 2009). In researching children's occupations in Cork, Lynch (2009) identified 'non-conventional' occupations of children in middle childhood included catching ladybirds, lying in the grass, visiting the pet shop. Instead parents named the same activities as shopping or playing outside. From the child's perspective lying in the grass was a 'valid' play activity yet it is one that is not typically named in game or activity lists. Adults may consider this to be a passive activity of little value, but from a child's viewpoint this may be a special activity. Similar concerns need to be considered when researching with infants- it is likely their world is equally different in terms of meaning and occupation. It is not a matter of engaging in simpler version of adult occupations, but of considering play occupations from a child's perspective, which requires identifying meaning and purpose for the child.

Researching with children of different ages brings with it therefore a requirement to consider the best methods for accessing the child's perspective. Children's play occupations are something that children know best about so supporting children to be active participants in research is a requirement for the researcher. Researchers have been developing inclusive and participatory methodologies in order to achieve this goal, for example photovoice (Wang & Burris, 1997), draw and write (Williams, Wetton, & Moon, 1989) and the Mosaic method (A. Clark & Moss, 2001). These methods all aim to involve children as 'social actors' in the research process rather than as objects or subjects of research (Christensen & Prout, 2002). However, each of the methods above

involves language to explain pictures drawn or photos taken for example, which places an emphasis on verbal communication (Spitzer, 2003a). While this may be appropriate for older children, other methods are needed for children who are non-verbal or of pre-school age, relative to the age and ability of the child (C. Curtin, 2001).

Observational studies with children aim to move beyond verbal reporting of meaning to see what choices children make. Spitzer contends that for children who are non-verbal:

Participant observation may be the primary method available to understand the meaning of their occupations from their own perspectives (Spitzer, 2003a, p. 67).

When it is not possible to access an individual's subjective experience due to verbal communication difficulties, then observable behaviours are valuable as an alternative. We are guided by observation: people choose some activities over others due to their purpose or meaning for that person (Spitzer, 2003a). Therefore, observing activity enables the researcher to identify what activity is meaningful for the individual. However, an adult perspective of those meanings can be problematic:

Adults often have trouble interpreting children's actions from the child's perspective rather than from their own adult standards, needs and wants (Spitzer, 2003b, p. 70).

For adults, our own habit of communication is different to that of the child who engages in other ways to communicate (C. Curtin, 2001; Spitzer, 2003b). Adults therefore need to consider not just the purpose of children's occupations, but also how they then are represented in cultural and social life. Children in turn depend on adults to enable their voice to be heard.

So, when we consider again the definition of occupation, we can see that the child's world may not be truly represented. Occupations are '*named in the lexicon of the culture*' (Zemke & F. Clark, 1996, p. vii) yet in typical culture, infants occupations are

not very evident. In an attempt to address this imbalance, Humphry defines occupations for children to be:

‘Culturally valued, coherent patterns of actions that emerge through transactions between the child and environment and as activities the child either wants to do or is expected to perform (Humphry, 2002, p. 172).¹²

While this goes some way to ensure a goodness-of-fit with children’s worlds, it is difficult to reconcile this definition with infants who are engaging in non-conventional occupations and for children who have developmental disabilities. For such children, their occupations are often not named in a culture and not culturally valued. Instead, Spitzer’s definition of occupation takes into account the world of infants who do not yet have complexity in their occupations and offers an alternative definition that values the child’s perspective:

A set of directed actions connected by physical movements, materials, space or purpose within a time period, in a way that is meaningful to the individual executing them (Spitzer, 2001, p. 82).

Spitzer chooses not to include a social-cultural perspective in this definition in order to avoid the demands this places on a researcher to ignore non-conventional behaviour. Instead this definition enables the researcher to study all occupations, recognise them and name them in order that they be socially recognised (Spitzer, 2003b). While it does not include social contexts explicitly, it appears broad enough as advised by D. Pierce (2009) to ensure inclusiveness rather than being limited in its application. By applying this definition to the study of infants’ occupations, it is hoped that their worlds can begin to be represented in the social and cultural lives of our times.

In summary, having reviewed some current debates on occupation and applying them to the world of infants, we can make some recommendations. We need to ensure that infants inform our understanding of their occupational lives and their occupations in the

¹² This reflects Humphry’s view, that children’s occupational behaviour is highly embedded in their sociocultural worlds.

same way as adults have informed occupational research to date. To define occupation for infants therefore, Spitzer's definition is proposed as best fit for considering their occupations and occupational development (Spitzer, 2001). Infant occupations are not an issue of complexity but simply of difference. In considering this broader perspective of occupational development, we are enabled to consider how the different occupations of the differing ages of childhood relates to children's worlds and children's culture and in turn the meaning they have for the child.

Summary

This chapter aimed to set out core theoretical frameworks with the intention of defining the foundational concepts guiding this study. Taking an ecological approach to research was both a starting point and a continual process. It guided the researcher to consider in more depth the challenge of exploring the physical environment from a contextual perspective. Consequently, the need for a transactional framework was identified, which enabled the researcher to give due consideration to the person-environment relationship. However, this did not specifically address studies of child development and so the Bioecological Model was identified which provided a framework for engaging in contextual research over time. Each of these three concepts and frameworks¹³ are congruent with contextual research, but also have been critiqued for not giving due consideration to the role of the physical environment. Therefore an affordance approach was used as a way of conceptualising the physical environment as having agency in the transactional process. Finally, an occupational development approach was identified that framed the research within the researcher's discipline, which enabled an understanding of infant occupational development from a new perspective. These concepts emerged both from initial exploration of literature but also during data

¹³ I.e. an Ecological approach, a Transactional framework and the Bioecological model.

collection as they informed the process and confirmed they had earned their place in the research. The next two chapters will explore more specifically the environment from a macrosystem to microsystem level and in particular the proximal processes that occur in the home: transactions between the child and the physical environment, the social environment, and the occupation of play.

CHAPTER THREE: SETTING THE SCENE FOR EXPLORING THE PHYSICAL ENVIRONMENT

In ecological research, the properties of the person and of the environment, the structure of environmental settings and the processes taking place within and between them must be viewed as interdependent and analysed in systems terms (Bronfenbrenner, 1979, p. 40).

INTRODUCTION:

Within ecological research, environments have been studied by many disciplines such as psychology (e.g. cognitive, environmental and ecological), sociology, anthropology, geography each bringing their own perspectives to the field. So this ecological study needs to draw from multiple disciplinary perspectives as we identified in Chapter Two. Rather than reviewing literature according to discipline, this study takes guidance from the Bioecological model which is based on an ecological approach. Hence the environment is considered from a contextual perspective, to encompass different influences from macro to micro environments. In this way, the focus on each layer of the environment can be maintained and some sense of the interdependency considered.

Drawing from Bronfenbrenner's nested system, the literature is reviewed by looking at research from the different layers that contribute to a contextual perspective of the environment. The environmental literature will be considered across three levels:

1. Cultural and societal environment- national and regional level
2. Community-environment- neighbourhoods and community level
3. Home environment- home places, spaces and objects; child and family.

Table 3:1 outlines factors related to each level as they influence the child and family.

Table 3:1: Matrix of interactions between levels of the environment and settings influencing the child and family (adapted from Law, 1991).

	Level	Physical	Social	Cultural	Economic /institutional
HOME ENVIRONMENT	INDIVIDUAL	Access to places, spaces & objects, Child's characteristics Mastery motivation	Childs characteristics - temperament	Culture of childhood	Routines and habits
	PARENTS/FAMILY	Design of built environment Resources in the home Availability of spaces & objects	Parent characteristics Attitudes Expectations Social support	Ethnicity Roles Values Parenting styles Religion	Work patterns Income resources Religion Education
COMMUNITY ENVIRONMENT	NEIGHBOURHOOD & COMMUNITY	Built environment Urban or rural setting Transportation Availability of community resources Accessibility	Nature of community interactions Interagency cooperation Social capital	Diversity Cultural norms	Resources/ Support for work and childcare
CULTURAL & SOCIETAL ENVIRONMENT	COUNTRY	Legislation Policy on access and provision of facilities Play policy	Human rights legislation Social policy Societal values	Family and child: Values Political will and culture Attitudes towards children and families	Economic state Commitment to implementing policy for resources for children and families

There is a need to separate out structure from process: Bronfenbrenner's model is based on a theory of processes driving development but his nested system has often been conceptualised in terms of structure rather than interrelational processes between the layers (Benner, Graham, & Mistry, 2008). The structure of each level will be explored in order to understand the characteristics of that level, but also with the intention of identifying potential processes that occur. This chapter sets out to explore environmental literature beginning with a macro perspective: from a national level, which considers policy and population studies that influence children's environments,

to a community level, which focuses on neighbourhoods, while the home environment as the focus of this study will be addressed separately in the next chapter.

PHYSICAL ENVIRONMENT AT A NATIONAL LEVEL- CULTURE AND SOCIETY

'A person's development is profoundly affected by events occurring in settings in which the person is not present.' (Bronfenbrenner, 1979, p.3).

Research related to policy and population-based research studies are included in this section that considers the environment from a national social-cultural perspective. At the macrosystems level, physical and social environments are difficult to separate, as social policy governs the built environment, and social-cultural environments therefore govern and shape the physical environment to such an extent that separating them out is arguably unhelpful. This section will attempt to consider them individually with the acceptance that this is a false representation of each.

Historically, little is known about children's lives in Ireland (CECDE, 2005; Government of Ireland, 2000). However, since the National Children's Strategy was published at the start of the new millennium, there has been a marked surge of research to amend this gap. For example, in an audit of research in early childhood, it was found that between 2003 and 2006 annual publication of research in this field more than doubled compared to the previous decade (CECDE, 2007). It was noted in this audit however, that the physical environment was a surprisingly under researched area and was consequently identified as an area for prioritisation.

One goal of the Children's Strategy is that we will understand children's lives better. This government call is in the context of a rapidly changing social environment across the world over the past few decades resulting in a changing world for Irish children (Greene & Moane, 2000; National Children's Office, 2004). Such rapid social change is often considered as part of the globalisation effect on society in general and on children's lives specifically (Whiteford, 2001)¹⁴ resulting in increasingly fragmented and pluralistic societies (Heywood, 2002). Whiteford's content analysis on local newspapers in Australia (2001) identified how globalisation was impacting children's lives. Social change was evident in these reports and she commented as a result on '*the complexity of society in which unsafe urban spaces, time pressured parents and the entertainment focus of new technologies in combination are creating a generation of occupationally deprived children*' (Whiteford, 2001, p. 14). In Europe a similar picture is also emerging. In the World Health Organisation report for Europe (Cavill, Kahlmeier, & Racioppi, 2006), researchers reported that physical levels of activity are decreasing with fewer children walking or cycling to school while excessive time is spent watching TV and using computers. Similarly, in the UK, O'Brien and Smith found that parents were concerned their children were becoming part of a passive generation due to overreliance on structured afterschool activity and the different play experiences afforded their children as a result (O'Brien & Smith, 2002).

Here in Ireland, social change can be seen in relation to parental behaviours and attitudes; parents are more likely to apply a protectionist approach in contemporary society (Coyne, Hayes, Gallagher, & Regan, 2006), which limits children's freedom to play and ensures a level of supervision as a basic requirement for play activities. Yet, surveys show that children in Ireland are rated as being the most active in terms of

¹⁴ Globalisation can be defined as a social theory relating to social changes influenced by the evolving importance of the information age, communication technologies and consumerism (Lyon, 1994).

physical activity compared to 41 other countries (NicGabhainn, Kelly, & Molcho, 2007). So, social change maybe effecting Ireland differently compared to other states. However, the concern is that society in general is moving towards the promotion of structured play or leisure and sedentary activity, while limiting unstructured or unsupervised play. Occupations do not develop independently of the environment or context (Lentin, 2005) and therefore there is a need to take into account the impact of globalisation on the occupational development of Irish children as advised by Whiteford (2001).

During the economic boom in Ireland, Irish society was impacted by increased wealth, increased immigration and decreased emigration, while more parents worked outside the home, with a resultant impact on childcare needs (Greene & Moane 2000). With the economic boom now evolving into a recession, the patterns of daily life are changing again and we cannot assume the same influences exist in Irish society. The next section therefore focuses on more recent studies and national level policy development to enable us to consider whether children's lives are still changing at such a rapid pace, and how their lives are impacted.

Children in Ireland: policy development and national population-based research

From a national perspective, Ireland has demonstrated a continued focus on children's lives since 2000 in relation to policy development and changes in the political and administrative structures in government. As noted in the review of policy (CECDE, 2004), there had been a lack of priority given to early childhood for many decades up until the 1990's, which changed in 1992 with the ratification in Ireland of the UN Convention of the Rights of the Child (1989). With the subsequent publication of the National Children's Strategy (2000), children's lives became more prominent as a focus for policy development and research. There have been three publications (OMCYA,

2006; OMCYA, 2008b, 2010b) of the State of the Nations Children report, which publishes key indicators of children's well being. The CECDE was set up, with a primary goal to develop a national framework for quality standards for all settings that provide for children under six years of age (CECDE, 2004).¹⁵ Ready, Steady, Play- A National Play Policy, was published in 2004, aimed at young children,(National Children's Office, 2004) with TeenSpace (A National Recreation Policy) being published for older children and teenagers in 2007 (OMCYA, 2007).

In its review of early childhood education and care in Ireland, the OECD proposed the integration of each sector under one ministry (OECD, 2004). Subsequently, in 2005, the government supported the development of the Office of the Minister for Children which brought together services related to children's lives from across the sector- including justice, health, and education, with the aim of promoting cohesive policy development. In 2011 this office was formally established as a specific department within government: the Department of Children and Youth Affairs (DCYA).

So what do we know about life in Ireland now in 2011 for children and families? From the State of the Nations Children we know that Ireland continues to have the highest proportion of children under 18 years of age, of all the countries in Europe, at almost 25% of the population (OMCYA, 2010b). Of that number, approximately 13% are infants under two, 62% live with mothers who have completed second level education of whom 30% have completed third level degree (OMCYA 2010).

In 2006 the National Longitudinal Study of Children commenced, which gathers data on infants of nine months and children age nine years and is another source of current data on children's lives (OMCYA, 2010a). Over 11,000 families are taking part in the Infant cohort, which targeted infants of nine months of age and will extend over seven

¹⁵ However, with government cutbacks this was subsequently closed down in November 2008.

years. Though this is a study of nine-month olds, it gives a useful focus for considering the lives of Irish infants under the age of two years in general. For these infants, 84% live with two-parent families and the majority live in a house (92%) rather than apartment or flat, while 75% of these homes have three or four bedrooms. Therefore regarding physical places, the majority of infants live in houses with three or four bedrooms.

With regard to the other primary settings of childhood, childcare was also researched, highlighting great variability in relation to who provides the care and where it is provided. For example, home care was provided in 78% of cases by parents and relatives, with 71% of infants being minded in their own home, while 18% were minded in relatives' homes. Only 11% were minded in centre-based care. This totals 89% of infants who are minded in a home setting. As these infants were only nine months old, it maybe that many mothers were still on maternity leave. However, in an earlier survey of preschoolers in 2005, it was also found that 88% of preschoolers are minded in home based settings, primarily by parents and relatives (75.5%). Only 12% were minded in centre-based settings (OMCYA, 2008b). These studies highlight that researching centre-based care in Ireland is only targeting a potential 12% of young children and is therefore a limited perspective on the Irish context. Home-based settings are the primary location and setting for infant childcare in Ireland.

Early Childhood frameworks

Following a commitment by government along with the social partners to work towards the development of quality childcare, two key pillars or frameworks were developed for early learning and education:

1. Siolta- the National Quality framework for Early Childhood Education (CECDE, 2006).

2. Aistear- the Early Childhood Curriculum Framework (National Council Curriculum and Assessment (NCCA, 2009).

Siolta is a quality assurance framework, consisting of 16 quality standards for guiding quality in varied ECCE settings, such as day-care, sessional services and child minding. Early childhood is separated into different age groupings with the first two sections relating to infants under two.¹⁶ Twelve principles guide the framework, one of which is titled enriching environments.¹⁷

Aistear in comparison is a curricular framework and has a broader perspective in its purpose of enabling all those who are responsible for children, including parents to provide early childhood experiences for children that are challenging and enjoyable (NCCA, 2009). Aistear focuses on principles of early learning and development under themes of well-being, identity and belonging, communicating and exploring and thinking. In comparing both, Aistear is viewed as giving specific support to the rights of the child, environments, parents and families, interactions, and play among others (NCCA, 2009).

Aside from these frameworks, there are also national guidelines for childminders that developed from the National Childcare Strategy 2006-2010 (OMCYA, 2008a). Childminders in this instance are defined as people who are self-employed in their own homes, and who mind other people's children typically of different ages. However, the development and support for use of these guidelines is viewed as making minimal progress (Children's Rights Alliance, 2011).

In each of these documents, the environment is addressed in relation to the opportunities

¹⁶ From birth to 18 months, and one to three years.

¹⁷ Siolta is now part of the scheme developed nationally to offer one free preschool year for every child. In this scheme, childcare providers can apply for a grant from the government, and in return Siolta must be implemented in their service (OMCYA, 2009).

both the indoors and outdoors provides for play and socialisation within these settings. For example, Siolta considers that the physical environment has a direct influence on learning and development of the child (CECDE, 2006).¹⁸ In Aistear, the place for play is addressed, and both indoors and outdoors are given equal importance, with a recommendation that there is a direct connection to the outdoors so children can easily access the outdoor environment each day. In comparison, the Guidelines for Childminders stress the need for secure and happy home environments, kept in good state of repair, fit for purpose with adequate space to play including floor space (OMCYA, 2008a).

Children in Ireland: play and the physical environment:

So far, these documents and reports highlight something about the nature of the Irish social-cultural context that often includes the physical context by default: for example that two-parent families are in the majority and that most families live in a house rather than apartment. So, where is the physical built environment addressed specifically in relation to children's play and learning?

The National Children's Strategy (DoHC, 2000) addressed the issue of the built and natural environment for children and subsequently national play and recreation policies were developed, with plans to support the design of play spaces. Ready, Steady, Play- a National Play Policy was published in 2004 with the main objective of increasing the availability of play spaces, with the goal of therefore providing increased play opportunities for children (NCO, 2004). The policy identifies what a rich play environment should include (see Table 3:2).

¹⁸ Siolta, Standard Two recommends that: '*enriching environments, both indoor and outdoor (including materials and equipment) are well-maintained, safe, available, accessible, adaptable, developmentally appropriate and offer a variety of challenge and stimulating experience*' (CECDE, 2006), p. 19).

Table 3: 2. Creating a Rich Play Environment, National Play Policy, (NCO, 2004, p. 11).

• A varied and interesting physical environment-changes in level, hiding places, trees and bushes, places to inspire the imagination
• Challenge in relation to the physical environment -activities which test the limits of capabilities, rough and tumble, chase, games
• Playing with natural elements-earth, water, sand, fire, digging, flying kites
• Movement- running, jumping, rolling, climbing, balancing, beams and ropes, soft mats, space, juggling
• Manipulating natural and fabricated materials, materials for art, making and mending, building dens, making concoctions, using tools, sand, mud, access to bits and pieces
• Stimulation of the five senses-music making, shouting, quiet places, colours and shapes, dark and bright places, cooking on campfire.
• Experiencing change in natural and built environments-experiencing seasons through access to the outdoor environment, opportunities to take part in building, demolishing, or transforming the environment
• Social interaction-being able to choose whether and when to play alone or with others, to negotiate, cooperate, compete and resolve conflicts...
• Playing with identity- dressing up, role-play....
• Experiencing a range of emotions- opportunities to be powerful/powerless, scared/confident, liked/disliked...

In the policy, the built environment is identified as contributing to the limitation of children's play, due to commercialisation of play spaces, the increase in structured activities over free play, and the concerns around safety as being to the fore in urban planning (NCO, 2004). Furthermore, the policy identified the need for not just an increase in play areas, but also provision of more appropriate play opportunities, which did not just relate to sports.

Summary

In overviewing these policies, there is a common thread around the physical environment: in early childhood at a policy level, the role the physical environment plays in supporting children's learning is valued, and the need for an increase in the provision of both indoor and outdoor designated play spaces and opportunities is identified. However, funding and support to develop these resources has been limited to date. So in summary, the societal and cultural environment frames and shapes the physical world with its policies and legislation that reflect the social and cultural values

of a community at national level. However, it presents an ideal view of society in many ways as it does not represent the actual environment in which children live, but rather the future environment that is planned for, which depends on resources and continual commitment from the multiple stakeholders and leaders whose task it is to lead and manage change. In contrast, the national population-based studies such as the Growing Up in Ireland, captures windows in-time of how families and children are living their lives, and what some of the influences on those lives might be. The next section addresses the community and neighbourhood environments as the next level or system within which the infant lives.

PHYSICAL ENVIRONMENT AT THE COMMUNITY LEVEL

At this level, the physical environment is considered as it relates to the community or neighbourhoods of children and families. Studies of community environments have highlighted that neighbourhoods are socially construction cultural environments (Holloway & Valentine, 2000a). It is important therefore to identify research from an Irish perspective culturally, socially and physically, as well as to learn from other cultural studies.

A neighbourhood can be defined as referring to a number of people living near one another or in a particular locality that includes places of work, worship, business and leisure (Ziviani & Rodger, 2006). For this current study, children's neighbourhood places are considered to be:

Community open spaces and communal facilities in a neighborhood that children consider as being especially important to them in terms of psychological, behavioral, and symbolic meaning (Min & Lee, 2006, p. 51).

The focus of this section is therefore to consider neighbourhood environments in relation to children and play, with a focus on locations for play and learning, and on

child and parent perspectives. This includes indoor and outdoor community environments that are built and natural.

Places and Spaces in community environments:

Space and spatial organisation of neighbourhoods is frequently viewed from the perspective of town planning and societal production of space (Law, 1991). Consequently, researchers and planners closely study space-use to determine how best to design neighbourhood spaces. For example, in a study of street play in Hannover, the spatial-patterns of children in the street were mapped and subsequently the streets redesigned to support play, resulting in an enriched play environment (Eubank-Ahrens, 1984). This redesign was based on the concept of ‘Woonerf’ which emphasises street-sharing: that neighbourhoods as a whole must be viewed for play, even if there are designated playgrounds nearby. Equally, in other studies this need for spaces to play rather than places to play (such as playgrounds) has been identified. Children report spaces for play as being as important as places (Roe, 2006). Consequently, in a review of urban settings, Francis and Lorenzo (2002) identified a typology of important places for children in planned environments that does not only include designated places but also **found places** and **wilderness** (Table 3:3).

Table 3:3: Typology of designed and planned places for children (Francis & Lorenzo, 2002, p. 158)

<p>Institutional places Day-care Schools Schoolyards Sports parks Theme parks</p> <p>Public places: Streets Sidewalks Parks Trails Malls Waterfronts Beaches</p>	<p>Private places: Home Cars</p> <p>Found places: Vacant lots Natural areas Waterfronts Street corners</p> <p>Found/off limits places Discovery/adventure places Vacant lots</p>	<p>Wilderness: Urban wilderness Natural areas</p> <p>New and innovative: Community gardens School gardens City farms Greenways Skate parks Town trails Front porches Cyberspace</p>
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Research shows that children's play environments have changed in recent decade. For example, community spaces are seen as adult spaces rather than spaces for children (Karsten, 2005; Nilsen & Rogers, 2005). In the industrial world specially this has been attributed to increased urbanisation with consequent issues of traffic, density in population, and the safety issues that ensue (Rivkin, 2006). However, outdoor play still is evident though there may be a difference in the frequency of playing outdoors. Karsten argues for an objective consideration of how children's lives have changed, however (Karsten, 2005). In her historical study in Amsterdam, she explored the changing relationship between the use of space in three streets over time. She found that social-cultural changes have been influential- whereby in the present, smaller families with larger home spaces afford more indoor play spaces. Furthermore outdoor city spaces on the streets were more crowded with cars and rubbish, with children not typically living close to others who attend the same school (Karsten, 2005). Similarly, in a study of street play in New York, USA, fewer children played outdoors than in previous generations and again this was influenced by urban geography and space for play (Dargan & Zeitlin, 2006). Playing inside is a choice children make compared to previous generations when children used to be sent outside to play, as there was less space at home (Karsten, 2005).

Playgrounds in neighbourhoods: the purpose-built environment.

In the literature, three main types of playground have been identified: traditional, contemporary or adventure (NCO, 2004). Each type offer different affordances, which appear to influence the nature of play and determine the amount and type of activity engaged in. For example, softer surfaces of the contemporary or adventure playgrounds has been shown to elicit more adventurous forms of play (Wohlwill & Heft, 1987). Researchers comparing across these types have identified that adventure playgrounds

are the preferred choice of teenagers and rarely used by preschoolers (Wohlwill & Heft, 1987).¹⁹

Playgrounds do not easily fall into these categories and so it is recommended to consider instead specific features of a playground in order to research play behaviours (Barbour, 1999). Barbour's review of playground research highlights that play is influenced by the amount of space per child, organisation of space, presence of enclosed areas, type of equipment and challenge for the child (Barbour, 1999). Her study of seven and eight year-old Texan children highlighted the constraining and facilitating influence overall of playgrounds based on these factors, with the most facilitating playgrounds providing adequate space and challenging equipment for each age group.

For preschoolers (aged from three to five years), researchers have found that preferred playground activities include swinging (favourite activity) open-space play, climbing on structures and sand-play (Holmes & Procaccino, 2009). Furthermore, developmental benefits are seen in playgrounds for preschoolers that include equipment for motor development (such as climbing), for pretend play (such as play houses and cars) and for construction (such as stacking and digging) (Frost, Brown, Sutterby, & Thornton, 2004). In a study where parents of older children were the informants, playgrounds were viewed as being limiting for their children specifically when they did not provide appropriate challenge for them (Veitch et al. 2006).

Playgrounds have been researched in relation to usability also. For example, in a high-density Korean city, Min and Lee (2006) identified that children preferred to play in one playground more than another due to its lack of walk-through traffic. The least preferred

¹⁹ However, in their original form, adventure playgrounds have not been popular for town planners due to the issues of safety and the need ideally for trained play leaders. Consequently, they have never been popular in the USA (Frost & Woods, 2006) and in Ireland, are the least developed playground type (NCO, 2004).

playground was rarely used due to it being a short cut for adults to walk through to local shopping areas. Their study identified that children valued places that offered security as well as challenge, enclosed and private spaces as well as public, and that the affordances for activity in the spaces were adequate for current as well as developing needs.²⁰ Similar findings were identified for a group of children in middle childhood who had special needs, who valued having a place to socialise, that involved challenges and risk for them, and that also involved real things such as play houses or cars. These children identified issues related to usability as well as accessibility as important in their play environment (Prellwitz & Skar, 2007).

Overall, studies identify the necessity for playgrounds to be designed with the age of the child in mind, with due attention needed to the nature of challenges for the child, as well as affordances available within the playground to support and enhance play: that playgrounds need to be designed to meet the needs of children of diverse ages and abilities, in the context of a supportive play environment. However, as Chawla and Heft warn, while places such as parks and playgrounds may be present in a neighbourhood, they may not afford play opportunities because of the presence of busy streets, for example (Chawla & Heft, 2002). There is a need to look beyond environmental structure and look at how it functions and what opportunities it affords. The next section considers how environments are used from a functional approach.

Places and spaces: their relationship with play:

One factor that influences space-use is the spatial distance between places- impacting on occupations and daily routines, e.g., distance from shops or childcare (Hamilton, 2004). These are issues of geography as well as human planning and so relate both to urban and rural settings. Urban living presents different place and space opportunities

²⁰ Note that these children were aged seven to twelve years of age.

for play than rural living and this has also been a focus of research. Parents in urban areas reported their children to play more frequently outside when there are friends living nearby to play with (Ziviani & Rodger, 2006), especially if they live in built communities such as cul-de-sacs (Veitch, Bagley, Ball, & Salmon, 2006). In a study comparing higher and lower socioeconomic status (SES) factors in outdoor play in urban areas, Ziviani et al. (2008) found that children living in lower SES areas played more at home and in the neighbourhood than children from higher SES areas. The latter group played more in commercial centres for structured play activity (Ziviani, et al, 2008). This highlights the relatively new issue of the commercialisation of outdoor space. In this study²¹, researchers found that outdoor activity places for children consisted of many commercial spaces, resulting in community resources that had evolved into commodities for purchase rather than being accessible to all (Ziviani et al., 2008).

It may be argued that urban settings naturally provide more opportunities or affordances for play but this is not necessarily true. When studied from an affordance perspective, Kytta identified that rural (village) settings appear to contain a richer set of affordances than urban (city) settings (Kytta, 2002). So while parents may work hard to build in opportunities for structured, commercial activity, it appears that for children, informal socialisation opportunities may be more significant in local communities overall; that having peers to play with nearby appears to have a more significant link with outdoor play and activity than the availability of facilities (Veitch et al., 2006).

Functional approach to the environment: affordances

These studies highlight the importance of viewing the environment not just in relation to the presence of facilities and commercial activity, but to consider it from a functional

²¹ Consisting of 318 families in Brisbane Australia.

perspective. Heft (1988) developed a functional approach to considering outdoor environments for children through an analysis of three of the most detailed accounts of children's outdoor activities at the time: Barker and Wrights study of one boy's day (1951), Moore's study of English boys and girls, age nine-twelve years (1986) and Hart's study in New England of primary school aged children (1979).

Barker and Wright (1951) are recorded as one of the first studies to use naturalistic observations of children²² in order to capture a record of daily activities. Their study showed how the environment shapes behaviours- that the play of individual children in one environment is similar (Gump, 1989). Moore (1986) also studied in detail children's outdoor activities of children.²³ His study highlighted that children have local special places for play, where there is shelter and privacy and places to hide. In subsequent work, Heft named these places **micro-habitats** to capture the notion of valued areas for play (Heft, 1988). In Hart's study of outdoor play, it was found that children named places in terms of their functional significance (Hart, 1979) demonstrating the fact that many places are named for what activity is afforded there. His study distinguished four categories with which children's experience of place can be analysed: spatial activity/doing, place knowledge, values and feelings, and place use (Hart, 1979).²⁴ This categorisation demonstrates the complex nature of the child-environment relationship, including the importance of places for being as much as doing. Heft combined the findings from these studies and developed a functional taxonomy of place-use (Table 3:4).

²² One seven-year old boy in this case, living in the USA

²³ Children aged 9-12 years in three different locations in England.

²⁴ This was expanded further by Titman in her study of school grounds into places for **doing, thinking, feeling and being** (Titman, 1994).

Table 3.4: A preliminary functional taxonomy of children's outdoor environments (Heft, 1988 p. 36)

Flat, relatively smooth surface	Affords walking, running Affords cycling, skating, skateboarding
Relatively smooth slope	Affords coasting down (e.g. on bike, wagon) Affords rolling, sliding, running down Affords rolling objects down
Graspable/detached object	Affords drawing, scratching Affords throwing Affords hammering, batting Affords spearing, skewering, digging, cutting Affords tearing, crumpling, squashing Affords building of structures (e.g. raw materials for forts)
Attached object	Affords sitting on Affords jumping-on, over, down, from
Non-rigid, attached object	Affords swinging on (e.g. tree branch)
Climbable feature	Affords exercise, mastery Affords looking out from Affords passage from one place to another (e.g. stairs, ladder)
Aperture	Affords locomoting from one place to another Affords looking and listening into adjacent place
Shelter	Affords microclimate Affords prospect/refuge Affords privacy
Moldable material (e.g. sand, dirt)	Affords construction of objects (e.g. pottery) Affords pouring Affords modification of its surface features (e.g. sculpting)
Water	Affords splashing Affords pouring Affords floating objects Affords swimming, diving, boating, fishing Affords mixing with other materials to modify their consistency

In more recent work, these findings have been corroborated. For example, in Roe's study of English children age six to ten, children reported play places that were special because they were away from adult influence: secret places (Roe, 2006). Thomson and Philo studied a group of Scottish eight and nine year-olds and found that the street was their most important play area with "hanging out" activities highly rated (Thomson & Philo, 2004). Similarly, in a Cork study, playing in the park was voted the most favourite activity to do and was associated with playing with friends (Lynch, 2009). Kytta built on Heft's work to analyse the affordances of different settings in Finland and Belarus, and found that the largest number of affordances were in immediate surroundings, with the need to add to Hefts taxonomy by including an affordance for sociality (Kytta, 2002).

These studies all confirm that children in different cultures value informal geographies and microhabitats for play, where they are afforded opportunities for doing and being, and for socialising. Understanding children's geographies through an affordance approach has provided a way to consider the environment based on functional use which has facilitated a newer understanding of how children experience their physical worlds. However, they relate primarily to children rather than infants and it cannot be assumed that the same findings would apply to younger children. The next section explores more specifically the relationship between the younger child and the outdoor environment.

Outdoor play environments for younger children:

Research on younger children's community environments has focused primarily on formal childcare settings with little attention to date on the influence of outdoor play on cognitive development and learning (Fjortoft & Sageie, 2000; Waters & Maynard, 2010), with even less research on infancy and the outdoors (Strinistre & Moore, 1989; Waller, 2006; Wohlwill & Heft, 1987). However, from reviewing outdoor literature, the largest bodies of work appear to lie in preschool studies from Scandinavian countries where the outdoors is culturally valued as a learning environment for children. In many cases this refers to settings where childcare is provided in the natural outdoors with varied terrain, woods and shrubs, and open pastures. As for the studies with older children, an affordance approach has been acknowledged as important, due to the need to consider the environment from a functional perspective (Fjortoft, 2001; Fjortoft & Sageie, 2000; Storli & Hagen, 2010). Kernan notes that this has allowed all of the outdoor features to be considered from a '*playability*' perspective irrespective of whether they are natural or built features (Kernan, 2010, p. 154).

Studies of younger children's perspectives of the outdoors have been explored using the mosaic approach (e.g. A. Clark & Moss, 2001; Waller, 2006). Clark and Moss were the originators of this approach which views young children as competent communicators of what is meaningful in their lives. Methods used are based on known ways that young children communicate, for example through movement, drawing, pictures, group activity (A. Clark & Moss, 2001).²⁵ Using this approach, Clark completed three studies with three and four-year olds (A. Clark & Moss, 2001, 2005; A. Clark, 2004, 2005; 2007; 2005). In these studies, preschoolers demonstrated that they did not really separate out indoors from outdoors, but instead looked for spaces that were **private, social or imaginary** (A. Clark, 2007), but nonetheless they named the outdoor environment as an important setting for them as a place to play (A. Clark & Moss, 2001). This was a similar finding in an Irish study of children's preferences for play in childcare settings in Louth where children reported that they '*liked to play outside as much as possible*' but this was dependent on the weather (Wilkinson, 2008, p. 17). Given the need for children to feel an emotional tie to places, Clark's study also highlighted how the outdoors became personal for the children through frequency of access. This has also been identified in other studies (e.g. Waller, 2006, 2007). In his work, Waller found that young children personalise activities in natural environments once they are enabled to access them freely (Waller, 2006, 2007).

In other studies, children were asked to name their play references in outdoor play. Overall, children commonly report preferences for the natural rather than built outdoor environment with nature being a high priority for children (Hart, 1979; Heft, 1988; Moore, 1986). More specifically, in Norway, almost 100 children who attended natural

²⁵ The result is what is termed the 'mosaic' approach due to its use of multiple sources of data drawn from the children's engagement in activity.

environment early childhood settings listed running, jumping and climbing as their favourite activities (Kaarby, 2005). In Sweden, 68 children aged three to five years identified climbable features as the most frequently used affordances in outdoor play, with water as the least used (Niklasson & Sandberg, 2010), while in another Norwegian study, three to five year-olds reported preferences for sliding, building dens, climbing and skiing (Fjortoft, 2001).²⁶

Studies have reported positive effects on children from playing in natural environments (Fjortoft & Sageie, 2000). For example, outdoor settings support more opportunities for negotiating play, participation and social interaction than indoor settings, which is attributed to the presence of more flexible social spaces (Aasen, Grindheim, & Waters, 2009). The particular aspect that appears to appeal to children is the presence of ‘loose parts’ such as berries, rocks, leaves, flowers etc that provide flexible, changing environments for play (Waters & Maynard, 2010). Compared to other features, such loose parts have been found to facilitate construction and symbolic play, particularly where the environment contained deciduous trees and scattered shrubbery (Fjortoft & Sageie, 2000). It is noted how these elements are so often absent in formal playgrounds in comparison.

The outdoors offers different affordances for play than home environments, providing space for movement, with the majority of outdoor play being active play (NCO, 2004), or physical activity play (Kaarby, 2005; Pellegrini & Smith, 1998). This is most commonly linked to a health-promotion perspective on outdoor play, due the strong correlation to physical fitness (Fjortoft & Sageie, 2000; Thigpen, 2007), with associated positive effects on psychological health (Hougie, 2010). For example in Norwegian kindergartens that are provided almost entirely in the outdoors, children show lower

²⁶ In each study preferences need to be viewed as also representing the context of each environment, physically, socially and temporally.

levels of absence due to sickness (Fjortoft, 2001). However, physical fitness does not only refer to formal or structured outdoor play. Studies that compare playing close to home versus playing in commercial facilities show that there is no difference in physical activity levels (Ziviani et al., 2008). In another study of older children from a sports science perspective, it was found that while rural-based children had fewer formal physical activity settings available to them their engagement in activity was similar to those who lived in urban settings (Lee & Abbott, 2009). It seems that again, the most significant aspect relates to the affordances within these outdoor settings rather than the actual built or planned facilities that have been designed for use.

Comparing indoor and outdoor play in childcare settings throws up some useful insights also. In a study of one childcare setting in New Zealand, 25 children (five under two years of age) were observed over five months to explore indoor and outdoor play. Analysis identified four main dimensions that differentiate between play in each setting (Table 3: 5) (Stephenson, 2002).

Table 3:5: Dimensions that differentiate between indoors and outdoors (Stephenson, 2002)

Indoors	Outdoors
‘Look at what I have made!’ stable environment more controlled environment Encompassing	‘Look at me!’ environment of change freer environment Open

The high levels of physical play outdoors were represented by the ‘look at me’ dimension where children expressed themselves through their movements more than through producing or constructing things. The outdoors was seen to be constantly changing in itself, with wind, sun, temperature, smell and so on, in a manner that is not equalled indoors. Routines were more centred indoors, while the physical materials tended to have designated places indoors but outside, were more transportable. Indoors

presented as a close socio-emotional environment where adults worked to provide secure learning contexts, compared to outdoors where children extended their play more with each other and relied less on adult input. Identifying these different dimensions enables researchers to consider indoor-outdoor characteristics as different but complementary in providing rich, varied and satisfying learning opportunities for children (Stephenson, 2002).

While Stephenson focused on the characteristics of what the children do in each place, Kernan explored more specifically the physical relationships between spaces in four Irish urban early childhood settings. Three fields of action were noted: **indoor-outdoor connectedness, the enclosed outdoor space and the wider outdoors** (Kernan, 2010). Using the indoor-outdoor connectedness dimension, Kernan noted how the outside in some settings could not be seen from inside due to windows being too high. This went contrary to recommended designs of childhood settings where the outdoor environments are considered to offer affordances for stimulation by simply being within the child's view (Kernan & Devine, 2009). Other barriers were also evident in the provision of outdoor play. At a national level, Kernan and Devine (2009) found that 11% of settings had no access to outdoors. Where dedicated outdoor space was available, it was considered to be of limited design, with mostly grass or safety surfaces. Natural objects and materials such as trees, water or flowers were only available in 38% of settings.²⁷ These studies demonstrate difficulties in provision of indoor-outdoor connectedness in settings that are not designed specially for children, resulting frequently in limited outdoor play opportunities.

²⁷ A contributing factor is the changing nature of Irish provision for childcare in recent years, with a move from informal places such as homes to more formal premises which has changed the availability of outdoor spaces. This was noted as a key factor in the lack of current outdoor spaces in many settings.

Summary

So in summary, what can we learn from this about what children need from their community places for play? Outdoor play has become an issue of choice for many children (Karsten, 2005) and is identified as an important place for preschoolers (A. Clarke & Moss, 2001; Wilkinson, 2008). Studies have identified the need for preschoolers to access a variety of play environments that provide adequate challenge, but also include places that are private, social or imaginary (A. Clark, 2007). In built environments, children have identified that their playgrounds need to be usable as much as accessible (Prellwitz & Skar, 2007) while preschoolers named swinging as their preferred activity (Holmes & Procaccino, 2009). Furthermore in natural environments, their preferred activities involved physical play such as running, jumping and climbing. Overall however, studies have shown that children consider the functional nature of environments which can be observed using an affordance approach. Environments that are rich in affordances have little to do with commercial facilities but instead emphasise the playability of the spaces and objects therein. While much of this research relates to older children and preschoolers, little is known as yet about infants' needs. However, it seems likely from this work, that infants may also have a need to access varied and specific types of places and spaces and is an important consideration in researching the relationship between infant and environment.

Play opportunities are heavily reliant on licences parents and carers give to their children for accessing the environment outdoors, so values and attitudes underpin much of the choices children are able to make about their lives. Therefore, the next section considers the roles adults play in facilitating environmental play.

ADULTS: ENABLERS OR RESTRAINERS OF CHILDREN'S PLAY IN THE NEIGHBOURHOOD?

In researching children's play, there is a need to consider peoples' values, attitudes and assumptions about spaces (Holloway & Valentine, 2000a). Accordingly, research has focused on adults' perspectives on children's play in social geography, as part of exploring '*social relations and the spatial structures that underpin those relations*' (Valentine, 2001, p. 1).

As we have seen, globalisation has impacted on play and communities, with contemporary children being seen to play differently than in the past, and to choose to play in different environments, which has been described as a '*retreat to home environments*' (Hasluck & Malone, 1999, p. 178). Children are being encouraged to play indoors more often than outdoors which has brought with it an increased interest in exploring the home as a social setting for children's lives (Nilsen & Rogers, 2005). Furthermore, research has begun to explore the parents' role in supporting children's play.²⁸ Parents are identified as being influenced by a number of issues including health and safety, perceived dangers in children's use of outdoor spaces, and their own perceptions of what is appropriate play (Malone, 2007; Nilsen & Rogers, 2005).

Consequently, parents are frequently found to be the gatekeepers of their children's occupational opportunities (Karsten & Leit, 2006) granting or denying permission for their children to access the local environment (Tranter & Pawson, 2001). Research has found that parent' perceptions of appropriate environments for children are what influence the licenses they give for play (Mee, 2010). Appropriate environments are considered to be those related to low risk for gangs, strangers and road traffic either at the play area, or en route to the play area (Veitch et al., 2006).

²⁸ While the majority of these studies are of parents of children in middle childhood and older, it demonstrates contemporary issues that influence parenting.

Tranter and Pawson found that parental influence and control results in what they described as a **negotiated geography** of children's activities (Tranter & Pawson, 2001). In their New Zealand study, parents ruled whether the child could go to and from school alone or play on the street nearby and in this way a parent-child negotiation occurred, resulting in a licence or permission being given. Contemporary parents often take on a protectionist approach when considering their children's freedom to play, considering them more in need of protection than parents of previous generations, resulting in what she termed the '*bubble-wrap*' generation of children (Malone, 2007, p. 513). The threat to children is that we may be at risk of producing children who are '*lacking in competence, sense of purpose, social competence, self-worth, and efficacy and resilience*' (Malone, 2007, p. 523).

One example of this protectionist paradigm can be seen in differences of opinion in the need for risky play, with adults commonly viewing risk as negative and dangerous, while children view it as fun and positive (Stephenson, 2002; Waters & Begley, 2007). Risky play is part of the physical play category of rough-and-tumble play (Pellegrini & Smith, 1998) which is often confused in adults as being aggressive and dangerous. However, engaging in challenging play activities is also considered to be an essential part of becoming at home in the world (Waters & Begley, 2007). Without it, long term psychological and emotional development may be compromised (Little, Wyver, & F. Gibson, 2011) with subsequent impact on the child's independence (Coplan, Rubin, & Findlay, 2006).

Studies demonstrate consistency across countries that parents' fears about children's safety determine children's engagement patterns (Coyne et al., 2006; Karsten & Leit, 2006; O'Brien & Smith, 2002). However, studies have also highlighted the social pressures of parents in Australian society, whereby parents feel individually responsible

for their children, compared to a **‘collective responsibility’** that was evident in German families, where communities share the responsibility for children (Tranter & Pawson, 2001). This individualism was evident in parents in UK, Australian and New Zealand studies. Given that Greene and Moane (2000) identify Ireland as presenting with some features of a collective society, it is difficult to ascertain to what extent parents experience this social pressure in Ireland, and is an aspect needing further research.

Parents’ values and assumptions on play itself is another influence. For some parents, play is viewed as meaning *‘productive activity’* (Garbarino, 1989, p. 28), and about getting things done (Thomson & Philo, 2004). In other studies, adults work to structure play time more than allow free play (Roe, 2006). Garbarino reflects that the drive towards productivity in parents translates into a childhood that is organised into structured after-school activities. Parents view structured play as a productive process and expect a return on their investment in terms of learning and development (Garbarino, 1989). He notes that for many, free play is seen as a luxury as a result.

Other adult perspectives can be seen as they relate to outdoor play. In Ireland, for example, there has been some concern at the relative lack of outdoor play (Duffy, 2007). Duffy explored the use of outdoors in an exploratory study²⁹ and found that little value was placed on the outdoors as a learning environment, resulting in low use of the outdoors (Duffy, 2007). Further studies confirmed the same issue. Kernan and Devine (2009)³⁰ found that negative attitudes towards the outdoors were viewed as being cultural, where time outside *‘was framed by some interviewees as culturally embedded, derived from the damp Irish weather and constructions of the Irish as indoor people’* (Kernan & Devine, 2009, p. 381). In a similar study in Wales, infant teachers use of the

²⁹ With ten preschool practitioners from rural and urban areas near Dublin.

³⁰ They conducted research on the role of the outdoors in 1,500 Irish childcare settings in order to explore influences on attitudes and perceptions of the outdoors among other things.

outdoors was dependent on good weather (Maynard & Waters, 2007), which resulted in some schools not using outdoor spaces from November to March.³¹ In both the Irish and Welsh studies, the outdoor environment was not seen as part of their cultural identity (Kernan & Devine, 2009; Maynard & Waters, 2007). This is in contrast to early childhood education in Norway, where the outdoors is used on a daily basis during winter and summer (Moser & Martinsen, 2010). So it seems that while weather is proposed to be the rationale for not being outdoors, it covers a deeper value system where the outdoors is not viewed as being important for learning.

Summary

Although much of the research in this chapter accesses the views of children in middle childhood, we can gain some insights into children's worlds and consider some important considerations for how this might apply to infants under two. Parents' values, attitudes and assumptions towards play and freedom in accessing the environment play a significant role in child-environment interactions. Governing this in contemporary living seems to be a shift towards a protectionist approach with a heightened concern for reducing risk. This may be related only to outdoor play beyond the home space, but it needs to be considered as a potential factor in the current study and will be explored in the next section. Indeed, given that adults orchestrate indoor and outdoor environments for infants, their attitudes and values play a significant role in determining whether an infant is facilitated or constrained in accessing these environments for play (Duffy, 2007).

Older children of middle childhood have communicated what is important to them regarding play places and spaces. At this stage in their lives, social interaction occurs primarily at community level in schools and play areas. Their need for informal spaces,

³¹ In this view, weather is considered as separate to the outdoor experience, rather than being part of it.

which are characterised by security, that include private areas along with public ones, and opportunities for challenge were identified as being important, but this view was different to parents' views of play spaces. Parents tended to view play as activity and often as a formal process, which coincides with the development of formal activity centres, and an increase in the use of structured afterschool activities. Yet children have reported favourite play activities to be informal and social, with the need consequently for play places that afford such opportunities. Play places and activities need to be considered related to what they afford children for challenge, risk-taking, engagement, interaction, and pleasure. From reviewing across these studies, it is also likely that children view all their environments as play sites.

In approaching research with younger non-verbal children, it is important to be guided by this insight to children's worlds: that their view of play and play spaces may be different than adults' views also. Being guided by parents' perspectives is not a primary source for understanding play choices in infants but is viewed as a valued contribution along with the child's actions, which demonstrate their choices when words cannot be relied on.

The next section addresses home environments of the home and family. Based on studies from the community, it is useful to consider whether some of these concerns originate in the home or during early years, and whether the same questions can be asked of home environments. For example: is there a similar issue about licences in the home for play and space use? Do parents employ a protectionist perspective to parenting across all places the child inhabits from home to school to community? What do home places mean for children and how do they use them compared to adults?

CHAPTER FOUR: THE PROXIMAL ENVIRONMENT OF THE HOME

INTRODUCTION:

In Chapter Two, the conceptual frameworks that underpin this study were outlined. Key concepts of ecologicalism, transactionalism, the Bioecological model, affordances and occupational development were identified and considered in their relationship to the study of person-environment interactions. Chapter Three addressed the social-cultural and community ecological contexts that shape children's lives from the broader perspective of the environment. This chapter now addresses the microenvironment of the infant, which refers primarily to the home. The microenvironment is where the microsystem processes take place:

A microsystem is a pattern of activities, roles, and interpersonal relations experienced by the developing person in a given face-to-face setting with particular physical, social and symbolic features that invite, permit or inhibit engagement in sustained progressively more complex interaction with and activity in the immediate environment (Bronfenbrenner, 1993, p. 15).

Using a transactional approach means there is a need to consider the elements that interact to support learning and development in this microsystems level, in relation to play and home settings. However, Valsiner argues that in ecological research, it is counterproductive to try and study every aspect of child development, but to select some aspect of it instead for the purpose of anchoring the researcher (Valsiner, 1987). Consequently, while it is obvious that many factors contribute to the person-environment relationship this research is anchored primarily to the physical environment, in relation to how it influences the child's learning which from a play perspective. The literature review therefore is considered from three perspectives: the physical environment, the child and the socio-cultural environment, emphasising the

physical environment primarily. The physical environment is considered in relation to home spaces, objects and toys. The child is explored in relation to learning, development and child characteristics. The third element - the social environment- is explored in relation to cultural influences, social capital, family routines, and parenting. It is now at the level of the microenvironment, that each of the five research questions come into play most specifically and will be kept in mind throughout this chapter.

HOME:

What is the nature of the home environment?

In order to address this research question, home environments in general need to be considered first. Home is considered as a place of major significance in studies of place and space. Home is a universal phenomenon that relates to having a place for rest and safety, privacy and freedom, comfort and order. Home can be described as '*a single place that allows (people) to meet their archetypal needs for shelter, storage, and territory to enable the tasks and occupations of sleeping, mating, grooming, feeding and excreting*' (Hamilton, 2004, p. 185). In this definition, home is a place rather than a building. This recognises that home can be many things: a tent, a caravan, an apartment that can consist of multiple diverse contexts (Nilsen & Rogers, 2005).³² Home consists of both private and public spaces, which serve as a context for meeting physical, social and emotional needs (Mayes, Cant, & Clemson, 2011).

The home can be viewed as encompassing three different levels of processes (Hasselkus, 2002). The first relates to sociocultural processes that govern organisation of the home, such as how and where furniture is placed, and cultural expectations for privacy or cleanliness. For example, in rural Irish homes, it was the norm to leave the

³² Nilsen and Rogers argue against trying to define home as a universal entity due to its varied forms around the world (Nilsen & Rogers, 2005).

front door open for visitors to enter at will. This cultural norm for socialisation rather than privacy is still in existence on some communities. The second process relates to individual processes where people individualise their homes to reflect interests and values from a more personal level. Family heirlooms may be displayed or choices of books evident. The third process relates to the physical process of change in the environment that accommodates to changing needs over time- for example to remove a cot and put in place a small bed as the toddler develops (Hasselkus, 2002). Homes could therefore be considered as macro to micro systems in themselves, in that they are influenced by societal, cultural, community and personal processes concurrently.

Home places themselves become places that have multiple meanings as we have seen in Chapter One. Attachment to place evolves from knowledge and beliefs about place, as well as from the experiences that occur there, from the past and present (Avriel-Avni, Zion, & Spektor-Levy, 2010). Homes consist of **temporal depth**- they hold a meaningful history for those people who have interacted with them in the past (Rowles, 2008). Rowles considers the home to be the location for *'the most sophisticated expressions of human relationship with the environment with respect to all levels of being in place: use, cognitive orientation, emotional affiliation, and vicarious involvement'* (Rowles, 2009, p. 84).

These strong emotional ties to home can be seen when people move to a new home, and are faced with a sense of disconnect, and a loss of identity until the new home begins to take form (Hasselkus, 2002). This new form typically evolves through personal expression: people use artefacts that bring memories from previous homes to new ones, to ensure a sense of continuity and maintenance of identity. So homes and artefacts within them combine to form a place of personal meaning for individuals and families:

a place where people can ‘feel at home’ which demonstrates the emotional meaning that is attached to home as a place of comfort and security.

In more extreme circumstances, when people find themselves to be homeless, there is not only a sense of loss and disconnectedness, but also one of ‘*severance from self*’ (Rowles, 2009, p. 84). The homeless person is under extreme stress to cope with their disordered lives that is a consequence of not having a place that provides security and comfort. In studies of homelessness in the USA, families with children were identified as the fastest growing group of homeless people at 40% (Hamilton, 2004). Due to the threat to young children in particular, programmes have been developed in the USA³³ to target such families at risk, which recognise specific need for infants under three to experience routine and familiar environments for fostering safety and security (Parlakian, 2010). Studies have shown that parents strive to create and maintain family routines as priority when homeless, in order to support close family connections and to preserve some cultural legacy (Schultz-Krohn, 2004).

Place and routines are therefore significantly linked. Being in place means having stability of routines, which is a ‘*product of the way in which we use the environment*’ (Rowles, 2008, p. 129). The home environment is used differently for different routines, with bedrooms typically being used for sleep and rest but not used during the day for example. For children, the development of stable routines is dependent on becoming familiar with family routines and places within the home, in developing a cognitive map of spaces and an orientation within home space so that it can be negotiated successfully. In considering place use such as in the home, routines therefore are supported and enabled by the environmental characteristics of the home, and are an important outcome of being in place.

³³ For example, as part of Early Head Start Programmes.

So what does home mean for children? Home is the dominant setting for children throughout childhood (Wohlwill & Heft, 1987). The home environment is also frequently the child's preferred place for play (Rodger & Ziviani, 2006). Place influences occupation, in this case play, and therefore play cannot be considered without due regard to where it takes place, how and what occurs, and how the activity is shaped by the environment. Play place preferences are more difficult to establish for infants, given that parents orchestrate and govern the play setting choices of infants primarily. While no studies were found in relation to the place preferences of toddlers or infants in Ireland, it is significant that in Ireland 89% of preschool children are cared for in a home environment as opposed to day-care settings (OMCYA, 2008b). This confirms that in Ireland, the home is likely to be both the primary play space and preferred play space in the daily life of infants.

Home as a physical environment:

What are the affordances of the physical environments that influence this developmental progression?

To date, relatively little research has been carried out in children's home settings which has been attributed to the emphasis historically on more traditional methods rather than ecological study (Tudge, Hogan, & Etz, 1999).³⁴ Yet studies comparing findings between homes and laboratories have identified a significant difference across these settings in relation to play, attentiveness, attachment, responsiveness and cognitive performance (Stevenson, 1989). Therefore, the environmental setting has an important influence on play behaviour and there is a need to prioritise research that has taken an ecological approach to exploring children's lives.

³⁴ They note that while naturalistic observational studies have been common in studying other cultures, this has not been the case in western industrialised culture (Tudge, Hogan & Etz, 1999).

The physical environment has been identified as a key factor in learning outcomes in children (Elardo et al., 1975; Wachs, 1978; 1979). Wachs' research explored physical features of the home including noise level, space for movement, sheltered areas, the presence or absence of audio-visual response toys, the ratio of room to people and the decorations in child's room. He identified five key features of the physical environment that are most closely related to cognitive development:

1. *Presence of a physically responsive environment*
2. *Presence of sheltered areas*
3. *The degree to which physical set-up of the home permits exploration*
4. *Noise levels and confusion*
5. *The degree of temporal regularity* (Wachs, 1979, p. 30).

However, of these, the key feature that supported cognitive development most was the presence of objects and spaces that allowed manipulation and exploration of the environment. Notably, features that least supported development were related to unpredictability of events and a lack of structure in the home.³⁵ This realisation of the strong influence of environmental predictability has resulted in a considerable amount of research focusing on the social environment with high emphasis on attachment and responsiveness of parents (Yarrow, Rubenstein, & Pederson, 1975).

The HOME assessment tool has played a prominent role in supporting home-based research and was developed in order to study stimulation in the home (Caldwell & Bradley, 1984). It includes items such as organisation of the physical and temporal environment, responsiveness of mother, and provision of play materials. For example, in Elardo, Bradley and Caldwell's research (1975) 135 infants were studied at six-months to identify whether the home environment was related to cognitive development, using

³⁵ Interestingly, while it was initially thought that families from lower socioeconomic contexts provided too little stimulation, this changed when studies identified that it may be more likely to be overstimulation (Stevenson, 1989).

the HOME assessment tool. Findings showed that there was a positive correlation between the home environment and performance on intelligence tests at age three. Furthermore, the feature that supported development most during the first year of life was related to organisation of the physical and temporal environment. For infants beyond the first year however this changed to provision of play materials and the mother's involvement in play as being more significant factor, with play materials being significantly correlated with positive long-term achievements for infants aged 12 months (Bradley & Caldwell, 1984; Elardo et al., 1975). This research has led to the hypothesis that the impact of stimuli depends on the degree to which it matches the child's level of development (Wohlwill & Heft, 1987).

However, a more recent study focused on exploring proximal processes more specifically and identified the need to separate out **setting** from **process** when researching home environments (S. Pierce, Alfonso, & Garrison, 1998). In their study, the HOME assessment (Caldwell & Bradley, 1984) was used to identify aspects of the home environment. Their research confirmed Bronfenbrenner's concern that by only exploring what is available in the environment, researchers fail to explore how the environment is used. For example, items assessed the availability of toys but not whether and how they are used or how frequently.³⁶ However, research using the HOME assessment has shown a significant link between the environment and cognitive development, based on the presence of materials. It may be that the HOME assessment captures discrete elements that underpin processes of interaction but in a tacit way. Further research is needed to explore these issues more specifically.

³⁶ The outcome of their study was to recommend changes to the HOME assessment to ensure it included aspects of proximal processes in the home environment (S. Pierce, Alfonso & Garrison, 1998).

Wachs' research contributes evidence for what he termed **environmental specificity** in relation to the highly specific nature of relations between development and the environment (Wachs, 1985, 1987), which refers to the theory that '*specific aspects of the environment predict only specific aspects of development, at specific ages, for specific classes of individuals*' (Wachs, 1985, p. 34). Furthermore, his research also identified some element of **organismic specificity**, where the impact of the environment is '*mediated by the characteristics of the individual child*' (Wachs & Chan, 1986, p. 36). For example, male infants were found to be more effected by noise levels and crowding than the female infants (Wachs, 1979). Other gender differences are reported for exploratory behaviour and in pretend play (Cherney, Kelly-Vance, Glover, Ruane, & Ryall, 2003). Wachs also found correlation between infant temperament and cognitive development, demonstrating the need to consider child characteristics as a factor when studying environmental features that impact on development and on mastery motivation (Wachs, 1987; Wachs & Gandour, 1983). Overall, researchers now acknowledge the embeddedness of infants in their specific environments, along with individual differences as accepted variables in ecological research (e.g. Adolf & Berger, 2006; Campos et al., 2008; E. Gibson, 2003)

The degree of freedom to explore the physical environment has also been a focus of home-based research. As we saw in Chapter Three, social geographers established how parents give (or withdraw) licences to their children to explore the outdoors. The same appears to apply to infants in the home. Research has shown for example that parents avoid placing their babies on their stomachs for floor play, due to their fear of Sudden Infant Death Syndrome and their desire to follow recommendations on sleep positioning (Mildred, Beard, Dallwitz, & Unwin, 1995). In other studies, slower motor development was noted in preschoolers who had been restricted in freedom to explore their

environments by being placed in infant seats for long periods for example (DeBarros, Fragosos, DeOliveira, Filho, & DeCastro, 2003). Similarly, Wachs (1975, 1979) found that early use of restraints such as a playpen was correlated with lower scores in developmental measures later in infancy. Licences parents give for exploration within the home therefore appears to influence child development, and need to be considered as a factor in the same way as was seen for older children in outdoor community environments.

Exploring the place-occupation relationship is an emerging area of research with children from an occupational science perspective also. Research has explored the role of play spaces and how play is influenced by different environments. For example, the physical space available to the child and the way in which this environment is arranged influences the quality of their participation (Rigby & Huggins, 1997). Rigby and Gaik (2007) observed 16 children with physical disabilities engaged in play in three different environments. Their findings highlighted the influence of the physical environment in determining and shaping play opportunities but it also emphasised the importance of availability and accessibility to play materials. They also identified that playfulness is not a stable characteristic but changes across settings, with children being most playful at home (Rigby & Gaik, 2007).

Pierce explored home physical environments in relation to space use in infants under 18 months (D. Pierce, 1996). Her theory of Infant Space Use identified four primary aspects of how infants develop interactions with objects and spaces in the home:

1. Gaze and visual play
2. Mapping and ranging home space
3. Stationary object play
4. Mobile object play

Specifically, Pierce identified mobile object play as a primary discovery of the study, where mobility is not related to simply moving from one play site to another, but movement being incorporated as part of ever increasing play schemes (D. Pierce et al., 2009). This has been explored more recently in other work, where the functional link between object and space play was confirmed (Karasik et al., 2011). Pierce recommended that issues related to affordances and material culture need further exploration (D. Pierce, Munier & Teeters-Myers, 2009). Her work is currently the most detailed study of play occupations and the home physical environments of infants and it informed both the design and focus of the current study of Irish home environments.

Objects for play and learning:

Studies of objects for play have ranged from describing what and how play objects are used, to identifying the influences of objects on play and development. One example of a descriptive contextual study is that of Giddings and Halverson (1981) who studied 39 preschool children to see what play objects were used and how often.³⁷ In their study, children engaged in toy play for about 20% of the waking time, compared to 7% of object play. Despite it being the summer, younger children played indoors for about 65% of the time, primarily choosing to play in family rooms rather than play rooms (Giddings & Halverson, 1981). In other cross-cultural studies of object play, differences in availability of toys³⁸ appeared to have no effect on play (Bloch, 1989).

Research shows that play materials facilitate a child's development specifically. This has been researched extensively through the study of object play and early manipulation which will be addressed in the next chapter. However, it is also useful to identify some

³⁷ In this study, objects were defined as any materials that were not toys, in order to explore whether preschoolers choose designated objects for play (i.e. toys) over other objects.

³⁸ In this study, Senegalese children had fewer commercial toys to play with.

particular characteristics of objects and object interactions themselves. For example, access to objects and play materials (such as magazines, books and small objects for manipulation) was found to correlate with developmental outcomes in infants (Wachs, 1976; Wachs & Gruen, 1971). Other research found that at 18 months, toys such as stacking blocks or action figures (fine motor and symbolic toys) had the greatest impact on development (Tomopolous et al., 2006). Their study identified that only some categories of toys are related to developmental outcomes compared to others but also highlight that no quantitative study has yet looked at the impact of toy categories on development.

In order to expand our understanding of the role of objects in child development Wachs consequently researched toys to explore which characteristics have most impact and identified four primary dimensions: **variety, availability, complexity and responsivity** (Wachs, 1985). These aspects will be explored next.

Variety relates to having a range of different toys or objects, and also the introduction of change (new toys) over time (Wachs, 1985). Evidence exists for the impact of varied toys on cognitive, language and exploratory development (Wachs & Gruen, 1982; Wohlwill & Heft, 1987). Longitudinal research on variety of objects has been carried out by Caldwell and colleagues also. In their HOME assessment, variety of play materials assessed at six months was positively correlated to measures of intelligence at three years (Elardo et al., 1975). Wachs and Gruen (1982) identified that the impact of toys on development is reduced unless they are changed over time also.

Findings in some studies suggest **availability** of particular types of environmental objects is most significant for certain aspects of development rather than having a

global impact (Wachs, 1985; Wohlwill and Heft, 1987).³⁹ In their study the link between object availability and development was most significant before nine months (possibly due to child being more self-directed after this) (Wachs & Gruen, 1982). As the infant becomes more independently mobile, the issue of availability seems to be less significant. Consequently, for older infants, availability is not as important as other factors such as variety or responsiveness.

Complexity of objects relates to the richness of stimulus information found in the home. Complexity of objects was explored by Yarrow, Rubenstein and Pederson (1975) in the homes of a sample of five-month old infants. Their findings identified factors related to complexity include: variety, multiple sensory stimulus, non-repetitive character and responsiveness of toys. They found that the richness of stimulus information in the home was positively related to cognitive development and exploration but was unrelated to language development. Further research at 13 months did not confirm the same pattern however, which may imply that richness in stimuli is more important for infants of five months than for older infants (Yarrow et al., 1983). Significantly, they remark that the study only identified the number of responsive toys available and not how they were used. Further research is needed to identify the relationship between how toys are used, which is directly related to the age appropriateness of the play materials for the child (Stevenson, 1989; Wachs, 1985). Furthermore, it is acknowledged that identifying optimal complexity of objects related to age is a challenge and until this issue is resolved, research findings on complexity of objects are inconsistent.

Responsivity of objects relates to the nature of feedback given by toys when manipulated by the child, with novel and responsive toys demonstrating a significant

³⁹ Which relates to environmental specificity.

link with cognitive and motivational development (Wachs, 1985). Through playing with responsive toys, the child explores objects by turning it about in his/her hands which leads to identification of specific features (affordances) and increases the ability to interact with environment. Wachs studies of objects in the home have confirmed this positive relationship between a child's cognitive development and the presence of responsive toys (Wachs, 1985). Furthermore, highly responsive toys appear to have a global influence on development, compared to variety of toys, which has a more specific influence on language (Wachs, 1985). This finding confirms that some characteristics of the physical environment have specific impact whereas others have global impact on development.

However, studies have also noted that moderately challenging tasks are more ideal for a child rather than highly challenging ones that can cause anxiety (Rigby & Rodger, 2006). This appears to point towards the issue of mastery as a core aspect of play interactions, whereby play is highly related to an infant's sense of agency and control over the environment (Wohlwill & Heft, 1987). Indeed, Clarke-Stewart (1973) found that the number of toys available at 17 months was positively related to measured competence in infants, rather than to measured intelligence. In this case, it is perhaps the mastery motivation that is most at play here rather than cognitive development as measured by intelligence. Mastery motivation and responsivity has been identified as closely inter-related in studies of infants growing up in institutionalised orphanages where play with toys dwindled after six months, with infants showing withdrawal from play objects. This withdrawal is viewed as both related to play behaviour and motivation (Daunhauer, Coster, Tickle-Degnen, & Cermak, 2010).

While there is an accepted basic minimum level of stimulation necessary for development (Degen Horowitz, 2000), there is also a recognition that individuals

demonstrate variability in development despite stimulation. For some children, objects may not be as influential in shaping their learning as they are for others. Wachs found that for some children, interactions with objects appears to be more prevalent than interaction with people. He contends that '*some infants are motivated to master object aspects of the environment while other infants are motivated to master the problem of eliciting desired reactions from persons in the environment*' (Wachs, 1985, p. 43). Similarly, children who are identified as visual learners in school tend to demonstrate a visual focus already in infancy (Morgenthaler, 2006). This highlights and confirms the view of child development as a dynamic rather than normative process (Wachs & Chan, 1986). Instead there is now a more realistic acceptance that while some global parameters exist in relation to influencing development, the ways in which these parameters shape development are specific in nature (Wachs, 1979).

Toys:

The study of material culture of childhood extends beyond examining influences of objects for play on developmental outcomes, towards exploring meaning and value of objects (Holloway & Valentine, 2000b). There is also a need to consider the sociocultural perspective, where objects support the introduction of the child into a specific cultures (Morgenthaler, 2006). Furthermore, these cultures are frequently influenced by commercialisation and globalised markets that have emerged from the development of specific objects or commodities for play, namely toys (Ruckenstein, 2010; Sutton-Smith, 1986). Children are subsequently influenced by sociocultural forces, resulting in global trends for toys such as Pokémon, Nintendo, or Happy Meal toys (Ruckenstein, 2010).

Research on toys specifically is relatively sparse to date, possibly due to assumptions about them having a diversionary role rather than a valued role of any significance in

children's' learning (Sutton-Smith, 1986). Toys and play are valued differently across time and cultures. For example, while digital toys are commonly valued in Japanese cultures, Ruckenstein notes that in Nordic countries, they are seen as unnatural. So, toys have cultural characteristics that may not translate globally (Ruckenstein, 2010).

Throughout history play materials have constantly changed, reflecting evolving attitudes towards children and play (Sutton-Smith, 1986). In a review of the meaning of toys in the USA, Sutton-Smith found four major contexts relating to toy use and meaning: family, technology, education and the market place, resulting in 'a *conflict between the teddy bear, the race car, the jigsaw and the video game*' (Sutton-Smith, 1986, p. 246). He found that in each context, toys are valued for different reasons, such as novelty factor or educational potential. However, in the home setting, he found that toys are largely provided for solitary play, and as Christmas gifts for children. In comparison, the opposite was found in education settings, where educators choose toys for socialisation primarily.

Toys are often chosen for the child based on their preferences also. For example, commercial toy stores frequently issue catalogues at Christmas, which results in children choosing toys themselves (Ruckenstein, 2010). Studies have shown play preferences to emerge as early as three months, with 90% of infants of one year having a preferred object (Case-Smith & Kuhaneck, 2008), while in preschoolers, small objects are known to be favoured (Morgenthaler, 2006). In an exploratory study of parents and infants play, Irish families reported choosing toys based on their own values as well as the child's interests (Coughlan & Lynch, 2011). However, they also acknowledged being influenced by commercial factors which results in choosing toys known to be popular. Finally, while parents continue to choose and purchase toys, there is little evidence that toys have a role in the play of infants under two years. Instead research

shows the significant place of object play rather than play with toys in this age group (Sutton-Smith, 1986).

Summary:

This section of Chapter Four has focused on the home environment and reviewed literature on the physical aspects of home and how they influence learning and development. Although studies have identified that physical environments have key attributes that influence cognitive development, other research confirms that these attributes cannot be universally applied. Instead, change and development is determined by multiple factors depending on specifics such as the child's characteristics or the nature of the physical environment and how it meets the needs of the child at that specific time in his or her life. However, it is also recognised that the infant needs a safe and secure social environment, before they are confident to explore the physical one (Bowlby, 1988). So while this study does not address social environments specifically, it originates from a position that assumes the social environment is one where the carer is emotionally present for the child and responsive to his or her needs. Once social requirements are met, infants are found to interact with the physical environment for up to 90% of their time (Clarke-Stewart, 1973).

Research on objects identifies that there are primary dimensions that influence child development: availability, variety, complexity and responsiveness. Of these, responsiveness and variety of objects are considered the most significant dimensions in influencing development with the former having a global influence (Wachs 1985). However, studies have also identified that some children are motivated towards object interaction while other are motivated more towards social interactions. This demonstrates again the specific nature of person-environment transactions, where child characteristics (such as responsiveness to the environment) have an important influence on play processes.

Many studies highlight the lack of research on **how** objects and toys are used. Although an affordance approach has been applied with some success to the development of a taxonomy for outdoor play, there has yet to be a similar development for play with objects, despite a call for research into this approach (D. Pierce, 1996; Wachs, 1985). Instead in studies of toys such as Giddings and Halverson's (1981), toys are simply listed and grouped according to type, which ignores how they are used. When observing children's play, it is very clear that objects are frequently used in varied ways, rather than for the intended purpose. For example, children often use storage boxes for a place to hide or to climb on. Particularly in relation to infants, research has shown that objects have a more significant role rather than toys in play interactions. Therefore, exploring infant play using an affordance approach offers a way of identifying play interactions irrespective of the nature of the objects involved.

These studies overall highlight the value of researching home as a physical environment and the need for further exploration of processes within the home in order to develop our understanding of optimal home environments for learning.

THE CHILD AS AN ACTIVE LEARNER

What is the developmental sequence of the child in relation to transactions with the physical environment of the home?

Historically, there has been an assumption that learning and development are different, which can be attributed to different theoretical perspectives on development (N. Hayes & Kernan, 2008; Siegler, 2000).⁴⁰ In contemporary research the separation of learning and development has lessened and there is a general agreement that learning and developmental processes consist of the same elements:

Modern research has made it clear that learning processes share all of the complexity, organisation, structure and internal dynamics once attributed exclusively to development (Kuhn, cited in Siegler, 2000, p. 27).

This reflects a shift in thinking that recognises learning as equally complex and dynamic as development (N. Hayes & Kernan, 2008). For the purpose of this study therefore, learning and development are considered to be the same and are used interchangeably.

In the microsystem, proximal processes are of primary importance as they are considered the ‘*primary engines of development*’ (Bronfenbrenner & Morris, 1998, p. 996). Proximal processes (Table 2.2) involve interactions between elements of the microenvironment, and are based on two propositions: that human development evolves through reciprocal interactions with the environment that are increasingly more complex over time, and that these processes of interaction in turn effect development. From this perspective, the child is viewed as an active learner, who influences and shapes his or her own learning through active engagement in the environment.

⁴⁰ For example, learning was considered as supplemental to development which was viewed as the driving force from one perspective, or that development was considered to be a result of learning, from another (N. Hayes & Kernan, 2008).

Research supports this view of the child. In a major review of research about the nature of early childhood development, Shonkoff and Phillips (2000) identified key characteristics of child development from birth to age five. These characteristics include the acknowledgement that human development is a dynamic and individualised process and that *‘children are active participants in development, and have an intrinsic drive to explore and master the environment’* (Shonkoff & Phillips, 2000, p. 4). Furthermore, researchers now agree that instead of infants being viewed as reactive sensory-motor systems, they demonstrate intentional behaviour even before three months of age (Trevvarthen, 2004). So this view of children being active participants can apply to even the young infant. The notion of the child being an active learner is therefore a corner stone in considering children’s learning and development.

Within this notion of being an active learner, there is an underlying assumption of agency that recognises the child as an active agent that can influence and shape its environment (Kuczynski et al., 1999). Kuczynski et al. remark that until the 1960’s, infants were represented as powerless in studies of social interactions and development, until research identified how in reality, infants shaped parents’ behaviour. Consequently, infants were reconsidered as having agency, with power to influence the environment.⁴¹ What results is a view of childhood that recognises bidirectional influences in interactions, which is therefore part of being a transactional view of person-environment interactions (Tudge & Hogan, 2005).

Shonkoff and Phillip’s (2000) review of research highlights that development is not an issue of genetics or heredity alone; it is an individualised process, dependent on interrelated, multiple factors that contribute to development (Shonkoff & Phillips,

⁴¹ Interestingly, there is a different understanding among disciplines on when agency first appears, with sociologists viewing it as being related to the appearance of language, as compared to developmental psychologists viewing it as being evident from birth (Knapp, 1999; Kuczynski et al., 1999).

2000). The child's genetics are instead viewed as a '*set of possibilities*' rather than determinants of development (Sameroff, 2009, p. 3). Multiple developmental pathways exist depending on many factors including the physical and social environment (Humphry, 2002). The concept of multiple pathways allows for a broader consideration of the variation in children's life experiences and contexts for learning, and acknowledges the perspective that development is a co-constructive process, influenced by the child's active role, within specific socio-cultural contexts (Tudge & Hogan, 2005).

Viewing development as a set of possibilities also has repercussions for child development theory and its application. In traditional developmental models such as Gesell's or Piaget's, children are considered to progress through fixed stages of development at typical ages or stages (N. Hayes & Kernan, 2008). When the dimension of alternative pathways is added to a view of typical development, an expanded perspective is needed. Katz and Chard (cited in N. Hayes & Kernan, 2008, p. 80) view this as a dynamic dimension of learning- that is sensitive to differing contexts and experiences of the individual child. Such contemporary views on early learning have in turn shaped curriculum development such as that in Ireland, where the Aistear framework is underpinned by a focus on the sociocultural context of development rather than on domains of development such as language or fine motor.

Child's characteristics:

From an ecological perspective of child development, the researcher is advised to shift thinking from a biological or cognitive level towards one of considering the personal characteristics that influence environmental engagement.⁴² Characteristics that need to

⁴² This perspective is derived from the realisation that some characteristics are not context-free; for example some cultures accept child behaviours that others do not..

be considered relate to those that are context-oriented, which were termed by Bronfenbrenner as *Developmentally Instigative Characteristics* (Bronfenbrenner, 1993, p. 11). These are defined as ‘attributes of a person most likely to shape the course of development for better or worse’ (Bronfenbrenner, 1993, p. 11).

Three types of characteristics are identified as important: **dispositions** (forces), **resources** and **demand** characteristics (Bronfenbrenner & Morris, 1998). These refer to the child’s responsivity and self-regulation of behaviour, to child resources such as knowledge and skills, and to personal qualities that invite or discourage reactions from the environment. In Bronfenbrenner’s view, dispositions are considered as forces that can enable proximal processes. Of these dispositions, some are developmentally generative dispositions whereas others are developmentally disruptive (see Table 4:1).

Table 4:1 Dispositions: Forces for shaping development (Bronfenbrenner & Morris, 1998, p. 1009).

Dispositions that interfere: active	Dispositions that are generative	Dispositions that interfere: passive
<ul style="list-style-type: none"> • Impulsiveness • Explosiveness • Distractibility • Inability to defer gratification • Resorts to aggression/violence • Difficulties in controlling emotions 	<ul style="list-style-type: none"> • Curiosity • Tendency to initiate and engage in activity alone or with others • Responsiveness to initiates by others • Readiness to defer gratification 	<ul style="list-style-type: none"> • Apathy • Inattentiveness • Unresponsiveness • Lack of interest in one’s own surroundings • Feelings of insecurity, shyness • A tendency to withdraw/avoid activity

Such dispositions result in selective responsiveness to the environment, with the development of more differentiated responses to aspects of the environment in early months of infancy. In comparison, demand characteristics relate to a child’s hyperactivity/inactivity or fussiness/happiness. From Bronfenbrenner and Morris’ (1998) perspective, these three types of characteristics both influence development and in turn are shaped and influenced by the processes in which the child engages. They are not viewed as primarily innate characteristics that cannot change. Furthermore,

regarding engagement with the physical environment, dispositions and resources are considered to play the most significant role in influencing development rather than demand characteristics (Bronfenbrenner & Morris, 1998).

In other literature, terms such as disposition, temperament, and personality are used in differing ways, which leads to confusion. Considering temperament, Bronfenbrenner and Morris' child characteristics appear to correlate with literature on temperament to some extent. Temperament has been defined as '*constitutionally based individual differences in reactivity and self-regulation, in the domains of affect, activity and attention*' (Rothbart & Bates, 2006, p. 100). More specifically, temperament is considered to include three dimensions that are currently accepted: negative reactivity, approach or inhibition, and self-regulation (Sanson et al., 2009). Temperament appears to be well-developed by age three, and can predict personality at age eighteen (Caspi & Silva, 1995). Concepts of temperament and personality are closely related, with temperament being viewed as a childhood characteristic, while personality is viewed as an adult one (Deal, Halverson, Havill, & Martin, 2005).

It seems therefore that temperament as currently outlined in the literature, is closely related to Bronfenbrenner and Morris' view of disposition and demand characteristics. Disposition and demand characteristics refer to behaviours associated with reactivity, self-regulation, responsivity, which as we have seen above are considered dimensions of temperament. Accordingly, studies on temperament and self-regulation are useful to inform a Bioecological perspective. For example, findings from an Australian temperament study, shows that temperament influences a child's ability to adjust to school settings and therefore impacts on learning (Sanson et al., 2009). Moreover, in researching cognitive development of six-month old babies, temperament was found to be a factor (Wachs & Gandour, 1983). Babies identified as having adaptable, easy

temperaments were more reactive to the environment. Consequently, Wachs and Gandour contend that this is evidence of organismic specificity: that individual differences shape development. Wachs furthermore identified that the same stimulation will not have the same impact on all children due to this organismic specificity: *'the impact of the environment will be mediated by characteristics of the individual child'* (Wachs, 1985, p. 36).

In the Shonkoff and Phillips review, self-regulation was considered to underpin all behaviour. As a result, self-regulation is regarded as fundamental to contemporary understanding of child development (Sameroff, 2009) and development can be viewed as a process of increased self-regulation (Shonkoff & Phillips, 2000).⁴³ Development is therefore viewed as an *'increasing capacity for self-regulation, not so much in the specifics of individual behaviours but in the child's ability to function more independently in personal and social contexts'* (Shonkoff & Phillips, 2000, p. 26). Combining knowledge of neurology with child behaviour, self-regulation is considered in how the child reacts to events, regulates his/her reaction, and then recovers from it. It includes aspects of arousal, emotions, and attention. For example, if an infant has difficulties in self-regulation, this may be apparent when the infant sees a toy it wants to play with, and cries demandingly for it even when it sees the mother coming to get the toy (this is also an example of disruptive disposition according to Bronfenbrenner & Morris). Children with good self-regulation can delay gratification and can control their own reactivity to events. Such characteristics are also examples of generative dispositions. The ability to self-regulate arousal, emotion and attention consequently contributes in the child's development of motivation and persistent learning behaviours (DeGangi, 2000).

⁴³ Self-regulation can be viewed as a continuum from basic to complex, which includes physiological and behavioural regulation at a basic level (for example, development of sleep-wake cycles) to more cognitive regulation (such as impulse control) at a complex level.

Research from a biological perspective which relates to the dispositions aspect of child characteristics has included looking at arousal and motivation as it relates to play. Research has identified ethnic differences in reactivity to sensory stimulation between Irish babies, and North American and Chinese babies (Kagan et al., 1994). In their study of four-month olds, Irish babies were shown to be less reactive to negative situations than American babies, as observed through their fretting, crying and motor activity behaviours. Consequently, researchers contend that ethnic composition of participants needs to be included in analysis of infant studies of self-regulation. Overall, while there is now a recognised argument for the inclusion of self-regulation as an essential aspect in researching child characteristics, there has yet to be a clear taxonomy of how it develops in childhood.

So, self-regulation and temperament are closely related to Bronfenbrenner and Morris' child characteristics. However, regarding disposition, another perspective exists that may be more encompassing than Bronfenbrenner and Morris' concept. Disposition has also been considered in relation to how children engage with the environment- trends of behaviour, habits of mind, and mastery motivation (Katz, 1993). Katz contends that teaching knowledge and skills is not enough-there is a need to consider disposition for learning (Katz, 1993). She defines dispositions as:

'A pattern of behaviour exhibited frequently, and in the absence of coercion, and constituting a habit of mind under some conscious and voluntary control, and that is intentional and oriented to broad goals' (Katz, 1993, p. 16).

This view of disposition identifies an approach to the world that relates more to patterns of behaviour and attitudes towards engagement, rather than simply traits of temperament. It is linked to consideration of inclinations towards learning, and habits of mind (Claxton & Carr, 2004). In this way, it appears to expand and develop further the conceptualisation of child characteristics as outlined by Bronfenbrenner and Morris by

capturing the **process** of how the characteristics of the child influence behaviour.⁴⁴ Claxton and Carr have used this view of learning dispositions as an alternative approach to teaching learning (Claxton & Carr, 2004). They contend that learning can be most effectively supported through the provision of learning environments that are ‘potentiating’- where teachers not only afford or invite engagement in learning opportunities, but actively stretch the child’s abilities and promote learning dispositions. This view of disposition offers an applied perspective on Bronfenbrenner and Morris’ approach and adds some further insights into how a child’s characteristics can influence learning.

The disposition for learning has been also studied in infancy, resulting in research on intersubjectivity, that relates to the theory that infants’ play is linked to a disposition to share and tune into basic emotional states of others (primary intersubjectivity) which leads to a natural state of learning (Trevarthen & Aitken, 2001).⁴⁵ Infants are born with an innate intersubjectivity according to Trevarthen, showing a cultural intelligence from birth (Trevarthen, 2011). Hence, intersubjectivity can be considered to underpin infants’ motivation for learning.

A common theme in all of these perspectives is one of motivation. Mastery motivation is defined as behaviour that involves ‘*striving for competence, manifested in attending to the environment, attempting to acquire information about it, and persisting in goal-oriented activities*’ (Yarrow et al., 1983). In Yarrow’s view, competence is not concerned with **achievement** of success, but in **striving for** success, and therefore it is about the process and not product of behaviour. Consequently, play and developing

⁴⁴ For example, if a child presents with inattentiveness (Bronfenbrenner’s view of disposition), then the child’s habit of mind and pattern of behaviour is likely to be one of unpredictable engagement in activity (Katz view of disposition).

⁴⁵ In studies of infants from birth to 18 months, Trevarthen identified stages of development to include primary intersubjectivity, ritual games and secondary subjectivity.

competence can be considered as part of the same process (Garbarino, 1989). Early research assumed mastery motivation to be ‘undifferentiated’ in infancy (Wachs, 1987), but in other work, infants by 12-months of age were found to present with varied forms of mastery motivation that related to object mastery, social mastery and social-object mastery (Wachs & Combs, 1995). In infants, Wachs defines object mastery as being positively associated with *‘physical-environment items involving the availability, amount, and novelty of objects and toys in the home, particularly objects that are responsive to the child’s actions’* (Wachs, 1987, p. 783). Researchers have identified that mastery motivation includes several components related to object use, practising sensorimotor skills and problem-solving (Yarrow et al., 1983). Their research identified a link between cognitive development and motivation especially with exploratory behaviours in infants of six months.

Summary:

In summary, the literature on aspects of child characteristics is complex and varied depending on conceptual understandings of disposition, temperament, and self-regulation, and includes a focus on attention, emotion, arousal, motivation, reactivity and inhibition. In relation to learning, aspects of these findings have been used to develop theories of intersubjectivity and of learning dispositions, which emphasise habits of mind and mastery motivation. In relation to play, research is finding a link between child disposition and self-regulation, and play behaviour. Consideration of child characteristics such as these outlined above addresses the Person aspect of PPCT (Bronfenbrenner & Morris, 1998), which underpins this current study and contributes to an understanding of how to view the child in ecological research. The next section addresses the context of the social environment.

THE SOCIAL ENVIRONMENT OF THE HOME

What are the characteristics of the transactional process between child and environment?

The third element in the triad of child-environment interaction is the social environment. In relation to this study, this pertains to the home and to the family primarily. Child development is influenced by the social environment through human relationships and cultural influences (Shonkoff & Phillips, 2000). From Bronfenbrenner's perspective, child development occurs through '*microprocesses in a macroworld*' (Bronfenbrenner, 1993, p. 31). Consequently, it is vital that research on child development considers cultural characteristics as an essential aspect of any ecological study.

Mothers are typically the primary carers of their infants and provide infants with their first close human relationship in most cases. Mothering is defined as physical and psychological nourishment and protection of children which occurs in the context of unpaid work and pay in families (Primeau, 2004). It has been viewed as being driven by three universal demands of children: to protect, to nurture and to enable or educate in preparation for taking a place in society (Esdaile & Olsen, 2004). Furthermore, mothering is a learned occupation that is socially constructed through the social environment in which it occurs (Llewellyn, Thompson, & Whybrow, 2004).

The social environment and mothering has been researched in occupational science, in relation to cultural values in mothers' construction of daily routines (Kellegrew, 2000), the physical day-to-day care of young children (Griffin, 2004), management of home space (D. Pierce & Marshall, 2004), activism (Llewellyn et al., 2004) and mothering from a social, economic and historical context (Francis-Connolly, 2004). Studies have

shown that mothering occupations are enfolded occupations, characterised by concurrent tasks being carried out, for example, cooking a meal while guiding the infant's play (Bateson, 1996). When considering children's occupations, in most cases they are carried out in the presence of others leading to the notion of 'co-occupations' (D. Pierce, 2000).

Co-occupations such as childcare tasks are universal in nature, involving daily care routines (such as feeding and bathing), along with the emotional responsiveness that carers provide to comfort the baby and get them to sleep (Hamilton, 2004). However, sociocultural differences exist within the universality. For example, in some cultures washing can be for exercising as well as hygienic purposes (Adolf et al., 2010). This symbiotic relationship between social and cultural influences is frequently considered as a developmental niche (Super & Harkness, 1986). The developmental niche refers to a framework for exploring social-cultural settings, which involves three main subsystems: *'the physical and social setting in which the child lives culturally regulated customs of childcare and childrearing, and the psychology of the caretakers'* (Super & Harkness, 1986, p. 552). From this perspective, mothering practices are inextricably linked to socio-cultural settings. Bronfenbrenner's Bioecological model takes a similar stance of viewing the layers of influence but with more emphasis on the physical and social synergistic interactions, resulting in what he terms the 'ecological niche' to emphasise the processes involved in contextual interactions (Bronfenbrenner, 1993, p. 19). In both frameworks, attention is placed on the importance of social-cultural influences such as parenting styles and attitudes, community and societal values.

This section therefore covers a range of influences to understand the characteristics and nature of the social environment. The child's ecological niche needs to be considered

from different levels as we have seen. Cultural customs and habits will be explored, followed by the parents' characteristics and their influences on play and childrearing.

Cultural influences:

Culture can be defined as the passing on of specific attributes across generations related to the given culture based on beliefs and values, which are evident in the habits, rituals and practices of daily life (Shonkoff & Phillips, 2000). Regarding early childhood, examples of cultural attributes can include parenting goals and expectations for their children, values related to routines and discipline, gender roles and beliefs about play and learning. For example infants in Yugoslavia are held less than infants in the USA, and infants in the USA are held less than infants in the Kalahari Desert (Stevenson, 1989). Observations of people's behaviours therefore require some interpretation of the meaning of the activity from a cultural and social perspective to enable an understanding of human behaviour (Rogoff, 2003). Behaviour is not context free, and for the observer, it requires close attention to personal assumptions about what is also acceptable behaviour, given that some cultures accept behaviours that others do not (Bronfenbrenner, 1993).

Cross-cultural studies of play have shown that some cultures (such as Guatemalan and Mayan cultures) do not value play as a family activity, and hence do not orchestrate play activities between parent and child (Bazyk, Stalnaker, Llerena, Ekelman, & Bazyk, 2003; Rogoff, Mistry, Goncu, & Mosier, 1993). In comparison, Indian parents in New Delhi played with their children for enjoyment in contrast to American parents who stressed the cognitive values of play (Roopnarine, Hooper, Ahdmeduzzaman, & Pollack, 1993). In other cultures (such as the USA and Ireland) play is considered important to support child development, with a prioritisation of play as the preferred

route rather than direct teaching in infancy (Bornstein, Haynes, Pascual, Painter, & Galperin, 1999; NCCA, 2009).

Through studies of cultural characteristics, it is possible to determine which aspects of development are universal and which are specific to cultural variation (Bornstein, et al., 1999). For example, studies of motor development have shown quite significant differences in development across cultures (Adolf et al., 2010).⁴⁶ It was found that motor skills developed sooner in infants in some African countries compared to infants in the USA, highlighting different influences of childrearing practices. It was significant to the researchers that the infants who were progressing most were from resource-poor cultures compared to resource-rich society in the USA (Adolf et al., 2010). In these African societies, infants were being held, carried and placed differently in daily routines which appeared to influence early emergence of head-control for example. So cross-cultural studies have shown that differences exist between children and families, not only in play but also in skill development, which appear to be related to opportunities and affordances in cultures for enabling development (whether directly or indirectly).

Collectivism- individualism has been considered as one way to explore cultural difference. It refers to both ends of a spectrum of societal values, where an individualistic society values and promotes independence and autonomy, compared to a collectivist society that values social interdependence more (Bornstein et al., 1999). Using a Hofstede scale, Bornstein et al identified that USA society scores highest for individualism compared to 20 other countries. These findings were characterised in their study of play between USA and Argentinean cultures where Argentinean mothers tended to emphasise socialisation in their play compared to USA mothers who focused

⁴⁶ Which was considered surprising initially due to the acceptance of universal application of typical developmental milestones such as Gesell's or Bayley's scales.

on functional use of toys and independence⁴⁷. Studies of cultural characteristics show that individualism is valued typically in European and North American society compared to collectivism in Asian and Latin-American societies as evidenced through sleep studies (Shonkoff & Phillips, 2000). Societies that value individualism tend to promote separate sleeping arrangements for infants from early on, compared to other societies where infants frequently co-sleep with parents for a number of years.

In studies of parental responsiveness to infants, cultures that are deemed more collectivist in nature, use more physical contact and stimulation than individualist cultures that rely more on object play and visual contact (Kartner et al., 2008). In their study across eight cultures internationally, researchers found that vocalisation as a response to infants' distress was a universally accepted primary response, with touch as the second most common. However, in both Cameroon and Los Angeles, touch responses were used as frequently as vocal responses, despite these settings being different in terms of the collectivist-individualist continuum. So while this perspective on culture is useful to differentiate values and predict behaviours, it needs careful application, as the reality is that cultural differences exist **within** as well as **between** societies (Goncu, Mistry, & Mosier, 2000).

Irish cultural characteristics appear to still present some aspects of collectivism despite rapid changes during the years of economic success (Greene & Moane, 2000). However, part of this rapid change has included changes in the fundamental work practices of mothers, who are more likely now to be working full-time and possibly in places away from where the extended families are. The impact this has on cultural and

⁴⁷ Interestingly, in studies of families of children with special needs and early intervention, it was noted that families from a collectivist culture are required to be significantly involved in the intervention, compared to individualist cultures (Fitzgerald, 2004).

societal values has yet to be determined, and is constantly in a state of change. So it is perhaps more useful to recognise culture as a dynamic aspect of life, using the idea of a 'cultural script'. Cultural scripts are viewed as ways of explaining and describing cultural practises, that recognise their changing nature but help an understanding how culture shapes our lives: *'the key to better understanding other cultures may be the ability to elicit these cultural scripts from families and to be more aware of how our own scripts affect our work'* (Machinot, 2008, p. 3).

Social capital

Cultural scripts include consideration of how families engage in their communities, as part of learning and being a parent, or in other words to explore the social capital of a community. Social capital is defined as the processes and resources available (both material and immaterial) to families and individuals through their local social ties (Nichols, Nixon, Pudney, & Jurvansuu, 2009). In researching social capital, the central issue relates to social processes (Tseng & Seidman, 2007). Six processes of social capital have been considered as applying to children and family research: participation in community activities, neighbourhood, family and friend connections, proactivity in social contexts, feelings of trust and safety, and tolerance of diversity (Farrell, Tayler, & Tennent, 2004). These six processes were used by Farrell et al to explore children's experiences of social capital⁴⁸, who found that social capital was linked to the physical environment, being generally higher in urban rather than rural communities for children.

Nichols et al. explored parents' social capital in a twelve month Australian study to identify how and where parents accessed information about child development. They identified that the most used resources were friends and family members, followed by

⁴⁸ This study was carried out with 138 Australian children aged from four to eight years.

pamphlets and parenting magazines, followed by media and internet resources.⁴⁹ Least used resources included workshops at school, professional experience and studies related to working with children. Results indicate that resource-seeking is influenced by parents' perceived need in relation to their child's development, and their own values, with personal networks being most important in accessing resources (Nichols et al., 2009).

Although social networks appear to play a significant role in social capital, they also can have a negative influence. In other studies social networks have been found to contribute to the stress of families who are already experiencing socioeconomic pressure, illness or poor confidence (Bronfenbrenner, 1986). Bronfenbrenner recommends that understanding the processes involved are key to understanding how this may occur. Overall, from a parent's perspective, it seems that the social processes of most benefit commonly involve personal networks rather than material resources. However, in order to determine social capital processes for Ireland, more specific exploration would be beneficial.

Habits, routines and rituals:

Daily play events occur in the proximal environment within a temporal context of rituals, routines and habits. In the home, the need for predictable routines and habits in a stable, organised environment is considered as essential (Bronfenbrenner, 1993). Within the literature, there is no consensus on definitions and the differences between ritual and routine, possibly due to the individualised nature of family systems of organisation (Fiese et al., 2002). However, researchers have identified nine categories related to habit, routine and ritual based on how these constructs are explored from a neurological to a macrosystems level (F. Clark, Sanders, Carlson, Blanche, & Jackson, 2007). Of

⁴⁹ With web-based searches only being 56% most popular compared to friends being 86%.

these nine categories, the most relevant for this study relate to **habit as everyday activity, habit as routine, and habit as ritual**.

Everyday habits involve simple, everyday activities that are typically enacted without much thought due to their repeatable, automatic nature. In infants, all activities are new however. They are going through the processes of developing repeatable behaviours that will become automatic over time. For infants, these everyday activities are part of the routines of daily life that mothers are orchestrating to support patterns of self-regulation of sleep, feeding, changing and so on. 'Self-regulation' gives the impression that regulation is a property of the individual, but self-regulation can only occur if there is a social context that is engaged in co-regulation (Sameroff, 2009):

Even really functional physiological self-regulation of sleep, crying and attention is augmented by caregiving that provides a child with regulatory experiences to help him or her quiet down on the one hand and become more attentive on the other (Sameroff, 2009, p. 11).

Infants rely on carers specially to keep life predictable with regard to feeding and caring habits, resulting in physiological routines being regulated, and the consequence of the infant experiencing a safe, secure social environment (Bowlby, 1988).

Routines are more complex habits of interactions that repeat over time and have been found to be important in supporting developmental outcomes, health and well-being in children (Fiese et al., 2002). In their review of literature on ritual and routine across 32 studies, the most common routine was dinnertime, followed by bedtime and chores. Other studies have shown it is the sustainability of these routines rather than the presence of stimulating home environments that appears to be most significant (Gallimore, Weisner, Kaufman, & Bernheimer, 1989). For example, regular sleep and meal times have been related to cognitive development (Wachs 1979). However, studies have also shown that family routines are less present in families of young infants due to

the demands of trying to establish regular feeding and sleeping habits (Spagnola & Fiese, 2007). This most clearly shows the transactional nature of routines, whereby the dynamic interplay between each individual is what eventually shapes the nature of family routines that emerge. It also highlights that routines emerge through a developmental process in themselves.

The transactional influences on establishing routines extend also to cultural influences. For example, in a study with 200 families in the USA, researchers guided families to alter routines towards more developmentally supportive ones for their children (Weisner, Bausano & Kornfein, 1983). Many families reverted to routines that had more relevance to their own sociocultural settings despite trying to change. This demonstrated the highly embedded nature of cultural routines and the need to work within them rather than attempt to change them as an approach to working with families (Gallimore & Lopez, 2002). In their studies of ecocultural factors, researchers have identified the close link with routine and social capital, as determinants of positive environments for children with special needs (Nihira, Weisner, & Bernheimer, 1994).

There is a strong link between well-being and the difficulties in the organisation and orchestration of routines (Cronin, 2004; Donovan, VanLeit, Crowe, & Keefe, 2005; Kellegrew, 2000; Larson, 2006; Segal & Frank, 1998). This is hypothesised to be related to challenges some families experience in trying to implement routines, specially in families of children with special needs (Larson, 2000). In her study, Larson explored how six mothers of children with disabilities orchestrate their daily routines.⁵⁰ Mothers in the study linked their ability to provide routines as central to their sense of being a good mother, and therefore to their well-being.

⁵⁰ The processes identified included planning, organising, balancing, anticipating, interpreting, forecasting, perspective shifting and meaning making (Larson, 2000).

Rituals and customs emerge from routines which have specific cultural or symbolic meaning, and are usually shared within communities (F. Clark et al., 2007). Typically, family rituals can be classified as family celebrations, family traditions and patterned family interactions (Fiese et al., 2002). In a review of research on rituals in the USA, the most common rituals studied were birthdays, followed by Christmas, family reunions, Thanks-giving and Easter, with such occasions being noted as important due to family contact and togetherness involved (Fiese et al., 2002). Although similar research has not been conducted in Ireland, Hallowe'en is a common ritual but not Thanks-giving. Therefore rituals have meanings that are specific to cultural settings.

Studies of family rituals and routines show that both contribute to and influence the child's relationships and socialisation overall (Fiese & Parke, 2002). Given this knowledge, there is a need to consider families as a unit in research, because rituals and routines only occur through involvement of multiple family members (Fiese et al., 2002). Furthermore, there is a need for routines and rituals to be identified and described as they occur and are operationalised within each specific sociocultural environment.

Parent characteristics:

Bronfenbrenner and Morris identified three personal characteristics (forces, resources and demand characteristics) that relate to the Person (in PPCT). This 'person' includes the parent as well as the child. So, consideration of the parent characteristics as they relate to forces, resources and demand are required.

While Socio Economic Status (SES) is a common measure of family resources in research, it has not yielded a strong correlation with influencing development as such (S. Pierce et al., 1998). Indeed, research has now shown that when genetic similarity is

controlled, that siblings are in fact very dissimilar despite being reared in the same environment (Turkheimer & Waldron, 2000). Bronfenbrenner and Crouter (1983) advocate for research designs to consider using measures related to the dynamic nature of child-environment transactions instead of using SES. This refers to considering characteristics that most strongly influence development, such as quality of the home environment, the routines and organisation of the home, parent values and attitudes towards childrearing, and the kinds of networks linked to the family (Nihira et al., 1994). While these factors could be viewed as a direct result of mothers' level of education (which is a typical SES measure) they more directly measure the impact of contextual elements on child development (Bono, Bolzani Dinehart, Dobbins, & Claussen, 2008).

Resources also refer to skills and abilities that a person has, which in this case relate to parenting abilities, attitudes and values. Parenting practices are influenced by shared practices in communities (Bornstein et al., 2008). In a survey of cultural influences on parenting in the USA, researchers found that African American parents did not value routines as much as Hispanic parents did (Spicer, 2010). This survey⁵¹ also identified the wide range of different expectations about when a child should be expected to take turns, or to understand emotions. The differences between cultures in the same country highlights that these differences exist independent of the majority culture within a geographical setting. Therefore, parental abilities are shaped by both community and cultural influences.

The parents' own upbringing also has been identified as a major influence on how adults parent their own children (Lerner & Ciervo, 2010). Parental responses to their infants differ based on their ability to communicate with them and on meanings they

⁵¹ Of 1,615 parents of children from birth to three in the USA.

attribute to this behaviour from their own social and cultural experiences (Brazelton & Cramer, 1990). Varying levels of parental participation have been widely reported in different cultures, based on different beliefs about play, identifying that parents take on different roles in play also, as that of teacher or playmate (Parmar, Super, & Harkness, 2004).⁵²

Exploring parenting approaches is therefore vital for understanding the nature of transactions between child and carer. One of the most influential researchers in this field has been Baumrind, who first identified three main types of parenting styles: permissive, authoritarian and authoritative based on child characteristics (Baumrind, 1966, 1967). Children who were most self-reliant, content and self-controlled were parented by demanding parents who were also warm. These parents were described to have an authoritative parenting style, which combined positive approaches with control and encouragement for striving (Baumrind, 1971). Authoritarian parenting styles in contrast was evidenced by parents who were detached and controlling, with children who consequently demonstrated withdrawn and distrustful behaviour. Finally, the permissive parenting style related to non-controlling but warm parenting, with children who demonstrated the least self-control and exploration.

Irish research has explored parenting styles and discipline.⁵³ Parents scored higher on all aspects of authoritative compared to authoritarian parenting styles, except for those who had children younger than age four. These parents typically used less reasoning and less authoritative parenting styles as a result of the age of the child (Halpenny, Nixon, & Watson, 2010). In this research, parents also reported changing their disciplinary habits: the majority of parents reported not using physical punishment on

⁵² Parmar, Harkness and Super (2004) conducted a qualitative research study with 48 parents across two cultures (Asian and USA) regarding their participation in their child's play.

⁵³ In a telephone survey with 1,353 women and men, who had children from age two to 18 years.

their own children despite having experienced it frequently themselves as children. It seems that while some research shows the difficulties in changing parenting practices and routines (Gallimore & Lopez, 2002), some aspects of parenting can be influenced by contemporary social and cultural expectations.

Gender is another characteristic that plays an important role in influencing parental interactions. For example, fathers were found to engage in more physical play with preschoolers compared to mothers (Barnett & Kleiber, 1984). This has been confirmed in other studies where mothers tend to play more with objects also than fathers (Belsky, 1979). However, play style can differ among parents of the same gender. In a longitudinal study of infant-mother dyads, Clarke-Stewart found that mothers presented with different play styles, demonstrating characteristics of responsiveness based on materialness, verbalness or physicalness. These aspects described which mode of interaction appeared for them to be their primary focus. Her study identified therefore that parents' own preferences for interactions is an influence on the play process also (Clarke-Stewart, 1973).

This leads us to consideration of the nature of social play in families, and the parent's role in creating play environments for children; not only the cultural context but how they enable their child's play and learning opportunities. The environment may afford many opportunities (J. Gibson, 1977) but unless the parents orchestrate opportunity also, then the dynamic learning environment does not exist.

Summary

This chapter set out to explore each element of the microenvironment of the home: the physical environment, the child and the social environment. Evidence from infant development studies was explored in relation to the home, object and toy use. Then infant characteristics were identified and dimensions such as disposition, self-regulation, mastery motivation and agency addressed. In relation to the social environment, parenting styles, routines and rituals, social and cultural influences were explored. While the social environment clearly has a significant influence on the child, research shows that so also does the physical environment. However, studies on objects and toys of the physical environment have frequently been viewed as less important than studies of the social environment, based on the assumption that the physical is mediated by the social environment (Wachs, 1985). Wachs argues that the evidence for the primacy of the social environment is not strong:

Overall, available evidence seems to support a conclusion discrepant from popular belief, namely that the physical environment is not subordinate to the social environment, and must be considered as a unique influence upon development (Wachs, 1985, p. 34).

Consequently, two main areas for future research have been recommended: to identify physical features that support development most and least, and to explore to what extent solitary activity with the physical environment supports psychological development (Bronfenbrenner & Morris, 1998). While this call was made over a decade ago, the research in this field is still only emerging and is the focus of the next chapter.

CHAPTER FIVE: PLAY AND LEARNING

What is the nature of play in the home environment?

In order to explore the nature of play in home environments, play itself needs to be defined and explored as it relates to learning, and in relation to infants. Learning and development cannot be considered without exploring the role of play: '*Play is the first learning in which members of our species engage*' (Burke, 1996, p. 414). However, play has not always been viewed as central to the child's learning. Instead, precedence has historically been placed on cognitive development instead of play in early learning programmes for example in the USA up until the 1990's (Zigler & Bishop-Josef, 2009). However, in contemporary Ireland, play has become a focus of core policy development and guidelines for good practice in early childhood (Chapter Three). Play is recognised as playing a key role in both frameworks for Early Childhood, where play is viewed as central to learning and development (CECDE, 2006) and as a context for early learning (NCCA, 2009).

Play is difficult to define and can be defined from many different perspectives, resulting in multiple definitions rather than one. A universally accepted or agreed term has been elusive (Rigby & Rodger, 2006). There is a dilemma in research in finding a balance between careful definitions in order to accurately research the nature of a phenomenon, but without slowing progress on theoretical development (D. Pierce, 2009). Both Parham and Pierce argue for the usefulness of many definitions to enhance the richness of theoretical development (Parham, 2008; D. Pierce, 2009). However, working with multiple definitions can lead to a position that lacks direction and focus (Weisler & McCall, 1976).

While play does not have a universally accepted definition, the definition used by the Irish National Play Policy is considered as useful for this study: '*Play is freely chosen, personally directed, intrinsically motivated behaviour that actively engages the child*' (National Children's Office, 2004, p. 11). This definition emphasises play in terms of characteristics of behaviour. Other characteristics of play have been identified that include a focus on process rather than product, with freedom from externally imposed rules (Rubin, Fein & Vandenberg, 1983). So although play is difficult to define, play has common characteristics that can generally be found across the literature: intrinsic motivation with emphasis on process, freely chosen where the players are in charge of their own actions, enjoyment and pleasure (Parham, 2008), with three core elements that can be evaluated: internal control, intrinsic motivation and freedom to suspend reality (Skard & Bundy, 2008).

Other characteristics often debated include spontaneity, active engagement, and non-instrumental, i.e. something that is not serious. Parham argues that active engagement is a limiting characteristic, as it does not allow for consideration of more passive forms of play such as daydreaming, which maybe a form of playing with ideas (Parham, 2008). From this perspective, active engagement is known primarily to the player rather than being something that is observed. Therefore, play as an occupation is determined most accurately by the person who is experiencing it himself or herself.

These attributes of play have been viewed as presenting a concept of **playfulness**. Playfulness is viewed as a play disposition (Skard & Bundy, 2008) which separates *being playful* (play behaviour) from a *play taxonomy* (play type). This highlights that the word play is used interchangeably as both a verb and a noun, which contributes to difficulties in a shared understanding of meaning (Fromberg & Bergen, 2006) but also contributes to a shared acknowledgement of the complexities of play.

Playfulness has been the focus of attention in play theory due to its link to coping and adaptive behaviours, making it potentially one of the most important aspects of play (Skard & Bundy, 2008). In a study of playfulness of preschoolers, Knox identified that playful children demonstrate more flexibility, curiosity, imagination, creativity, and spontaneity in their play compared to less playful children (Knox, 1996). These characteristics mirror many of those named by Bronfenbrenner and Morris (1998) as being generative.

The concept of playfulness was used by Smith to explore how observers can name play. His question was: how can we determine when behaviour is playful? In his study, adults described the behaviour of nursery-school children as playful when it consisted of at least two of five criteria: flexibility, positive affect, nonliterality, intrinsic motivation, and means-end (Smith, 2010). Play can be considered therefore to be a continuum from non-playful to playful depending on the presence or absence of these criteria (Skard & Bundy, 2008; Smith, 2010).

The Test of Playfulness (ToP) (Skard & Bundy, 2008) has been used to measure playfulness in children of different ages and abilities. For example, studies have explored playfulness in children with attention deficit disorder (Leipold & Bundy, 2000) and physical disabilities (Harkness & Bundy, 2001). Findings show that children who might display more sedentary patterns of activity engagement, were nonetheless 'playful' as measured by the ToP (Bundy, Shia, Qi, & Miller, 2007). Furthermore, although children with physical disabilities scored low on engagement, they scored high on clowning or joking (Harkness & Bundy, 2001). This seems to suggest that children will find activities that meet their needs for playfulness and enjoyment, though they may appear to be less engaged through the observation of activities alone. Measures of activity alone do not necessarily capture the important elements of playfulness.

While playfulness is now viewed as an important aspect of play, humour is still often overlooked (Bergen, 2006). In some cases it has been considered as part of playfulness, for example, engagement in teasing or mischief has been factored into the Test of Playfulness (Skard & Bundy, 2008) but there is as yet a weak basis for our understanding of where humour fits in. Research has identified that infants respond to parent's initiation of humorous actions, and that toddlers can initiate humorous actions themselves (Bergen, 2006). While some research has been carried out to establish whether humour is linked to cognitive development, this is as yet inconclusive. Overall, Bergen establishes that the development of humour is reliant on intellectual ability, social relations with peers and mastery motivation each of which would benefit from further study (Bergen, 2006).

PLAY: THEORIES, TAXONOMIES AND TYPES

Play theory has evolved from the study of play and includes attempts to identify not only what it is (by determining different types or taxonomies) but also its purpose and meaning.⁵⁴ A contemporary view of play is that play involves an integration and overlap of language abilities, social and emotional resources, cognitive problem solving, and movement skills which all work together to enable play (Fromberg & Bergen, 2006). Each aspect has been the focus of specific theoretical development according to perspective: biological, psychosocial, cognitive, pragmatic and sociocultural (Morgenthaler, 2006; Parham, 2008) or according to discipline. For example, play has been researched by psychologists in relation to cognitive, language and social development, or by anthropologists in relation to sociocultural aspects (Fromberg &

⁵⁴ A brief overview of play theory development including an occupational science perspective can be reviewed in Appendix A.

Bergen, 2006). Table 5:1 outlines play from the perspective of specific disciplines and gave examples of their focus of concern (Burke, 1998).

Table 5:1. Examples of perspectives of play as they relate to specific disciplines:

- Psychodynamic: play diagnosis/ wish fulfilment
- Cognitive/developmental psychological: understanding child's psychological function
- Anthropological: cultural differences/ practicing for adult social and cultural life
- Competence: drive to gain mastery of environment
- Motor: fine-motor skill development
- Psychological: emotional development and expression
- Social: co-operation for social interaction

Contemporary play research continues to explore specific purpose and function (Parham, 2008), with some theorists identifying more than thirty potential functions of play (Bjorklund & Pellegrini, 2000). Play has been found to contribute to the development of social skills through turn-taking, of physical skills through movement, and of cognitive skills through problem solving and early literacy (Zigler & Bishop-Josef, 2009). A contemporary view of play therefore acknowledges the benefits of play itself, in how it influences learning and development- it is a means by which children develop a range of abilities such as self-regulation, cognition, language and social competence. It enables the child's emotional development and mastery of feelings with subsequent development of self-esteem and identity (Erikson, 1977). Moreover, play is acknowledged to be the embodiment of the child's experiences and '*representation of events and objects within family and community*' (Hyder, 2005, p. 7). Consequently, Zigler and Bishop-Josef contend that there is '*unequivocal evidence for the critical importance of play for children's development*' (Zigler & Bishop-Josef, 2009, p. 9). However, this does not imply that play is universally valued for learning (as we have seen) due to cultural differences (Goncu et al., 2000). Furthermore, some aspects of

play appear to be universal while others are culturally specific (Hyder, 2005). Finally, we need to be mindful that theories of play are a reflection of the times within which they are constructed; they are subject to the time period in which they are derived and will continue to change and be influenced by broader concerns of their time (Huizinga, cited in Hyder, 2005, p. 14). With this in mind, the next section is viewed cautiously as a representation of some universal categorisations of play and play sequences.

Play: From theories to taxonomies:

Over the many years of play research, sequences of play development have been identified, most notably by Piaget, Smilansky and Rubin. Piaget in his studies of child development identified three main stages of game development that corresponded to stages in cognitive development: practice play, symbolic play and games with rules (Piaget, 1962). In the practice play stage, play is characterised by exploration and engaging in activity for the pleasure of it, and involves the learning and practising of new skills. This stage is dominant in the first two years of life and is often called **sensorimotor** as the play is primarily based on sensory motor experiences. Such experiences are gained both from the body and from the environment. Of note is that practice play does not involve pretend play or social game playing with rules (Parham, 2008).

In other studies, Parten developed a theory of social development in play from observations of American preschoolers aged from two to five years (Parten, 1932). Parten's identified six different types of social play, based on observable social behaviours.⁵⁵ As children age, their frequency of social play increases, therefore identifying that social play is linked to age (Parten, 1932). While Parten's scales

⁵⁵ That can be classified as unoccupied, solitary play, onlooker, parallel group activity, associative group play and co-operative group play.

continue to be used widely, they have been redefined and applied in a variety of ways for example in cultural studies of play (Coplan et al., 2006). Smilansky drew from Piaget's work to name stages of cognitive play in preschoolers that evolves from functional, to constructive, to dramatic play and to games with rules (Smilansky, 1968).⁵⁶Functional play in her definition was based on play with objects using simple body movements and actions. Smilansky separated out dramatic from sociodramatic play also, with the latter being more associated with cognitive development (Nourot, 2006).

Rubin and colleagues then progressed onto a more detailed analysis by combining both Parten and Smilansky's work into their own play categorisation (Rubin, Watson & Jambor, 1978). Rubin et al.'s studies focused also on preschool aged children and results showed the value of combining a cognitive and social aspect together as it identifies more easily the nature and characteristics of play between children of different ages (Rubin, Watson & Jambor, 1978). Since then, their Play Observation Scale (Rubin, 2001) has been used to further the study of social and non-social play behaviours (Coplan, Rubin & Findlay, 2006). Social play has been found to be related to self-worth and social adjustment in late childhood for example. These perspectives of social play all focus on preschoolers of age two onwards, with no reference to the social nature of infant play. However, studies on early infant social and cultural play have been the focus of other work which is explored further in the chapter.

Having reviewed the literature⁵⁷, four key play categories are identified that relate to researching infants and their physical environment in particular: sensorimotor play,

⁵⁶ These stages were identified from her observational study of three to five year old preschoolers.

⁵⁷ See Appendix B for an overview of common categorisations of play reviewed for the purpose of this current study.

object play, exploratory play and physical play. These will be explored in more detail in the next section.

PLAY AND INFANTS UNDER TWO:

For infants under two, the sensorimotor stage that encompasses exploratory play and object play are of particular significance in a study of the physical environment and the child (Munier et al., 2008), while physical play is also relevant for studies that need to consider active physical interactions between child and environment (Pellegrini & Smith, 1998). This section takes a more focused view of each of these in turn, while understanding that each perspective does not constitute a separate type of play, as such. Early social play is then considered as it relates to play in the family.

Play and the sensorimotor stage of development:

Piaget defined the earliest stage of development in his research on early cognitive learning as the practice games stage, or sensorimotor stage of development (Piaget, 1962). Piaget researched with his own three children and documented stages of development that included six sub stages within the sensorimotor stage (see table 5:2)

Table 5:2- Piaget's sub stages within the sensorimotor stage and approximate ages

Reflex activity- 0 to 1 month,
Primary circular reactions- 1 to 4 months
Secondary circular reactions- 4 to 10 months
Co-ordination of secondary circular reactions- 10 to 12 months
Tertiary circular reactions- 12 to 18 months
Internal representation- 18 to 24 months

Within this framework, Piaget viewed reflex and primary circular reactions as reactionary and reflex led movements, with the word circular being used to denote repeated movement. The stage of secondary circular movements is where the infant can

begin to move beyond reflexive patterns and acts on objects (Piaget, 1962). By ten months, coordinated and flexible movements are evident and by 18 months, mental representation of the world becomes evident also. These descriptions of sensorimotor development are still used and contribute valuable knowledge on this stage of development, while further findings have also built on this work (Smith 2010).⁵⁸ For instance, work on mastery motivation has been influenced by Piaget's sensorimotor theories of development, which served as a foundation to researching several components related to object use, practising sensorimotor skills and problem-solving (Yarrow et al., 1983).

Piaget's core theory identified two important aspects of intelligence: assimilation and accommodation, which combine to result in adaptation, (i.e. development) (Piaget, 1962). In Piaget's view, play is primarily assimilation, which refers to the ability to consolidate learning rather than to accommodate, which involves modification to new experiences (Parham, 2008). Piaget identified that play involved active repetition, hence his use of the term practice play in describing the earliest stages of play development (Piaget, 1976). Interestingly, Piaget also viewed objects from an affordance perspective when he described objects to be '*assimilated as something to be sucked, to be grasped, to be shaken*' (Piaget, 1976, p. 166). Though he did not use the term affordance, he acknowledged that infants develop functional concepts this way (Heft, 1988). Piaget regarded play as behaviour that begins once infants have passed through the primary reflexive stage and can begin to control their own movements (Piaget, 1976). For some, Piaget's view is considered to downplay the role of play in learning (Smith, 2010) and is viewed as failing to recognise the contribution play gives to development (Sutton-Smith, 1966). So, while Piaget's theories of cognitive development are renowned and

⁵⁸ For example, in researching the age of onset of symbolic stage of pretend play, though infants demonstrated earlier ages of onset than Piaget had identified, the sequence of stages were the same (Nicolich, 1977).

well accepted as having an important role in understanding child development, they can also be viewed as limiting (Sutton-Smith, 1966).

In occupational science, the sensorimotor stage of development has been viewed as a stage of play in itself also. Reilly developed her theories of occupational behaviour around concepts of mastery and achievement. Within that framework, play was viewed as developing through hierarchical stages of exploratory behaviour, through competency and then achievement (Reilly, 1974). Her hierarchy establishes the interrelationship between play and agency, exploration and mastery, which is noted as central to her theory of occupational behaviour (Parham, 2008). Meanwhile, Takata constructed a taxonomy of play (called epochs) with **sensorimotor play** being named as the first stage that extends from birth to two years (Takata, 1974).⁵⁹ Hence, the sensorimotor stage appears to represent an umbrella term for naming the play stage of infancy from birth to two years, within which specific subcategories of play exist: exploratory play, object play and physical activity play, and each of these will be looked at next.

Exploratory play:

Discourses on early play have considered exploratory play from two main perspectives: exploration as a **stage** in the continuum of development (e.g. Belsky & Most, 1981) and exploration as a **phase** in typical activity engagement (e.g. Hutt, 1979; Weisler & McCall, 1976).

Exploratory play as a stage of play is considered to be the first stage of play in infants. Infant behaviour has been researched to attempt to distinguish between different aspects of exploratory play (Baranek et al., 2005). For example, Belsky and Most studied early

⁵⁹ Takata was a student of Reilly's and identified six epochs of play.

exploration and play and identified the sequence of development of play⁶⁰ from exploration to pretend play, based on play with standard toys. Table 5:3 summarises the sequence.

Table 5:3- Sequence of development of play identified by Belsky & Most, (1981)

mouthings → simple manipulation → functional → relational → functional-relational → enactive naming → pretend self → pretend other → substitution → sequence pretend → sequence pretend substitution → double substitution
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Their findings confirm that generally infants progress from a stage of undifferentiated interactions with objects to stages of decontextualised play (pretend play), with evidence of adaptive behaviours throughout, rather than trial and error learning (Belsky & Most, 1981). Within this categorisation, exploratory play was considered to continue through the first seven months in infancy and is the focus of this section.

From an affordance perspective, babies are in a constant state of perceptual learning by exploration of themselves and their environment, to the extent that by about six months, the baby is at its peak in relation to learning about objects (E. Gibson, 2003). During the earliest months, infants focus on exploring objects through touch and mouthing (Rochat, 1989) which is viewed as contributing to discovery of object properties, therefore guided by what objects afford for activity (Rochat, 1987). The earliest object interactions are observed with the feet at two months but manual exploration takes over from then on (Galloway & Thelen, 2004).

By four months, visual and oral exploratory play with objects is typically combined, while object interaction begins to involve fingering of objects also, which is seen in two-handed activity (where one hand holds the object while the other fingers it) (Rochat, 1989). This coincides with the onset of reaching abilities also (Lobo &

⁶⁰ With forty infants from ages seven to twenty-two months of age.

Galloway, 2008). Tactile exploration is dominant for the first six months but then visual inspection becomes more prominent and is accompanied with more adaptive manual exploration which is made possible by the ability to self-sit (Soska, Adolf, & Johnson, 2010). This demonstrates the differentiation of exploration and selectivity that has developed in infants of six months (Bourgeois, Khawar, Neal, & Lockman, 2005; E. Gibson, 2003) which highlights how exploratory play shapes and influences motor and cognitive skill development (Soska, Adolf & Johnson, 2010; Lobo & Galloway 2008).

Research has confirmed that at six months, exploratory behaviour is significantly related to the infants' development as measured on a standardised scale (Yarrow, et al. 1983). This learning is enabled through sensory input by mouthing, listening and looking, and by exploratory strategies of movement and manipulation. Gibson's research confirms that infants progress through stages of undifferentiated exploration, followed by differentiation⁶¹ until selective exploration can occur. This is when the infant is able to use knowledge from previous exploration cycles, and now can selectively explore in play, with an '*economy of information*' (E. Gibson, 2003, p. 286).

However, some researchers argue that if play is defined as being intrinsically motivated, then exploration cannot be play because exploratory behaviour is more driven by the stimulus from the object rather than by the intrinsic motivation of the child to play (Weisler & McCall, 1976). Weisler and McCall (1976) define exploration as '*consisting of a relatively stereotyped perceptual-motor examination of an object, situation, or event, the function of which is to reduce subjective uncertainty*' (p. 493). Children move from a position of: what does this do? (exploration) to: what can I do with this? (play) (C. Hutt, 1976; Rubin et al., 1983). Exploration is conceptualised to be dominated by the stimulus which results in the child following a sequence of attending to the stimulus,

⁶¹ Which refers to a narrowing down of information perceived.

examination of it through physical and perceptual motor-sensory interaction, with absorbed attention to a level that may be overly intense and therefore not necessarily pleasurable (Weisler & McCall, 1976).

Corinne Hutt agreed with this view of play and exploration being separate (C. Hutt, 1979).⁶² Specifically in relation to infancy, Hutt acknowledges that the differentiation between exploration and play is unclear but argues for the usefulness of making this distinction nonetheless. Her studies with preschoolers over time identified that failure to explore in early years related to lack of curiosity in boys, while in girls it related to poor social adjustment (C. Hutt & Bhavnani, 1976). In further work, Hutt et al. recognised play as the overall, umbrella term, with exploration as an aspect of play. So, the terms epistemic and ludic were now recommended as a way to capture the different forms and motivation of play behaviour (J. Hutt, Tyler, C. Hutt, & Christopherson, 1989).⁶³

Other researchers agree with this perspective of viewing exploration as an intrinsic aspect of play. For example, Reed, in his studies of cognitive development and affordances, considers that every new interaction involves new exploration initially and exploration is not limited to the first months of infancy. He argues that affordance-use involves two kinds of interactions: exploratory and performatory (Reed, 1993). Both work together as '*to become aware of affordances requires exploration of information and to use an affordance requires performance*' (Reed, 1993, p. 66). In this view, every play activity involves some form of exploratory behaviour. Overall, researchers appear to agree that a separate view of each is useful in understanding the role of each. In

⁶² Epistemic relates to the behaviour that is concerned with knowledge and information seeking, which includes exploration and also problem-solving behaviours while ludic behaviour relates more to decontextualised play and playfulness. Ludic was considered to be play while epistemic was not (C. Hutt, 1976).

⁶³ Note: under this taxonomy, play is described from a motivational perspective.

reality, exploration and play are intertwined, with one being more prevalent than the other at different times.

Object Play:

Exploratory play studies as described above involve the infant's play with objects, consequently there are no clear distinction between exploratory play and play with objects (Baranek et al., 2005), with exploration being identified as part of the continuum in early object play behaviour (Belsky & Most, 1981). Accordingly, the same sequence of exploratory play development (Belsky & Most, 1981) is applied in researching object play also. These are commonly narrowed down to the categories of **exploratory, relational, functional** and **symbolic use of objects** (Baranek et al. 2005). Other categories of object play have included practice and manipulative play (Garner & Bergen, 2006; Wachs, 1993) while the term **constructive play** has been used interchangeably with object play (Pellegrini & Bjorklund, 2004; Smith, 2010). Furthermore, from a sociocultural perspective, the separation of relational from functional object use can be viewed as incongruent. Perinat and Sadurni (1999) argue that object use is always equivalent to cultural use: that '*there are no natural objects or natural uses of objects*' (p. 57). As exploratory play has been addressed in the previous section, this section focuses on relational, functional and symbolic phases of object play particularly.

Relational use of objects⁶⁴ is seen to emerge at nine months and is not present in seven-month olds (Fenson et al., 1976). By this stage, infants interact with object typically by mouthing, and chewing, alongside close visual and tactile inspection, followed by

⁶⁴ Relational play concerns manipulation of one or more objects, which are combined in play, but without regard for their purpose. This is described as non-functional play because the child relates two objects in random ways without regard to their functions (Belsky & Most, 1981).

shaking, banging, turning the object over, and transferring object from hand-to-hand (Fenson, Kagan, Kearsley, & Zelazo, 1976). Research identifies the emergence of functional object play⁶⁵ at the end of the first year meanwhile, when symbolic acts emerge demonstrating the concurrent changes in cognitive abilities (Fenson et al 1976; Nicolich, 1977). This emerges alongside abilities such as joint attention by one year (Bigelow, MacLean, & Proctor, 2004).

During the second year, objects become more centred in play compared to younger infants whose object pretend play is centred on themselves (Fenson & Ramsey, 1980). The object-centredness can be seen also in infants' preferences for cause-and effect toys for example, where they are realising the relationship between actions and outcomes. It reflects also the stage of development of infants' manipulative skills such as fingering, rotating and banging (Rochat, 1989). These studies highlight the interrelationship between the infants developing abilities and the characteristics of their play. In this way, play maybe considered as a representation of new levels of ability and is observed to consist of the most recent abilities the child has developed.

Symbolic play emerges during the second year, and displays an ability to pretend with objects, demonstrating more complex play skills. This marks the change from the sensorimotor stage to the symbolic play stage in Piaget's theories (Piaget, 1962) and is considered to be the most thoroughly studied aspect of play (Pellegrini & Smith, 1998). Evidence of symbolic play has been identified in infants as young as 12 months (Nicolich, 1977). However, this may be due to the influences of parent play-behaviours rather than a true measure of infant symbolic play abilities (Tomasello, Striano, &

⁶⁵ Functional object play in comparison involves attending to the purpose of the object and reflects a more mature stage where the infant begins to apply social-cultural learning in play (Baranek et al, 2005: Fenson et al, 1976).

Rochat, 1999).⁶⁶ Instead researchers propose that infants under two demonstrate play that imitates adult modelling (Tomasello, Striano & Rochat, 1999).

A similar outcome was found from another study on infant pretend play (Haight & Miller, 1993). In this study of nine children in their homes, mothers directed pretend play until 24-months, at which stage the infants were equal partners in pretend play activity. Haight and Miller as a result, contend that pretend play may be influenced by the caregiver's role in supporting the infant to develop and acquire pretend play abilities. In their view, pretend play cannot therefore be considered as only a '*by-product of symbolic thought*' but that it is shaped and scaffolded by caregivers in the first two years (Haight & Miller, 1993, p. 126).⁶⁷

So object play is closely linked to social play. Studies have found that at nine months equal time was spent playing with mothers or playing with objects, at approximately 38% of time.⁶⁸ By 16 months however, playing with objects had increased to approximately 50% of time. As the toddler developed, time spent on object play increased in comparison to time spent playing with caregivers (Clarke-Stewart, 1973). However, the best predictor for the child's performance was the amount of stimulation the child received at home from the mother, so the role of mother as mediator of the environment was evident. While Clarke-Stewart's study led the way for many years in placing the emphasis on the adult as mediator of the physical environment this view has changed, with more recent research showing the physical environment also impacts significantly on learning in its own right (Wohlwill & Heft, 1987). It appears that for

⁶⁶ In their study of symbolic play of 18-month-olds, it was found that infants showed no skills in symbolic play when there is an absence of verbal scaffolding or adult modelling.

⁶⁷ This view appears to be supported by studies of play and children with autism, who typically have difficulties in developing symbolic play, but who also have limited capacity for intersubjectivity and shared or joint attention. It may be that symbolic play requires abilities in social understanding and not just cognitive skills (Baranek et al, 2005).

⁶⁸ This was a study of mothers and infant interactions, over a nine month period, with infants aged nine to 18 month olds.

infants, object play needs to be viewed from a broad perspective that acknowledges the social nature as well as the physical and cognitive aspects of this type of play (Haight & Miller, 1993; Pellegrini & Bjorklund, 2004; Tomasello, Striano & Rochat, 1999).

Object play development has been the focus of occupational science research (e.g. Bober, Humphry, Carswell, & Core, 2000; Florey, 1971). Two significant studies were identified that have been carried out on early object play in infants under two (D. Pierce, 1991; Schneider, 2009). Pierce's study of object play identified three kinds of object rules or categorisations.⁶⁹ While Pierce's model does not apply an affordances approach, it reflects a similar view of objects as offering potential affordances for action and offers an alternative perspective on analysing object use.

Schneider's research explored object play in home contexts with 60 infants over four months (Schneider, 2009). She found that although separating out categories of object play is useful, it does not capture the complexities of typical play. Infants in her study presented variability in the range or level of object play, demonstrating that mature and less mature abilities co-exist rather than less mature skills being abandoned (Schneider, 2009). So, it is more likely that infants will demonstrate different levels of abilities in object play at any given time. Her findings showed that higher levels of play behaviours were significantly associated with more focused attention and persistence, along with engrossment, thus confirming the link with infant motivation and agency.

Though object play is most commonly considered in relation to infant play, play with objects does not disappear after infancy. However, for infants, object play develops over the first year and remains the predominant mode of play in the second year also (Garner & Bergen, 2006).

⁶⁹ These were: object properties, in relation to its static and active characteristics; object actions in relation to object capacity for action; and object affect which relates to the contextual experience such as motivation and stimulus etc.

Physical Activity Play:

Physical activity play is one of the least researched areas of play, yet could be argued to be one of the most common forms observed (Pellegrini & Smith, 1998). Moreover, it is commonly confused with aggressive behaviour, which is perhaps why it has attracted little attention in play research (Blurton Jones, 1976). It consists of three main types as identified by Pellegrini and Smith (1998): rhythmic stereotypies, exercise play and rough-and-tumble play. In each case, distinguishing features include playfulness along with an above average level of physical activity.

Rhythmic stereotypies are considered to be the earliest manifestation of physical play, which is observed in infants and peak at about six months (Thelen, 1979). Thelen researched infants over a 12-month period and identified 47 different movement patterns⁷⁰ which she described as being purposeless yet with a high degree of organisation, and often more prevalent when babies are not receiving movement stimulation from other sources (such as throwing up in the air) (Thelen, 1979).⁷¹ She viewed these patterns as being related to immature neuromotor control and therefore to organismic development. Her research showed that as each part of the body came under the child's control, more varied and frequent stereotypies are observed. In more recent research, Thelen and others acknowledge that purposeful physical play activity can be seen as early as eight weeks-old, thus highlighting that there is more to explore as yet in early physical play (Galloway & Thelen, 2004). Recent studies provide evidence to confirm that development is not so much organismic, as Thelen first thought, but is a convergence of physiological, anatomical abilities combined with environmental opportunities and experiential history (Shonkoff & Phillips, 2000). Evidence from

⁷⁰ Including kicking, waving, rocking.

⁷¹ Thelen noted that stereotypical movements in play behaviour are usually considered to be non-adaptive, and evidence of non-play activity, which is commonly assumed to be related to children with special needs (Thelen, 1979).

researching brain activity and development shows that *'adaptive behaviour is the result of the continuous interaction between the nervous system, the body, and the environment, each of which have rich, complicated, highly structured dynamics'* (Chiel & Beer, 1997, p. 555). It is likely therefore, that stereotypies are a phase of practice play with bodily movements, for the purpose of gaining motor control (Pellegrini & Smith, 1998).

Exercise play is the next type of play which begins at the end of the first year when infants begin to move towards toddler stage.⁷² It is often not distinguished between rough-and-tumble play, but Pellegrini and Smith view it as a different category of physical play as it is characterised by 'physical vigour' (e.g. running and climbing) rather than rough play, and can be either individual or with others. While it is common in early to middle childhood, it is at its peak in preschoolers (Pellegrini & Smith, 1998). Its purpose is considered to be related to building up strength and stamina now that the toddler has gained motor control.

Rough-and-tumble is considered the third type of play, which begins in preschool and extends into middle childhood where it peaks and fades away towards adolescence. There is no consensus on these categorisations and for many, the rough and tumble play category matches Piaget's sensorimotor stage due to its focus on movement and exploration (Smith, 2010). Some researchers have focused specifically on rough-and-tumble play and identified eleven discrete behaviours (see Appendix B) that differ from exercise play primarily due to the fact that these activities are always social and have a playful context (Boulton & Smith, 1989). Hence, chasing is usually considered exercise play more than rough-and-tumble due to the lack of an aggressive aspect in how it is manifested. Researchers recognise the confusion between fighting and physical play,

⁷² It has been reported as contributing to 10% of time spent in play (Bloch, 1989).

and describe mischievous expressions and vocalisations that differentiate this type of play from aggressive behaviours in true fighting (Blurton Jones, 1976; Pellegrini, 2006). However, Blurton-Jones also observed children in his study who tended to view such play as aggressive, which demonstrates difficulties in interpreting physical play even as a player. Furthermore, theorists have continued to debate the role of rough-and-tumble play due to the aggressive content (such as playing war games) resulting in mixed views as to the relevance of it for the child, but also the role of caregivers in supporting what could be seen as antisocial behaviour (Pellegrini, 2006). Of note is the finding that there is a gender difference in physical play, in that boys are found to engage in physical play more frequently than girls (Pellegrini & Smith, 1998).⁷³

Physical play has also been found to be influenced significantly by the environment as it requires freedom for movement and exploration (Smith, 2010). For example, research has shown that when deprived of movement, infants and children seek out more intense movement experiences as if to compensate (Pellegrini & Smith, 1998; Thelen, 1979). Furthermore, physical play happens more frequently outdoors in preschoolers due to the existence of available space, while softer surfaces encourage more physical play than harder surfaces (Smith 2010).⁷⁴ It has also been noted that physical play occurs less often on hotter climates and that it is observed internationally, despite cultural differences (Smith, 2010).

Review of this literature on physical play highlights a progression in infants from physical-body play, to physical- environment play and finally to physical-social play in the broader environment typically outdoors. However, since Thelen's studies, more is

⁷³ This was more apparent in preschool and school-aged children. Differences in girls' behaviour was postulated to be due to their relative physical maturity compared to boys, along with boys predisposition to physical play based on hormonal studies (Pellegrini & Smith, 1998). Further, an influence of being socialised by gender was considered a possible contributing factor.

⁷⁴ Moreover, Boulton and Smith report that rough-and-tumble play accounts for up to 10% of playground play in children (1989) while exercise play has been noted to account for up to 21% of preschoolers play (Smith, 2010).

known regarding early movements in infants. Furthermore, other studies have shown evidence of physical-social play emerging at an earlier stage than was previously thought. Consequently, physical activity play remains a relatively under-explored aspect of play that would benefit from more attention. The next section looks at social play in infants, and begins to explore the social settings for play irrespective of what type of play is involved.

Social play in infants: family play

Learning and development are facilitated by the participation of the developing person in progressively more complex patterns of reciprocal activity with someone whom that person has developed a strong and enduring emotional attachment and when the balance of power gradually shifts in favour of the developing person (Bronfenbrenner, 1979, p. 60).

Infants play with adults as their first play partners. Consequently theorists have frequently prioritised the study of social processes of interaction and learning to develop our understanding of early childhood. For example, Vygotsky developed a concept of the Zone of Proximal Development to identify the stage between a child's actual behaviour and potential behaviour in a social context, whereby the child is enabled to progress to new learning by the guidance of the adult (Vygotsky, 1978). This work has been supplemented by Bruner's work on scaffolding which views it as an adult's role to provide problem-solving, intersubjectivity, responsiveness and to promote self-regulation (Bruner, cited in N. Hayes & Kernan, 2008, p. 75). However, both concepts have been criticised as presenting an overly passive view of the role of the child (N. Hayes & Kernan, 2008). Consequently, other sociocultural theorists have expanded on this work to conceptualise learning as being a process of guided participation (Rogoff, 1993) or situated learning (Lave & Wenger, 1991) to present an extended view that encompasses a more reciprocal perspective.

Although some authors argue that social play begins in children from age two onwards, social play can be discerned from birth. Early social play is typically observed through interactions where carers exaggerate movements and facial expressions to initiate responses from the infant, in games such as peek-a-boo and tickling. An essential element of this process is the ability of infants to imitate from the earliest weeks (Trevarthen, 2005).⁷⁵ Such co-created interactions build to enable infants' joint attention which has been identified as a significant aspect of early communication and social development. Infants begin to develop joint attention as they move towards secondary intersubjectivity, which is observed for example when an infant uses direction of gaze, and gesturing such as pointing to share experiences with the carer (Perlade et al., 2009). These stages are observed through social interaction games, such as mouth imitation and imitation of clapping (person-person games) to peek-a-boo and hiding objects (person-object games).

Game-playing in infants refers to highly repetitive, simple interactions, with stereotyped roles for each participant (Field, 1979). These games are considered as early contexts for learning turn-taking related to conversation (Field, 1979). Parents are noted to play despite the infant's inability to actively reciprocate. Instead, even the smallest coo from the infant is taken as conversation (known as a contingency response) and responded to by the parent. Field studied 60 infants (from birth to 42 weeks) to explore and describe the kinds of games most frequently played in infant-parent interactions⁷⁶. Her study was replicated in further research, with 20 dyads in the USA (Fraits-Hunt & Zemke, 1996). A range of 17 games were identified as well as the original six games in Field's

⁷⁵ As outlined in the previous section, Trevarthen identified stages that infants' progress through from primary intersubjectivity and games to secondary intersubjectivity (Trevarthen & Aitken, 2001).

⁷⁶ Six core games were identified: tell-me-a-story, I'm gonna get you, walking fingers, so big, pat-a-cake and peek-a-boo. Other games included itsy, bitsy spider and this little piggy went to the market. Games were identified if they were observed in more than 50% of interactions.

research, with differing frequencies across groups of dyads, and reflecting cultural contexts (e.g. ‘Do Indian’ game) (Table 5: 4).

Table 5:4- List of commonly played games in order of popularity (Fraits-Hunt & Zemke, 1996).

Games listed in order of popularity	
Tell me a story	Where’s your nose-where’s mummy’s nose?
I’m gonna get you	Animal sounds
So big	Can I see your teeth?
Pat-a-cake	Get your feet
Tickle	Blowing bubbles
Walking fingers	Hands together clapping
Peek-a-boo	Riding a horse
Running	Itsy bitsy spider
This little piggy	Stick your tongue out
Slap me five	What’s that sound?
Do Indian	Where did it go?
ABC song	

While both studies compared game playing between pre-term and typically developing infants, they serve as interesting studies from a sociocultural perspective, to consider what games are commonly observed in different settings.

A number of studies have explored the progression of specific game-playing between parents and infants, For example, Bruner and Sherwood studied six infants over ten months by observing mothers and infants playing games they enjoyed most. Peek-a-boo was one of the most popular games, which progressed from being mother-led to equal participation. Over the months, mothers varied the game by taking turns in hiding the infants face or their own face, while infants took more control over unmasking, as they got older. By fifteen months, Bruner notes that the infant invents and controls the game: *‘she has now become the agent in the play, mother being recipient of her action’* (Bruner & Sherwood, 1976, p. 281).⁷⁷

⁷⁷ Bruner’s research also highlighted how game-playing disappears when the parent is slow to read their infants signals for example by starting to play before the infant’s attention is enlisted.

Haight and Miller (1993) explored parent-infant play through focusing on pretend play.⁷⁸ Families were visited seven times every four months to carry out a naturalistic study of pretend play wherever it happened in the home or garden, playground or on the way to the shop (Haight & Miller, 1993). They identified three main influences on play: the caregiver's enthusiasm for it, their ability to foster a context for pretend play, and their focus on socialising their children into pretend play from cultural conventions (Haight & Miller, 1993). Their investigation showed that pretend play is social play right from its inception and that it does not begin as a solo activity. Mothers initiated almost all pretend play at age one, but it rapidly became a joint activity.⁷⁹

Peers and siblings:

Early game playing and intersubjectivity frequently includes play with siblings and peers also. While peer play was viewed in the past as nonexistent for infants, studies have confirmed that peer play begins in the earliest stages (Stevenson, 1989). Peer play with infants and slightly older peers is characterised by less reciprocal interaction than between infants and mothers, and usually consists of watching and following their activities (Lamb, 1978; Stevenson, 1989). More active peer-play becomes evident by the second year when toddlers can be seen to engage in turn-taking games such as run and catch (Garner & Bergen, 2006). More typically, social interaction is seen to emerge through object-oriented play at this stage (Corsaro & Eder, 1990).

For most infants, play with other children is more usual between siblings than peers (Lamb, 1978). Their play is still characterised by watching and following activities of the other children. For example, in a study of social interactions, Dunn found that

⁷⁸ This was a longitudinal study which was conducted in the homes of nine children of European-American families from when the child was twelve months old to four years of age.

⁷⁹ By the time the child was two years old, 21% of the time at spent at pretend play.

infants learned by observing their older siblings (Dunn, 2005).⁸⁰ In another study of sibling play interactions, Lamb found that toddlers play is influenced primarily by how preschool siblings tend to facilitate toy encounters, and model play behaviour that the toddler subsequently can be observed to attempt to repeat (Lamb, 1978).⁸¹ Furthermore, this play interaction was seen most often when only one parent was present and not two. Siblings when afforded the choice would prefer to play with a parent than with a younger sibling.

Facilitating play in the home:

For infants in particular, play in the home is reliant on how parents orchestrate play for them. In a study of child-parent interactions, parents were found to work in two ways to orchestrate play with children: to **segregate** or to **include**. Segregation related to keeping play activity separate from daily routines or house work while inclusion was where play was embedded in daily routines (Primeau, 1998).⁸² In another study, a spatial tie between mothers, toddlers and play in the home environment was identified (D. Pierce, 2000). Infants and toddlers preferred to play in close proximity with their mothers rather than in designated play areas in the home. Both studies support the need for consideration to how the social and physical environment is constructed in the home to support and enable play.

The role of parents in orchestrating play in home environments is therefore a consideration and in particular, their role in choosing play-materials. However, as we have seen in earlier chapters, this differs within and between cultures and is reliant on parental values and attitudes towards play.

⁸⁰ This study involved 43 children aged between 1-3 years in England,

⁸¹ This study involved play interactions between toddlers of twelve and eighteen months.

⁸² Primeau (1998) studied daily home routines with ten families in the US, visiting them at home and preschool.

Summary

This chapter reviewed play from multiple perspectives to support an understanding of the world of young infants. Contemporary knowledge and opinion about play considers it as a valuable and important aspect of child development with a shift towards understanding play to have value in itself. Play is where the child takes control of the world, experiences pleasure, explores abilities, uses imagination, makes choices, discovers an identity, expresses personality, and takes part in a social and cultural process. More than that, it is also seen as a right for every child in the United Nations Rights of the child (United Nations Convention on the Rights of the Child (UNCRC), 1989).

Theories and taxonomies were explored that have been used to describe play and are useful in enabling researchers and theorists to study the development of play over time, and to understand child development more fully. In relation to infants, these included sensorimotor play as an overall theme, within which exploratory, object and physical play were explored.⁸³ It was identified that social play has developed as a taxonomy for preschoolers and not for infants. Nonetheless, social play was reviewed in infancy as it relates to family play.

However, categorisations of play can be limited in their focus on perspectives of typical play development. While they provide us with an essential understanding of play and learning at a micro level, they do not account for an understanding of play and learning from a dynamic, contextual perspective. For example, physical play is also frequently social (Pellegrini & Smith 1998) and early object play relies on the social environment to support engagement with objects (Clarke-Stewart, 1973). Learning about objects is

⁸³ However, it is important to note, that particularly in relation to infants, there is a difficulty in separating and categorising play into separate types (Garner & Bergen, 2006).

both a social and individual process, described by Perinat and Sadurni as both a subjective and intersubjective process (1999). Indeed, for each of the areas of play that are reviewed relating to infants under two, all of them have social-cultural and physical aspects, that underpin the infants opportunity to engage in play in the first place. So, while it is necessary to identify separate categories in order to explore and understand play, each category of play has multiple and varied meaning and influences on the child and needs to be considered from multiple perspectives to truly understand it. As Sutton-Smith argues, many of the categorisations of play come more from an adult's need to categorise rather than viewing play from a child's perspective (Sutton-Smith, 1986).

This chapter brings us now to the research study at hand and where to begin with designing the study. Having considered a broad range of literature from an ecological perspective, that includes a macro to micro level review, we can now begin to address the pressing question: how to plan and implement an ecological research study of infants in their homes.

CHAPTER SIX: METHODOLOGICAL CONSIDERATIONS

‘Children’s activity settings are the architecture of their everyday life and the context of their development’

(Gallimore, Goldenberg, & Weisner, 1993, p. 315).

INTRODUCTION

The purpose of this chapter is to outline the research design and methodology of the research study. The chapter begins by revisiting the purpose of the study and outlining more specific research questions that emerged in the early stages of the research process. The chapter is then presented in three parts: the first part sets the scene in presenting the researchers’ overall framework for understanding the world. The second part describes the research design, methodology and methods, including concerns related to reflexivity and bias. The final part then addresses data generation, alongside some specific data analysis concerns. Finally, consideration is given to identification of a process for evaluating this research based on guidance from the literature, with due regard to ethical practices that underpin the study.

The purpose of this study has been introduced in Chapter One. However, following a phase of exploration of the literature and during the course of early data analysis, it soon became apparent that the research questions were based on some assumptions and needed reworking.⁸⁴ This is a common phase in qualitative research whereby the researcher is constantly reformulating the research problem *‘in ways that make it more fruitful and /or more amenable to investigation’* (Hammersley & Atkinson, 2007, p. 25).

⁸⁴ For example, the broad research questions that were initially targeted were focused on a child’s interactions with the physical environment in the home. There was an assumption that the home environments were ‘known’.

The following questions emerged as more congruent with the research study being undertaken:

1. What is the nature of the home social/cultural environment?
2. What is the nature of play in the home environment?
3. What is the nature of the child's interactions with the physical home environment over time?
4. What are the attributes/affordances of the physical environments that influence this developmental progression?
5. What are the characteristics of the transactional process between child and environment?

How to best answer the research questions is the point of departure. This study proposes to describe contextual child development in the home environment. The aim is to explore contemporary Irish infants' early play development over time through the lens of the physical environment. Such a study does not aim to explain a hypothesis or to test a theory but rather to inductively explore emerging data which will be interpreted both by carers in the home and the researcher as observer. Methodologies and methods are needed that can optimally support the study aims and enable the researcher to identify answers to these research questions.

Overall framework for understanding the world

Denzin and Lincoln propose a hierarchical model of thinking to guide the planning of a research design: from a paradigmatic framework, which includes the researchers' ontological world-view, to a set of questions or epistemology to a resulting choice in methodology to answering the research questions (Denzin & Lincoln, 2003). Emphasis on sensitising concepts and disciplinary background of the researcher is advised (Charmaz, 2006). Each discipline brings its own understanding of how the world can be explained from its specific philosophical underpinnings (Mason, 2002). In order to

begin a research process, the researcher must identify what is guiding the process in relation to assumptions and positions on how the world can be understood. Being explicit about such beliefs enables the researcher to conduct research in a coherent and congruent way, and supports the researcher in decision making.

In occupational science, the study of occupation as meaningful experience is a core tenet. This implies a predominantly interpretivist position of understanding the world. Furthermore, the meaning of occupation is understood in relation to the person-environment context. Context is therefore an essential consideration. These elements are commonly identified as defining features of qualitative research (Mason, 2002).⁸⁵ So in considering a study that explores the nature of the development of play occupations in the context of the home environment, the starting point for consideration for this study was a qualitative one.

Qualitative studies take many forms and occupation has been studied from differing paradigms such as constructivist, feminist, critical theory and cultural studies. Ontologically, the nature of the phenomena I wished to research as an occupational scientist comes from knowledge of the world understood through the social shared understanding of the individuals that inhabit it. However, in approaching a process of researching with infants, it is evident that the nature of daily experiences is not easily explored, as infants cannot account for their knowledge or understandings of the world. Instead, by observing their engagement, their play choices and purposefulness, and their participation in activities that have meaning for them, some shared understanding can be interpreted from events (Spitzer, 2001, 2003a, 2004). Furthermore from exploring

⁸⁵ In the field of occupational science, qualitative research has been dominant as it provides an important framework for researching occupation (Frank & Polkinghorne, 2010). In a systematic review of peer-reviewed publications of occupational science research published between 1996 and 2006, 70% of the articles were qualitative (Glover, 2009). This confirms the goodness-of-fit with a qualitative approach and the study of occupation.

meaning through discussion with mothers or fathers, a shared understanding emerges. This is considered a key element of interpretivist approaches to the study of people's lives. For an interpretivist approach, social reality is understood through sharing people's understandings, views and interpretations as an ontological position (Denzin & Lincoln, 2005). Consequently, a constructivist ontology is considered an appropriate choice for this study of play occupations of infants.

Compared to other social sciences, occupational science places occupation rather than social processes or interactions in a central position (D. Pierce, 2009). This is viewed as a defining feature of occupational science and one we need to increasingly honour in our research (D. Pierce, 2009). Occupation consists of interactions or transactions between the person, the environment and the activity. From these principle tenets, it can be stated that occupational scientists see the world in terms of how social **and** physical environments influence occupational behaviour. Given the emphasis on the physical environment within this definition, further exploration of a constructivist ontological stance is required- to what extent does this stance include the physical?

Interaction between the physical environment and the child is not easily construed purely as constructivist. In exploring arguments related to constructivism, naturalism and relativism, the emphasis is primarily on social rather than physical phenomena, resulting in difficulty in knowing how the physical world fits in this world-view. References to the physical world and realism can be found however, especially in ecological psychology literature (Chawla & Heft, 2002). Chawla and Heft argue that a purely constructivist view limits our understanding of the physical environment as it *'claims that all that can be known is one's own mental experiences of the world'* which they view as problematic as it *'puts the 'real' environment always out of reach'* (Chawla & Heft, 2002, p. 202). Instead a realist approach can be considered. Realists

are described as believing that events in the world exist independent of our understanding of them and that there is a material reality to the world (Bevir & Rhodes, 2002; Denzin & Lincoln, 2005; Hammersley & Atkinson, 2007). Gibson's theory of affordances comes from a realist perspective (J. Gibson, 1979). An affordance approach means that objects are known or understood in relation to the **functional meaning** they have for the infant who interacts with them, where meaning is linked to the characteristics of objects that exist independent of the individuals understanding of them. Consequently, for myself as a researcher of the physical environments of children, I assume that the physical world exists beyond our understanding of it.

So taking a constructivist approach to research does not fully explain my stance. Instead a position that includes one of realism is needed- one that allows for the existence of things but also for the understanding of things from an interpretivist view. A realist acknowledges that the world is socially constructed but within a framework of reality (Denzin & Lincoln, 2005). So while this study is considered to have a constructivist ontology, it also involves a realist view of the physical or natural world. Therefore, for this research study the stance taken is one of constructivist (realist) ontology.

An epistemological issue concerns the question of what is considered acceptable knowledge in a discipline (Denzin & Lincoln, 2005).⁸⁶ This study of infants is informed by principles of how the world can be known: that the world is understood through social co-construction of experiences, with the researcher being a participant observer of the home environments, seeing both the physical and social environments as meaningful. This requires shared meaning through interviews and being with participants in their worlds. It is based on a valuing of individual experiences and the importance of dynamic, contextual aspects of both child and adult development.

⁸⁶ Epistemology relates to the principles and rules that guide the researcher to explore and understand social phenomena.

The ontological and epistemological background outlined above, leads to the choice of a qualitative approach to methodology in exploring this project, with a constructivist (realist) ontology and subjective, interpretive epistemology. This focus in research enables a deep exploration of the social world that is more difficult to explore from a quantitative approach (Denzin & Lincoln, 2003). It focuses on context and process, rather than product, which enables a rich understanding of aspects of life, related to what people do and how the physical world is involved, rather than emphasising a search for causal relationships (Mason 2002).

RESEARCH DESIGN

The next consideration is related to the study design. The research design will need to include a concern with how the social and physical world is experienced, and how it is constituted. It will need to employ flexible methods of data generation, which are sensitive to social and physical contexts, and based on methods of analysis which *'involve understandings of complexity, detail and context'* (Mason, 2002, p. 3). As already identified in Chapter Two this needs to be underpinned by an ecological approach.

Ecological research emphasises the need to give due regard to the relationship between person, environment and process (Altman & Rogoff, 1987). Rogoff, Radziszewska and Masiello (1995) identify key features to guide ecological studies (see Table 6:1). Similarly Bronfenbrenner argues for the need to research across interconnected aspects of the child's life over time (Bronfenbrenner, 1979).⁸⁷ These properties will be

⁸⁷ As we have seen, in the Bioecological model (PPCT), researching Process, Person, Context and Time is recommended. It is at the level of process where interactions and influences of the different aspects of daily life are truly understood (Bronfenbrenner & Morris, 1998).

addressed in methodology and data generation sections below. However, the issue of researching over time needs specific attention before proceeding.

Table 6.1: Key concepts in research design for sociocultural study (Rogoff et al., 1995, p. 127).

- | |
|--|
| <ol style="list-style-type: none">1. Use of activity or event as unit of analysis2. Roles of variation and similarity3. Importance of analysis of process and of development4. Integrated analysis of individual, interpersonal and community processes5. Cultural and historical embeddedness of inquiry itself |
|--|

Researching time as a process means longitudinal methodology needs consideration. In relation to child development, longitudinal study designs need to identify appropriate frequencies and intensity for data collection and to determine whether the observation frequency is adequate to examine the change process (Adolf & Robinson, 2008; Siegler, 2006). The microgenetic method is one approach to researching cognitive development over time. This method aims to capture change in behaviour as it occurs in order to understand the change process, which warrants dense sampling of events with frequencies of observations that can be daily or a few times a week, depending on the aspect of learning that is under study (Siegler, 2006; Siegler & Crowley, 1991).⁸⁸ For example, in one study it was found that by sampling motor skill development as frequently as daily, a great variability in skill emergence can be identified (Adolf, Robinson, Young, & Gill-Alvarez, 2008). Researchers using a microgenetic method base time sampling frequencies on knowledge of the rate of change in the child (Adolf et al., 2008; Calais, 2008; Siegler, 2006). This enables researchers to set optimal frequency of observations in their research of child cognitive development.

However, this method serves a different purpose than the methods needed for the research project being proposed here. In microgenetic studies, a micro-level, fine-

⁸⁸ By capturing data during activity, the child's adaptation to activity is readily noted and such a method enables this fine-grained micro level research to be conducted.

grained approach is applied in order to quantitatively detail the change processes for understanding developmental change in particular. In contrast, the current study aims to explore and describe the contextual environmental interactions over time from a qualitative perspective and not to target exact beginning and end states of infant emergent skills.

With this in mind, a number of studies were identified where the individual-environment relationship with development was the focus, within the context of routine activity: for example a mealtimes study (Valsiner, 1987), an object-play study (D. Pierce, 1996, 2000; D. Pierce et al., 2009), and a study of play with toys (Perinat & Sadurni, 1999).⁸⁹⁹⁰ Pierce's study was the most detailed, involving monthly video observations of 18 children over 18 months. Each of these three studies involved 15 minutes to two hours of observation and interview, with frequency of visits ranging from monthly to one visit every three months. These studies used varying frequencies of time sampling which supported the description of child-environment interactions from different stages in the child's development, based on the specific research question.

For this study a longitudinal design is chosen, recognising the importance of measuring change over time as a key element of ecological validity. When the intensity and frequency of observations is considered, monthly visits seem to offer adequate frequency, with enough time between observations to allow for change and to capture differences in person-environment transactions.

⁸⁹ Valsiner (1987) used videotaped observations of children during mealtimes over 18 months, with each child being visited every two to three months.

⁹⁰ Perinat and Sadurni's longitudinal study researched infants from 10 to 30 months-videotaping 15 minutes of free-play in the child's home every two months.

Selection of methodology:

In choosing the methodology, consideration was given to the range of approaches that come from a qualitative, interpretive tradition, including the core traditions of ethnography, phenomenology and grounded theory (Creswell, 2007; Luborsky & Lysack, 2006; Mason, 2002). The purpose and origins of each tradition guides decision-making on how best to answer the research questions.⁹¹ Furthermore, the ontological and epistemological position of the researcher in addition to the research question, already points towards some of these approaches over others. This section aims to identify the decision process in the research design while acknowledging the need for flexible guidelines that allow for inductive processes (Mason, 2002). While a wide range of literature on methodology was reviewed only key aspects are included here to illuminate the decision processes involved.

The overall project design is to carry out a sequential analysis over time of the child in the context of their natural home environments, engaging in self-directed play sessions with usual objects (indoors and outdoors). This study of children's home environments therefore requires an ecological approach so that the child and the play activities engaged in over time are considered in the contexts within which they occur. Though it is a developmental study, it is not based in a psychological framework but needs to be viewed from an ecological one that draws from multiple disciplinary perspectives in its conceptualisation.⁹² Tudge and Hogan (2005) highlight that it is in the field of cultural anthropology where the greatest amount of research of children in natural environments has been done: and this has been through the use of ethnographic methodology.

⁹¹ These traditions were reviewed extensively in order to understand their purpose and origin.

⁹² Although it is shaped significantly by an occupational science perspective.

Ethnography:

Ethnography is one form of qualitative research that supports understanding change over time in context. Ethnography relates to the description of people and social settings, taking into account habits and routines, symbols and meaning, goals values and social structures (Angrosino, 2007; Luborsky & Lysack, 2006). Ethnography employs observation and interviews in settings over lengthy periods of time so there is an ‘*intimate familiarity*’ with the social world being explored (Brewer, 2000, p. 11). Data is gathered from multiple sources but with observation (and specifically participant observation) being a core feature; with small cases being the focus rather than large sample sizes (Hammersley & Atkinson, 2007). The result forms an interpretive account that is microscopic as it focuses on details of social and cultural lives, and is described as a thick description (Geertz, 1973).

However, despite this consensus around exploring people’s lives in context, there has been little attention given to the physical nature of places, spaces and objects or artefacts in typical ethnographic studies (Hammersley & Atkinson, 2007). Hammersley and Atkinson note the trend to consider artefacts as a separate domain of study (i.e. material culture), but argue that ethnographic studies need to include rather than separate out the analysis of physical environments.⁹³ Consideration needs to be given to the material qualities of objects, the collection and display of objects, the opportunities that material objects offer participants, and how the activity involves protracted interaction with objects. In regard to the physical settings, they argue for attention to be paid to the sense of place, to how places are used and how places support or constrain activity (Hammersley & Atkinson, 2007).

⁹³ Such analysis can take into account the ‘*thing-ness of things in their material worlds and social contexts*’ (Hammersley & Atkinson, 2007, p. 134).

From this general perspective, a study of individual infants' play in the home environment seems to fit well with ethnographic, socio-cultural research. Furthermore, from Bronfenbrenner and Morris's framework, we have seen that attention to the socio-cultural setting is vital. So, by using an ethnographic approach, the study can take the ecological perspective it needs. Ethnography includes both observation, and listening and engaging in conversation. In this study, infants are the primary participants but with help from carers, shared understanding of the child's play habits, routines and meanings for the child and family can be explored. Equally, making regular observations of infants in their home environments allows for exploration of situations not readily described or interpreted through discussion. Places, spaces and objects can be observed and analysed in relation to their qualities, uses, opportunities and restrictions they provide for interaction, and meaning for the child and adult. This combination allows for the development of understanding of infant behaviour within the context of the family culture, which is a core element of an ethnographic stance.

Ethnographic and participant observation studies of play occupations have been carried out with children and families from within the discipline of occupational science (e.g. Bazyk et al., 2003; Knox, 1996; D. Pierce, 1996; Primeau, 1998). The common threads throughout these studies include the extensive use of participant observation and interview in the home or school environments being researched, with emphasis on identifying and exploring the nature and meaning of the occupation being observed. Furthermore, each study also addressed the physical environmental aspects of the socio-cultural contexts of these settings.

Ethnography has been criticised for not contributing to practice- for being overly descriptive without due attention to theorising or generalisation.⁹⁴ Yet from a qualitative perspective, description is interpretive and therefore in itself offers a form of explanation of the worldview of the people involved (Hammersley, 1992). As Sandelowski argues ‘ *such descriptions require the researchers to move farther into or beyond their data as they demand not just reading words and scenes, but rather reading into, between and over them*’ (Sandelowski, 2000, p. 336). Therefore, qualitative descriptive work such as ethnography can make a valuable contribution to understanding peoples’ lives. However, in order to address this issue more fully, many researchers adopt other methods to support fieldwork and analysis. Grounded theory is one example. The following section introduces grounded theory and reviews considerations in using this combination for research.

Grounded theory in ethnography:

Grounded theory emerged from ethnography and sociology, and evolved from the work of Glaser and Strauss (1967) into a methodology in its own right. It is influenced by Strauss’s work with symbolic interactionism and in Glaser’s quantitative background. Consequently, it is often viewed as a general methodology that comes from both a qualitative and quantitative paradigm (Holton, 2010).⁹⁵ In grounded theory, the viewer (researcher) is considered to be a generator of data and analysis through interaction with the viewed (participant), while action is a central the focus of study (Charmaz, 2006). However, it is now considered primarily to be a qualitative systematic approach to data analysis (Timmermans & Tavory, 2010).

⁹⁴ Descriptive work is often seen as less valuable than quantitative work and viewed as ‘*less sexy*’ (Sandelowski, 2000, p. 334).

⁹⁵ For example, Charmaz developed a social constructivist approach in grounded theory for qualitative research that marked a shift away from its positivist underpinnings but yet still valuing its pragmatist origins (Charmaz, 2005).

Grounded theory supports the process of data collection and analysis using explicit procedures involving fundamental techniques that include simultaneous collection and analysis of data, theoretical sampling, constant comparison in data analysis, memo writing, identification of core categories and theoretical saturation (Charmaz, 2006). Concurrent data analysis supports early development of concepts, which shapes further data collection, thus allowing for a repetitive interplay between the different parts of the process. Such interplay offers support to a longitudinal study as it provides a mechanism for early analysis which feeds back into the subsequent home visits that take place during the research process. This allows for flexibility in the method of data collection while also supporting a close relationship between data and conceptualisation (Charmaz, 2006). Constructivist grounded theory views these processes as flexible and serve as a guide rather than being a set of principles that must be adhered to (Charmaz, 2006).

Both grounded theory and ethnography have common roots in the Chicago school but have since gone separate ways (Charmaz & Mitchell, 2001). However, they can still be used together and there are advantages in considering this partnership. By combining both, the researcher can be supported to keep an eye on the bigger picture of the research setting (from an ethnographic approach), while at the same time enabling fieldwork to be streamlined and focused on moving towards interpretation (from a grounded theory approach) (Charmaz & Mitchell, 2001). Charmaz and Mitchell (2001, p. 161) recommend this combination of methodologies as grounded theory can '*sharpen the analytic edge*' of ethnographic studies with its emphasis on process. Equally they argue that ethnography ensures grounded theorists stay close to their participants and the data emerging from the contexts being researched (Charmaz & Mitchell 2001). However, the choreography between these methodologies is not yet clearly defined.

Timmermans and Tavory as ethnographers in exploring this partnership, reflect that it is difficult to know whether a grounded theory/ethnographic study results in better research outcomes or not, as researchers vary greatly in their application of these methodologies and methods. Indeed, few studies give attention to explanations of how a combined study works in its joint methodology and analysis processes (Timmermans & Tavory, 2010). So it appears that while the idea of grounded theory ethnography is valued, the reality has not been critically reviewed to any great extent.

For this study, a grounded theory oriented ethnographic approach is being applied, to support analysis and also because of the fact that '*grounded theory may work better to get a first analytical grip on one's research rather than for extensively analysing long-term data*' (Timmermans & Tavory, 2010, p. 504). The researcher is warned of some inherent dangers however: to avoid being overly conceptual; to keep the ethnographic grounding; to avoid getting lost in overly detailed coding and memo writing and to keep track always of the overarching research questions (Timmermans & Tavory, 2010).

Summary

To summarise, a qualitative ethnographic approach, using grounded theory to produce substantive descriptions is to be used (Charmaz, 2006; Timmermans & Tavory, 2010). This study requires research in the setting of the home- it is an observational study primarily that aims to explore both description and processes of the home setting. Of all of the research methodologies, ethnography appears to be the one that best fits the research questions, offering a framework and strategy that seems most effective for achieving the outlined aims of this study. While grounded theory was initially considered as the primary methodology, it did not have the goodness-of-fit that an overall ethnographic approach offers. For example, in grounded theory, the role of

observation is not well explicated, whereas it is a core aspect of ethnographic work (Timmermans & Tavory, 2010). However, ethnography in itself has limitations and so the study can be best described as an ethnographic study with a grounded theory approach to data analysis.

METHODS:

In doing fieldwork ethnographers use three sources for data generation: from what people say and do, and from the artefacts people use (Silverman, 2005). Two core methods are used to generate such data: Observation and Interview. Hence, a '*multiple methods*' (Silverman, 2005, p. 61) or multimethod approach was used for this study to both enrich explanations and to inform the study from multiple perspectives.⁹⁶ Furthermore, multiple and frequent sources for data generation contribute greater depth and breadth which supports credibility and trustworthiness of findings (Charmaz, 2006). This section outlines key issues in the use of observation and interview methods for this study.

Observation methods for researching with infants:

Observation plays a key role in studying the world of infants. Many of the methods available to study the social world focus on words and conversation, but for infants this does not allow for such negotiations of understanding as it would for the adult world. Observation methods allow the researcher to explore what infants do, and how they do it in order to understand their world. In observing infants' play, consideration needs to be given to what kinds of play are to be observed. Other studies have emphasised choosing only free play or structured play without siblings (e.g. D. Pierce, 1996). In

⁹⁶ Multimethod describes the use of multiple strategies from the same research tradition rather than across the qualitative and quantitative spectrum (Fontana & Frey, 2003).

these cases, free play related to the child playing independently of others and demonstrating free choice in play. This is typically with the intention of controlling variables in each setting. However, Valsiner argues that researching children's free-play is least interesting or valuable, as it does not allow for truly capturing evidence of the child's development in context (Valsiner, 1987). As interaction is a naturally occurring aspect of daily play in infants, it was decided not to set such parameters on this study. Therefore, no attempt was made to influence the play behaviour or events as they occurred.

Video is used in this study as a primary method for observation in order to support the repeated analysis of the relationships being observed from each unit of activity (Kemppinen et al., 2005). Pierce talks of the advantages of using video to record the experience as it occurs '*complete with voice, sequence, context, gesture*' (D. Pierce, 2005, p. 9) so it captures the spatial, temporal and interactive elements of any activity. However, researching with video technology is a recent development in qualitative studies, which results in there being as yet no clear guidelines for use (Mason, 2002).

There are disadvantages and limitations to the use of video. Consideration needs to be given to the reaction of participants to the presence of video. Research evidence for use of video with children is inconclusive on this issue: some say time needs to be given to a participant to adjust and accommodate, while others found the effects are not significant (Brentnall, Bundy, & Scott Kay, 2008). Ratcliff argues that children become accustomed to cameras and they are no more intrusive than note-taking (Ratcliff, 2003). To minimise the potential distraction of a camera, a digital, hand-held pocket-sized camera was sourced and used for the study.

Studies have shown that the presence of a camera is likely to affect the social interactions between carers and other siblings. Researchers from parent-infant

psychotherapy where video is used frequently report that even the most confident participants find videoing quite stressful (Woodhead, Bland, & Baradon, 2006). They recommend beginning sessions with the comment ‘*be with your baby as you usually are*’ and to be unthreatening and non-judgemental as possible as the researcher (Woodhead et al., 2006, p. 147). For this study, video was used in an unobtrusive way to record play interactions.⁹⁷ Its purpose was to support the research process and not to limit it, so video was used with discretion during the study.⁹⁸

Video-use has been accused of representing a positivistic approach to research, whereby data is considered to be quantifiable or as representing an ‘authentic’ view of reality. However, visual sociology now sees visual media from a different perspective: where the image needs to be interpreted socially and framed within the context of the community setting (Angrosino & Perez, 2003; Pink, 2001). Therefore, any images captured on video are dependent on context and meaning. Consequently, for this study, while video was the primary method of observation, the interview with the family member at each observation session played an important part in the process. The aim was to give due regard to representation (Mason, 2002) and with adequate emphasis on meanings of experiences in naturalistic settings (Denzin & Lincoln, 2003). Therefore, interview and observation are interdependent in the data generation and analysis process.

Interview methods:

The most common approach to data generation in qualitative studies is to use participant interviews (Polkinghorne, 2005). While many studies aim to interview participants only once, multiple interviews with the same person are recommended as

⁹⁷ It was also used on occasion for reviewing with families following observation.

⁹⁸ For example, the video was not used to record events where the infant was distressed or sleeping.

this approach allows for greater depth and breadth (Polkinghorne, 2005). For this study, monthly interviews were carried out over one year with each mother or carer.

In environmental research using a transactional approach attention must be given to the aspects of context that can be hidden (Altman & Rogoff, 1987). Specifically in relation to infants, there are many hidden aspects. For example, during infant observations it is clear that the carers are in a position to interpret behaviours and give meaning to the play activity based on their knowledge of the child. The meaning and context can only be explained in this case by the carer and not the observer. Therefore, to support understanding and social construction of meaning, the child's play was discussed during the interview with the parent for shared insight into the infant at play. The 'knowledge' generated therefore aimed to be '*negotiated, contextually based*' (Fontana & Frey, 2003, p. 62).

For ethnographic interviewing, open-ended or grand-tour questions are advised to elicit participants' perspectives and to minimise influences from the researcher's own world (Spradley & McCurdy, 1972). Equally, in grounded theory the interviewing approach commonly involves the use of open-ended questions in the context of a flexible style of interview (Fassinger, 2005). Consequently, researchers **learn from** other people rather than **study** them (Spradley 1979).

However, the common nature of interviewing also has a negative side, as the researcher may assume that the process will be easy (Fontana & Frey, 2003). Furthermore, interviews need to go beyond basic discussion and description of processes. Therefore, structures were implemented to support thoroughness in applying interview methods. Semi-structured interviews were chosen as a starting point for the study to support the development of depth and breadth. An interview guide was developed (see Appendix C) to ensure consistency in the approach to observation analysis during each session and to

allow for comparison across the different infants involved in the study (Bryman, 2004).⁹⁹ Furthermore, a topic guide (Appendix D) was developed to support interview interactions in a more fluid way (Mason, 2002).

Note making and transcription as part of ethnographic grounded theory:

Within the grounded theory analysis framework, note making is central, in the form of both memos and field notes: memos to keep note of coding and concepts, including definitions of same, in order to keep track of thinking; and field-notes to note observations and initial reflections throughout the data collection and analysis process (Bryman, 2004; Silverman, 2005). A systematised approach to note making was identified and used for the current study as a basis for trustworthiness using guidelines from Spradley (1979). This included the use of short notes at the time of interview, a fieldwork journal to record problems and ideas that arose during each stage of fieldwork and a provisional running record of analysis and interpretation along with writing memos.

Summary

The final research design aimed to carry out a sequential analysis over time of the infant's play behaviours with usual objects in natural home environments. The study was designed to be longitudinal in nature and to take place over 12 months. The study utilised a naturalistic design in which no effort was made to control any aspects of the child's day to day life and where typical play processes were observed in the child's home setting. A qualitative ethnographic approach, using constructivist grounded theory

⁹⁹ However, the purpose of this interview guide was to guide and not limit the researcher- it is viewed as a means of ensuring the core focus of the study is kept in mind.

to produce substantive descriptions was used, using a multimethod approach to data generation, through the use of observation, video, and interview methods.

REFLEXIVITY: THE RESEARCHER AS OBSERVER AND INTERVIEWER

One key aspect within this research design is the use of self as a research tool. Researchers cannot approach ethnographic study without due regard to their own role and the impact this may have on the entire research process. The researcher is an active agent in the process of exploring and analysing the community in which she works, especially when using a constructivist approach. While the term ‘gaze’ is often used to describe the ‘neutral’ observational role of the researcher, it is still none-the-less a potentially biased and limited view of the world being observed. This leads to the need for rigour, clarity, honesty and overall reflexivity in the researcher, both in relation to him or herself and in the context of the community to be explored.

Reflexivity and observer identity:

Reflexivity is the term used to describe this need for transparency- for being clear on the potential impact of yourself as a person on the knowledge of the social world you may generate in your research (Bryman, 2004). It relates to the need for being explicit about personal values and attitudes that may influence and shape the research process along with exploration of roles and relationships (Hammersley & Atkinson, 2007).¹⁰⁰

There are many parts to the consideration of who I am as a researcher: in uncovering the aspects of myself that may influence the research process, in deciding how to present myself and deal with potential power issues that a research situation entails, and in

¹⁰⁰ Indeed Hammersley and Atkinson (2007) argue for placing reflexivity in a more central role, as all social research is based on observation and participation of the researcher.

considering status, gender, race, age issues that may play a part in the process (Fontana & Frey, 2003).¹⁰¹

I need to start with how I act as an observer. Although demands were placed on researchers in the past to minimise participation and influence on the communities in which they were conducting research, contemporary ethnographers do not see participation as such a threat. Instead the negotiated role of the researcher and the participants are recognised and the emphasis has shifted towards being members of the environment, with researchers who do not engage in activities being named as ‘*peripheral-member researchers*’ (Adler & Adler cited in Angrosino & Perez, 2003, p. 113). The peripheral-member role is one where the observer is mainly an interviewer but does little participation otherwise. However, in taking on such a role with children, there is a problem:

An observer, who hypothetically could be an engaging social partner for a child, becomes a problematic figure in the child’s world if the adult remains detached and resists the inevitable pull of the child towards engagement (Lawlor & Mattingly, 2000, p. 149).

Lawlor and Mattingly argue that being such a removed presence in the child’s environment may be even viewed as highly intrusive in the negative impact it has on the child’s behaviour (Lawlor & Mattingly, 2000). They recommend a negotiated presence or situational identity which is flexible and responsive to the dynamics in the environment (Angrosino & Perez, 2003; Lawlor & Mattingly, 2000). This is the stance I took on, in order to minimise the impact of my presence as much as possible and to act as a typical visitor to the home. The danger in developing a situational identity is that objectivity may be reduced. However, current thinking on the issue of objectivity

¹⁰¹ The principles which will shape answers to these questions are informed by feminist research where the emphasis shifts to allow for minimising status difference and a general commitment to maintaining ‘*an integrity of phenomena and preserving the viewpoints of the participants*’ (Fontana & Frey, 2003, p. 83).

questions its desirability as a feasible goal (Angrosino & Perez, 2003). Participation was seen as a more legitimate base from which to act. The overall goal of developing and sustaining trust and rapport guided the researchers' responses and the need to be flexible allowed for this.

I considered that being a woman and mother and presenting myself as such was a position from which to build trust and rapport, so this was viewed as a positive stance from which to begin, specially as the participants were mothers themselves. However, the age issue was perhaps more complex as some mothers may view it as a threat to be visited by an experienced mother when they might be only first time mothers themselves. In each family, the mothers often discussed parenting with me and my own experiences seemed to provide a basis from which to explore these issues further, rather than being a negative influence. This was helped by reflection on how I was going to act in each setting. I realised that I was also a novice in studying home settings and used this perspective to my advantage: to take on the '*acceptable incompetent*' role (Hammersley & Atkinson, 2007, p. 79). This supported me to ask what may have seemed basic questions of the participants. I did this by placing myself in the role of being too far removed from infancy now my children are adolescent, and taking the stance that early motherhood is so busy that we don't get the time to take stock and reflect on what is happening during this time.

Impression management is another issue to consider (Hammersley & Atkinson, 2007). With regard to personal appearance, there was a need to visit with families with appropriate dress for the situation. The intention was to dress respectfully, but according to the social setting as I was visiting over a twelve- month period and did not want to be over or underdressed, and to make families feel uncomfortable. Being with babies and infants requires dress that can adapt to lifting and holding, and for being on the floor

where necessary. Appropriate clothing ensured this could be done with ease. Cues were noted from the families visited, as to whether make-up might be appropriate or a more casual approach to dress required.

Power is another issue for consideration. With regard to the adult participants, the status of being a researcher and being involved in education and learning may have been a potential factor. The fact that participants had volunteered to take part was an assurance that they may not have seen this as a barrier from the out-set. However, I remained watchful and aware of the potential influence of power issues in the relationship over time, and worked to minimise it where possible. Power issues in relation to the children being studied are another concern. On consideration, the fact that the infants were being observed rather than interviewed, gave them an element of power or control. In the observations, the infants took charge in their play and the observations appeared to minimally influence their activities of choice.

DATA GENERATION:

Participants and sampling:

As this is a qualitative study, random samples are not the goal. Purposive sampling, using a snowball method, was used to target a specific group of people: parents who have new-borns and one-year old infants. The snowball method is a form of convenience sampling using initial contacts to expand to others (Bryman, 2004). This is a method of choice when there are no clear ways to access the research field, and is seen as a way to get to hidden populations (Noy, 2008). As mothers of young children are not easily identified, a snowball method supported identification of participants in a different way.

Recruitment was attempted initially through local groups such as the Cork Childcare Committee, the National Childbirth Trust, acquaintances and community groups. Time was spent during August, September and October 2009 attending meetings and visiting with community childhood settings that cater for infants. However, each participant that finally took part in the study was identified instead through word of mouth and common networks of people, which characterises a snowball sampling method.

Initially, I planned to recruit a sample group of at least ten infants (five new-borns and five one-year olds). This was informed by Pierce (1996) who studied 18 infants in the home and found that theory saturation was reached after an analysis of five cases. A sample size of five for each age group was therefore used as a guideline based on her work. However, during the first two months of data collection, it became clear that ten was too large a number for monthly data collection, when transcription as well as

travelling and home visits was taken into account. On review, the final sample included five infants: two new-borns and three one-year olds.¹⁰²

A number of considerations such as inclusion and exclusion criteria are required for sampling. For this study, any Irish-born parent of a typically developing new-born or one-year old infant was considered a suitable candidate. The parent's nationality was regarded as important in order to capture the socio-cultural aspects from an Irish perspective. It is recommended to aim for a wide range of individuals in any sample group in order to benefit from different perspectives and views of the world (Bryman, 2004). The resulting profile of families who participated does indeed include a wide range of individuals, as they live in both rural and urban settings, from across County Cork and Kerry, and consist of families of one, two and three children, which brings important differences to the study. However, their socio-economic backgrounds are less varied, with all families having two incomes and all mothers having completed second-level education (see Appendix E for participants' family profiles).¹⁰³

So to summarise, sampling was achieved by targeting a specific group of people rather than seeking a random sample, using a snowball sampling technique to connect to other potential participants. Furthermore, theoretical sampling was supported through the longitudinal design of the study with monthly visits to ensure depth and breadth of data generation across time.

Analytical approach:

The challenge in ecological research is to manage data collection without being overwhelmed by the multiple phenomena being observed. It is not possible to capture

¹⁰² Ethnographic studies typically involve small numbers of people or single settings to facilitate in-depth study (Hammersley & Atkinson, 2007).

¹⁰³ These families represent typical Irish families in many ways based on demographic information that shows they form part of the majority groups (for example, 62% of Irish mothers have completed 2nd level education) (OMCYA, 2010b).

the whole picture, therefore it is acknowledged from the outset that only a partial picture can be realistic (Silverman, 2005 p. 51). Silverman recommends choosing a clear analytic approach with a consistent theoretical orientation, or a zoom lens to make the task manageable. The metaphor of a zoom lens encourages a flexible perspective: of being able to get close to the data but also pull back, which is congruent with a grounded theory approach. As we noted earlier, there are some guidelines for what to zoom in on in social research (see Table 6:1). Two core concerns will now be introduced specifically: units of analysis and analysis of process.

Units of analysis:

Data collection and analysis from an ecological ethnographic position demands an approach that can deal with analyses of events, activities and processes. One approach is to consider whole events or activities as units of analysis rather than a more traditional view of individual analysis (Rogoff, 1993). In this way, activity is preserved as an entity rather than being segmented, and emphasis can be placed on the process rather than viewing separate context-free characteristics (Rogoff et al., 1995). This applies equally to analysis of observational data, where coding by incident (activity) and comparing between incidents is recommended (Charmaz, 2006).

In order to determine the units of activity, Ratcliff recommends examining the sequence of events as captured by video to determine boundaries between activities. These boundaries are recognised by '*locating major shifts in activity*' (Ratcliff, 2003, p. 121).

Analysis of process and development: Using a Process Person Context Time Model

The study of environments from a transactional world-view considers person-environment relationships to be holistic units with each aspect being of equal importance (Altman & Rogoff, 1987). This requires the development of procedures to describe the processes being observed in the events. Firstly, Bronfenbrenner's

description of the microsystem is used to determine events and activities from both a physical and social perspective:

A microsystem is a pattern of activities, roles and interpersonal relations experienced by the developing person in a given face-to-face setting with particular physical, social and symbolic features that invite, permit or inhibit engagement in sustained, progressively more complex interaction with and activity in the immediate environment (Bronfenbrenner,1993 p.15).

Secondly, the application of the Bioecological model is recommended as a way to ensure a balanced approach to researching child development in context and analysis of process: PPCT (Bronfenbrenner & Morris, 1998):

1. Process- Proximal Processes:

Bronfenbrenner reviewed contextual developmental processes and identified two core categories: processes of social interactions, and processes of engagement in activities and tasks. These key categories combine to become proximal developmental processes and are the starting point for consideration of the person.

2. Person:

Personal characteristics that need to be considered relate to those that are context-oriented and are *'attributes of the person most likely to shape the course of development'* (Bronfenbrenner, 1993, p 11). This includes attention to aspects of the person's temperament and motivation to engage in activities also.¹⁰⁴ It may seem that this emphasis on specific traits of a person is not congruent with a transactional approach, but the emphasis here is not on the separate elements but on how the traits or characteristic influence or are influenced by the environment.

¹⁰⁴ Note: The person refers to not just the child but also the parent or adult involved in proximal processes.

3. Context:

Context refers to the flow of events, the nature of the activities and the meaning of those activities to the participants, in particular settings (Altman & Rogoff, 1987). In the microsystem of the child's home, contextual characteristics include objects and spaces that invite manipulation and exploration, noise levels, structured routines, and the aspect of as '*temporal regularity*' (Bronfenbrenner, 1993, p. 16).

4. Time:

Bronfenbrenner and Morris recommend considering time across three domains: Microtime, which relates to the continuity or discontinuity within ongoing episodes of proximal processes, Mesotime which relates to the occurrence of these activity units or an event across days or weeks and Macrotime, which refers to changing events or expectations from a societal or cultural level (Bronfenbrenner & Morris, 1998). The longitudinal nature of the proposed study allows for consideration to each of these aspects of time.

Piloting:

Prior to primary data collection, a pilot was carried out in May and July 2009 with two infants in their homes to explore the video and interview design and to develop coding protocols for the analysis of the primary video data. An advisory group of two researchers (experienced in observations with children) were recruited to become peer reviewers. Their role was to support inter-observer consistency and in supporting the coding and analysis to ensure internal reliability or dependability (Bryman, 2004). Following each interview and observation, a meeting was held with the peer-review

team and videos explored and analysed together. This identified the need for common language in analysing video data which will be explored later in this section.¹⁰⁵

The primary finding of the pilot phase highlighted the need for flexibility during home visits. For example, when the baby needed attention, there was a requirement for pauses in the interview; in other activities, there was a need to observe and comment on what was happening which led to further discussion. This approach was confirmed in further communication with Pierce, who reported the need to prioritise informality in home-based research as was the case with her study (D. Pierce, personal communication, August 20, 2009).

A secondary finding was in relation to the use of other tools for data collection such as the sensory profile of the child's sensory preferences and self regulation (Schaaf, Anzalone, & Burke, 2001). This tool was considered among others as part of data collection related to child's characteristics (Bronfenbrenner & Morris, 1998). However, following both pilot visits, the use of such specific measurement instruments for temperament did not appear to contribute to the study due to the settled nature of the infants and the data that was generated through other means.

For a researcher, using tools to aid data analysis in a systematic way ensures a consistent approach and supports rigour in carrying out procedures. In their review of Computer Assisted Qualitative Data Analysis Software (CAQDAS), Lewins and Silver reviewed the use of TRANSANA software (Fassnacht & Woods, 2005) to support qualitative video analysis and found it to be a reliable and suitable tool for simultaneous analysis of video and audio data (Lewins & Silver, 2006). Consequently, this software

¹⁰⁵ Following review also, the interview and topic guides were developed further to ensure consistency in the approach to interview and to allow for comparison across the different infants involved in the study (Bryman, 2004).

was used for working with data transcription. However, it was decided not to use this software to support the coding and analysis process due to the high level of technical expertise required to use it for these functions.¹⁰⁶

Generating data

Data generation began with the first visit in October 2009. For the first meeting with the child and mother, demographic data was gathered along with a history of the infant's development to date and some environmental information. Each visit lasted from one to two hours, with observations of play being from ten minutes to one hour in length, depending on the wakefulness or engagement of the infant.

During each visit, a small hand-held Flip™ video camera was used to record both the observations of the infant in the home as well as the interview. Care was taken to minimise the obvious presence of the camera and so it was held to the side or placed on a stand, rather than being held to the face (as is typically done when using a camera) during the visit. Each infant ignored the camera with very few incidents suggesting their awareness of it. On completion of the study, parents agreed that it was unobtrusive and did not seem to change their child's behaviours.

To support understanding and social construction of meaning, the video originally was intended to be used for shared viewing of the infant at play after each observation session with the parent or carer. This was to support a shared construction of understanding based on supported reflection (MacDonald, 2008).¹⁰⁷ However, the home environment proved a difficult place in which to implement this aspect, as it required the full attention of the mothers to view and discuss their thoughts. Consequently, it was

¹⁰⁶ I completed training in the use of TRANSANA software in September 2009, which was during data collection rather than during the piloting phase (which was not ideal).

¹⁰⁷ In her study, MacDonald used photographs of each interview to share meaning between the participant and researcher, and therefore to support data generation and analysis in a co-constructed way (MacDonald, 2008).

apparent after the first month, that an alternative approach was required. Instead, during visits, some themes or events from the previous visit were used for further discussion. For example, during January, Karen's mother talked about being at home and not going out with the children- Karen 'made strange' with me (i.e. was noticeably wary of me as a stranger in her home). For the next visit I asked about this behaviour- was it due to being restricted to the house so much. It only then emerged that Karen is in very social environments weekly when she stays with her Nan (grandmother). This had not come up at the previous visit. It was a new routine for the family. By being able to bring up thoughts and reflections in subsequent visits, further uncovering of ideas and processes, events and experiences for both the child and family emerged. Instead of using video for shared construction of meaning therefore, each interview began with some reflections on what took place during the previous visit, and events were explored and revisited in discussion together. This supported the interpretive validity of data being generated (Sandelowski, 1998).

During the year, a number of incidents occurred that effected data collection- children were unwell, or weather problems meant that dates had to be changed. Consequently, it was not possible to visit on the same day every month. The goal instead was to visit **within** the framework of each month. For Amy's family, one month was missed due to a serious illness of a grandparent. However, this was the only cancelled visit. All the other families completed twelve months of contact.

Another significant incident occurred in July 2010, when Hannah's family moved to the Netherlands due to the recession in Ireland. Having reviewed the options in relation to the study, Hannah's mother agreed to continue being involved in an amended way: for three months she videoed playtime and then discussed Hannah's routines and play

habits with me through a phone interview.¹⁰⁸ These play sessions were different to those observed during previous home visits.¹⁰⁹ In typical home visits, play events were discussed as they happened and this seemed to capture more immediate thoughts on why or what the infant is doing. It seems to be similar to Schön's work on reflection-in-action, where workers are known to reflect in the moment, and consider different aspects of events than when asked to reflect back on what has happened (Schön, 1983).

During data generation note taking was carried out based on Spradley's guidelines (Spradley, 1979). Initial notes were taken immediately following the interview. These then formed the fuller more detailed field notes typed within 24 hours and included reflections on the interview and experiences that are noted by the researcher. Each interview and video record was then transcribed prior to analysis, using TRANSANA software (Fassnacht & Woods, 2005), which allowed for simultaneous transcription of video and audio data. Transcription of video focused on description primarily while interviews were transcribed verbatim to support reliability (LeCompte & Goetz, 1982). Combining recording and transcription ensures data are captured in a consistent way, reducing the reliance on memory and allowing for more thorough examination of the processes being observed (Silverman, 2005). Memos were developed as ideas and concepts emerged to capture themes.

Within three months, it had become apparent that this workload was not sustainable and so a research assistant was recruited who worked on interview transcriptions while the researcher continued with transcriptions of video data. Data were handled in a confidential manner as guided by best practice in ethical issues related to research (Dublin Institute of Technology, 2008).

¹⁰⁸ Video was sent by post between the Netherlands and Ireland during these months, which enabled me to review the video before each phone interview.

¹⁰⁹ In relation to the play being observed, Hannah was now being videoed playing as compared to being videoed playing **during home routines** when she was in Ireland.

Summary

To summarise and conclude, data were generated from interviews, observation (video) and note taking. Each of these separate data formats were converted into typed format. Interviews were transcribed verbatim. Field-notes were typed and video observations were transcribed based primarily on observations rather than interpretations, so that the actions and transactions in the environment would be captured as accurately as possible. This allowed for review and re-interpretation throughout the analysis process. Data generation began in September 2009 and finished in October 2010. On average each month, about 100 pages of basic data were generated across the five families being visited. By the end of the study, 59 interviews were completed with over 4,000 miles travelled. The next section addresses the journey through exploration and identification of an analysis process to support to next stage of the study.

FROM DATA GENERATION TO DATA ANALYSIS

In qualitative research, data analysis is typically included within the methodology section, or is often interwoven with findings. However, there is an argument for placing specific emphasis on data analysis as a process, in order to explicitly establish the thought processes at play. As Dickie argues:

Finding the questions to guide the analysis is critical to good qualitative research.....It isn't so important to know that someone coded following the procedures outlined by a particular authority, but rather to know what questions- what confusions- led the researcher in the direction taken (Dickie, 2003, p. 52).

This section outlines some of the processes used in analysis for this study within the context of current debates and challenges, in the spirit of openness and transparency. Firstly the step-by-step process is introduced, then some of the considerations that inform this process are addressed along with an exploration of specific questions that arose during early data analysis and subsequent decisions made as a result.

An introduction to the step-by-step process of analysis:

It is important to remember in analysing data that the purpose is to reduce data: to select and simplify it in order to make it manageable (Ryan & Bernard, 2003; Silverman, 2005). Analysis is informed by the conceptual origins of this study which are constructivist, guided by an ethnographic tradition with a grounded theory approach to analysis (Charmaz & Mitchell, 2001). As we have seen, Charmaz maps out a number of steps, which she promotes as a set of principles rather than prescribed steps that have to be strictly adhered to.¹¹⁰

¹¹⁰ As outlined earlier in the chapter, this included simultaneous data collection and analysis, a two-step coding process; use of comparative methods; memo writing aimed at construction of concepts; sampling towards refinement of theoretical ideas and integration of a framework as an outcome (Charmaz, 2006).

Each data collection episode used methods that included video, observation and interview, followed by the writing of field-notes and memos. During the data generation phase, data from each episode were analysed and coded collectively. For the interview, coding line-by-line was used as a first step, to capture detail and potentially hidden meaning (Charmaz, 2006). This method aims to support analysis that stays close to the data and to avoid importing concepts or jumping to categorisations too soon.

For the video, coding by event or activity was used to support the analysis of process (Rogoff et al., 1995). This was also supported through the use of active verbs or gerunds, to indicate processes such as crawling, doing (Altman & Rogoff, 1987; Charmaz, 2006). Video analysis was guided by the PPCT framework, to ensure the observer was attending to process, as well as person and context over time. Each unit of activity was identified by observing the video fully. Transcription was based on these identified units of activity. Each video was transcribed in full, using some contextual, interpretive descriptions to ensure context was contained within the descriptions. The video was then 'inventoried' which included noting of objects, spaces, and places used in the physical environment, which is common in ethnographic research. This open-coding stage formed the first step of the coding process (Charmaz, 2006).

Analysis occurred directly following each home-visit as much as possible to allow for simultaneous data collection and analysis, to support conceptual development from early on in the process (Charmaz, 2006). Codes were identified through simultaneous analysis of data from video, interview and field-notes (Charmaz, 2006). By collating data from both video observations alongside interview data, the integration of codes can occur if the codes fit. Ratcliff argues that this aspect of the research process is difficult to decide on prior to the study, and that it '*may require some trial and error, particularly in the early phases of analysis*' (Ratcliff, 2003, p. 120). Focused-coding

then formed the second stage of the coding process where open codes were checked, reviewed and assembled into categories. Comparative methods were used then to compare between activities, and between units of meaning that are identified in the interviews. This supports the development of focused codes and subsequent categorisation of these at a more theoretical level (Boeije, 2002; Charmaz, 2006). See Appendix F for examples of interview and video transcripts and coding.

Researchers are urged to avoid early categorisation of data but instead to focus on questioning and identification of problems to help with further analysis and to develop lateral thinking to explore relationships between models and theories as analysis progresses (Silverman, 2005). Table 6:2 outlines the research questions and presents an overview of how they link with the methodology, methods and data analysis processes for the study.

During the course of early data analysis, it soon became apparent that the research questions were based on some assumptions and needed reworking. For example, the primary research question focused on a child's interactions with the physical environment in the home. There was an assumption that the home environments were 'known'. Early analysis identified aspects of home environments that were new and unexpected. Therefore, the research questions in Table 6:2 emerged as more appropriate and more congruent with the research study being undertaken and during initial analysis were expanded to reflect the evolving focus on concern.

Table 6: 2: Research questions linked with data collection and analysis methods.

Research questions:	Data collection method/ tool	Data Analysis:
<p>1. What is the nature of the home social/cultural environment?</p> <p>2. What is the nature of play in the home environment?</p> <p>a) What are the characteristics of the home environments in relation to objects and space?</p> <p>b) What in the environment does the infant find appealing over time?</p> <p>c) What are the customary patterns in the use of space in the home environment?</p>	<p>Data Collection methods:</p> <p>a) Video to record how child uses environment</p> <p>b) Interview carer</p> <p>c) Memo and field notes</p> <p>a) PERSON:</p> <p>a) Analysis of video with carers input</p> <p>b) PROCESS:</p> <p>a) Map object use over time- identify and describe</p> <p>c) CONTEXT:</p> <p>a) Map space use over time- identify and describe</p> <p>d) TIME:</p> <p>a) Collect data over time: monthly over 12 months</p>	<p>GENERAL:</p> <p>UNITS OF ANALYSIS:</p> <p>Activities as units of analysis</p> <p>ENVIRONMENT:</p> <p>Mapped and coded for what is present in the environment and how spaces/place/objects are used using PPCT</p>
<p>3. What is the nature of the infant's interactions with the physical home environment over time?</p> <p>a) How do infants participate in their physical environments over time?</p> <p>b) How do they use their physical environments?</p> <p>c) What do infants do with the environments afforded them?</p> <p>4. What is the developmental sequence in relation to use of space?</p> <p>5. What are the attributes/affordances of the physical environments that match/support this developmental sequence?</p>	<p>CHARACTERISTICS:</p> <p>1. List of spaces and objects used- physical characteristics</p> <p>2. Social characteristics as captured in interview and video</p> <p>3. Cultural characteristics as captured by interview and video</p> <p>ENVIRONMENT:</p> <p>4. Match list of spaces and objects with affordances which appeal to the child or are accessed by the child</p> <p>5. Social and cultural source of appeal to be identified and described from video and interview</p>	<p>GROUNDING THEORY FOR ANALYSIS:</p> <p>Video: Transcribing and video analysis using computer programmes. Coded.</p> <p>Interview: Analysed by audio recording and transcription. Coded.</p> <p>Field notes: Analysed. Coded.</p>
<p>6. What are the characteristics of the transactional process between infant and environment?</p>	<p>PATTERNS AND ROUTINES:</p> <p>6. Analysis of typical day routines</p>	

In applying these approaches to data analysis, a number of considerations arose:

- Video analysis can be carried out in different ways- what is the most appropriate method to apply for the purpose of this study?
 - How can a researcher develop a consistent language to analyse video data- where the data is not presented in a language format but in a visual one?

- Once the issue of language is resolved, to what extent do all the video events need to be transcribed?
- How can a coding scheme for video data be developed that remains true to a qualitative approach?
- What is the appropriate process to be applied regarding constant comparison in a longitudinal study?
- How can analysis be approached to ensure maximum trustworthiness?

The next section addresses these issues and presents some of the arguments for different approaches and decisions to be made, and final choices that were made for this study.

Video analysis:

Using video in research has many strengths and weaknesses, along with considerations and limitations. Perhaps because video is so effective to capture context, a dilemma arises when trying to use video segments for analysis. When video is transcribed for example, the researcher already needs to decide what words to use as this is a coding process in itself. Furthermore, observed events can be coded in such detail that what results is a checklist of elements such as objects used, skills involved which are applied then to subsequent videos. The danger is that analysis becomes more quantitative in nature.¹¹¹ Herein lies the challenge: to consider how to develop a qualitative analysis process for video without taking on a quantitative tone to the process.

A review of research approaches using video in the study of children was carried out and some key characteristics were identified that applied to this infant study(e.g. Jordan & Henderson, 1995; Ratcliff, 2003; Rogoff et al., 1993). This review led to the application of an approach that is a combination of the Microanalysis approach and Collier and Colliers' approach (Table 6:3).

¹¹¹ This appears to be an unexplored or unresolved issue in the research methods literature to date.

Table 6: 3: Outline of stages in video analysis using two different approaches:

Microanalysis Process (Erikson, cited in Ratcliff, 2003)	Collier & Collier, (cited in Ratcliff, 2003)
<ul style="list-style-type: none"> • Examine entire sequence using slow motion or without pausing- make field notes of the event while watching to record the whole event • Identify major boundaries between events • Look at how participants in each event contribute - see how they contribute- look at mutual influences • Transcribe statements and nonverbal communication, guided by analytical purpose of research • Examine entire video record for exceptions and summarise 	<ul style="list-style-type: none"> • Watching the entire video first • Inventorying the video by categories and coding of activities, spaces and other components • Focusing analysis on newly discovered ideas and the original questions of the research • Making conclusions by organising the details within a contextual description.

An important question regarding the primacy of data arose as well: are video and text data equal or not (Mason, 2002)? The status of the different forms of data in this study initially were considered equal and so were treated as such, guided by the principle that privileged status should be avoided (cited in Bryman, 2004, p. 212). This was the starting point regarding initial analysis of data. However, separate analysis makes sense for some studies but not for others, and this may take time to figure out (Ratcliff, 2003). During early data collection and analysis, the data were treated with an identical approach to coding . However, this soon proved to be problematic due to the difficulties in using the same coding processes for audio and video data. The issue of particular concern was how to develop a consistent approach to transcription and coding of video data without adhering inappropriately to an identical set of codes.

Developing a common language for video analysis:

When analysing video data, the first step one must take is to agree on how the data can be processed or configured for analysis. It is typical to convert video into words for analysis of text. In order to do this, the researcher is required to consider what words to use in describing the events being analysed. For example, if the researcher is

considering **the physical development** of the child, he or she might record that a child is beginning to reach and grasp a toy. But if the researcher is exploring the interactions between the **child and the physical environment**, he or she might record that the toy was within reach of the child and was of a type that was age –appropriate or hand-sized which enabled the child to grasp it easily. Finding the important words that capture what is being researched is a vital step. For a study of transactions, the language needed has to capture the nature of the processes being researched, and it needs to speak to the research questions that are being explored (Ratcliff, 2003). In order to analyse video data, a **common language** for coding or describing the data is needed. This takes time and repeated observation and interrogation of video data to clarify and support the evolving language that can then support ongoing analysis of the complete video data being collected.

Developing a common language is a common phase in video analysis, where pre-coded study designs are not considered as congruent with a qualitative approach (Jordan & Henderson, 1995). For example, Rogoff et al (1993) and Ratcliff (2003) all used multiple analysts to review segments of video as a means of establishing a form of reliability of descriptions and codes. Formulating such codes supports development of a common language with which to interrogate further data in consistent ways (Rogoff et al, 1993). This is difficult to achieve by a lone researcher ,and due to the importance of this process for the current study, the researcher explored solutions to this problem.

Collaborative work in video analysis: summer project 2010

In March 2010, a grant application was made by the researcher to the Health Research Board (HRB) for the studentship awards, which are available each summer.¹¹² The grant application was viewed as one potential way to access a research assistant to support the data analysis process. The application was successful and consequently, a research assistant was recruited to the study from June to August 2010.

The task identified for her involvement was to work only on the video data to explore analysis and coding, in order to begin working together on developing a common language for video analysis. By working together we formed a fuller sharing and understanding of the processes being observed and thus began to code and categorise our observations from a more three-dimensional place. During this time, existing studies using video analysis were reviewed for method and procedures to explore guidelines that might help. What emerged was a coding scheme based on key literature from the theoretical aspect of the study and also based on the focused coding from the first three months of the project. The outcome of this short-term project was the development of a specific analysis framework for video, using a common language, based on the data and informed by theoretical and focused coding. Using the Bioecological model, i.e. PPCT (Bronfenbrenner & Morris, 1998), Processes relate to activity, events and play in particular, Person relates to the child while Context includes the physical and social environments being observed. These aspects formed the framework for video analysis of play transactions over Time, for this study.

¹¹² These awards are targeted at undergraduate students to promote the development of research skills. Students are then funded to work with researchers as assistants on existing projects, for a period of up to eight weeks.

PROCESS: Activity and events:

This study is based on action and activity so the units of analysis are based on identification of activity as ‘events’, similar to Rogoff et al.’s study (1993). We take the view that activity is socially constructed and through activity transactional processes occur. Activity is observed when the child’s engagement in activity is considered.

Play:

The issue of complexity arose when trying to observe play behaviours in very young babies. Initial observations highlighted that play was the earliest occupation of infants but at such a novice stage that it was difficult to name. Guidance was sought from researchers of occupational behaviour to help identify a starting point for analysis. Wood, Towers and Malchow (2000) and Spitzer (2003b) have studied early occupational behaviour of prosimians and of children with developmental delays. Their work identified core aspects of behaviours that are commonly observed, and that seem to point to purposeful engagement. The problem of only naming complex behaviour as play is therefore by-passed by considering all behaviour playful or occupational, if it demonstrates four core aspects: transactions with the environment, intentionality, purposiveness, and agency (Wood et al., 2000). Spitzer considers that directed action is a common feature of young children’s lives and therefore we need to observe the child’s focused efforts or attention, rather than on who initiated the activity as a priority (Spitzer, 2003b). Play is considered as including a description of play type, play behaviours, and playfulness.

PERSON: Infant:

In analysing the infant’s role in transactions, Bronfenbrenner and Morris proposed looking at a infant’s characteristics to guide observation. This includes observation of ‘*generative characteristics of disposition*’ (for example, curiosity and engagement),

resources such as skills and ability, and demand characteristics, such as the temperament of the baby and responsiveness (Bronfenbrenner & Morris, 1998, p. 1009). Observation also considers three elements identified in Schneider's work on infants' object play in the home: attention, persistence and task-directed behaviour (Schneider, 2009). The infant's movement or behaviours in trying to engage with objects and places are observed using Henderson's framework as a guide to name the activity: peripersonal space- within range of grasp; near space- space through which person moves; far space- seen in distance (Henderson, cited in Munier, Teeters-Myers & D. Pierce, 2008, p. 235). This framework is useful as it considers spatial engagement in terms of action (Henderson, 1996).

CONTEXT:

Physical environment: Places, spaces and objects:

Gibson's notion of affordances helps support analysis of places, spaces and objects (J. Gibson, 1979). Places, spaces and objects are described based on purpose or function: places to support care and comfort routines, places to sit, lie, sleep, spaces to support play interactions, things for pouring, squeezing and so on. Objects are named, but are also noted if they present as being activity/objects that invites attention, exploration, manipulation, elaboration and imagination (Bronfenbrenner & Morris, 1998). Furthermore, observation is informed by Wach's work on physical settings that identified the need for environments that encourage exploration, that are responsive, that have some regularity and predictability of events (Wachs, 1979).

Social environment- mother, brother, sister:

Using Ray and Tickle-Degnan's (2004) research on the task supporting behaviours of parents, analysis and observation considers: **structuring of the environment, enticement to task, calling child's attention to features of the task, modelling**

behaviours, providing verbal instruction, and providing social reinforcement for task completion. Bronfenbrenner and Morris's personal characteristics of parents are also considered here and relate to behaviours of **encouragement, of assisting, of engaging in joint activity, and of responsiveness** (Bronfenbrenner & Morris, 1998)

To summarise, difficulties with video analysis were addressed by the development of a specific analysis framework, informed by theoretical and focused coding of video in the early stages. A common language emerged that supported the researcher to frame and illuminate the study. This enabled the researcher to gaze more clearly at the processes being witnessed, and support a congruent way of perceiving and knowing the contexts being studied. This common language ensured consistent analysis of observations over the duration of the study, based on the theoretical underpinnings and frameworks identified.

Constant Comparison

For each new month video data and interview data were analysed using a constant comparison method using guidelines developed by Boeije (2002). In constant comparison, once initial codes or categories are identified, the task is to compare between data collection episodes for the same participant, then to begin to compare between participants. In this case, the researcher is exploring to see whether common themes exist within and between participants. Transcription of observations becomes informed by the coding lens that is developed. From the initial coding of video observations, the researcher tuned into key themes that informed the study and codes were identified that supported data generation. In turn these codes guided and informed the lens of the researcher during subsequent analysis of videos and interviews. If data did not fit with existing codes, the data were explored to see what new coding category

might fit with the data. During the study, constant comparison occurred across interviews for each infant and also across infants. Comparing within and between episodes supports the depth and breadth of analysis that can result in rich, thick description, and theoretical sufficiency (Charmaz, 2006). Due to the longitudinal nature of this study, constant comparison continued within and between cases throughout the 12 months of data collection (September 2009 to October 2010) and was finally completed in August 2011.

EVALUATING QUALITATIVE STUDIES

Good practice in research is a basic requirement irrespective of the research tradition. While quantitative research focuses on measuring validity and reliability, the same does not apply to qualitative research. However, evaluation of qualitative research demands just as much focus on systematic enquiry and due attention to rigour as for any quantitative work (Mason, 2002). Strong qualitative studies need to be accountable and produce explanations or arguments in such a way that can be generaliseable to some degree, and overall to be conducted '*as a moral practice*' (Mason, 2002, p. 8).

Denzin and Lincoln (2003) propose the use of credibility, dependability, confirmability and transferability in qualitative research instead of the traditional measures. In contrast, in grounded theory studies, criteria for evaluation include consideration of credibility, originality, resonance and usefulness (Charmaz, 2006) while in ethnography the primary measures of evaluation relate to authenticity, and of having authority from having been in the field for lengthy periods (Timmermans & Tavory, 2010). Some researchers contend that it is not possible to specify common procedures for ensuring validity. Instead the need for flexible methodologies and support for the exploratory nature of the work is recommended (Camic, Rhodes & Yardley 2003). In reviewing the different arguments, it was decided to consider this flexible approach to evaluation that communicates a qualitative stance rather than attempting to apply the same procedures used in quantitative studies (Reid & Gough, 2000). Therefore Denzin and Lincoln's criteria are applied in the following section.

Credibility

Credibility refers to the degree to which a study has a congruency between theoretical ideas that have been developed and the observations on which they are based (Bryman, 2004). Credibility in this study is supported by a number of factors: the longitudinal nature of the research, the ecological validity of the setting and the multimethods being used to include member validation of data. Ecological validity is a term to question whether findings in research can relate to everyday, natural social settings. Natural settings can be viewed as a way to maximise ecological validity as they allow the researcher to capture behaviours in context (Camic, Rhodes & Yardley, 2003). The home environments where the research took place provide such ecological validity to the study.

Credibility is typically achieved through the prolonged engagement with participants, through keeping of in-depth field-notes and through member checking to validate findings with participants (Reid & Gough, 2000). Rogoff et al talk about the challenges in ecological research of achieving credibility:

‘Researchers cannot avoid interpretation in any kind of research because they must rely on knowledge of the context and of norms for behaviour in order to recognise the relevance of the observed behaviour for the theory being tested’ (Rogoff et al 1993, p. 32).

With this in mind, member-checking was used to determine ‘*descriptive and interpretive validity*’, which refers to factual accuracy of the account along with some interpretation of meaning (Maxwell, 1992; Sandelowski, 1998). In this study, by doing repeated visits over time, and by reflecting on previous events with participants during each visit, parents were involved in the interpretation of what the infant did and why, which achieves a degree of member checking to support credibility.

Some methodological considerations to support credibility were also implemented. The researcher worked towards comprehensive data treatment (i.e. using all forms of data in data analysis) and aimed to analyse interactions thoroughly using constant comparison methods and actively seeking out contrasts and differences. By combining this depth and breadth of analysis some form of credibility can be achieved (Silverman, 2005).

One threat to credibility lies with the parents themselves in this study, whereby their play behaviour with their children when being observed, may differ to their behaviour on non-observed occasions. Furthermore, their reports on their views and values may misrepresent their true position. This *observer effect* on participants' behaviour is identified as a common problem in ethnographic research (LeCompte & Goetz, 1982). By prolonged engagement in the family settings over twelve months and by the use of multiple methods for completeness (see explanation of completeness in the next section), the likelihood of this being the case was minimised.

Dependability

In qualitative work the emphasis is on the researcher being true to the principles of trustworthiness and transparency (Bryman, 2004), which refers to the extent to which the findings are authentic and dependable. Dependability strategies include obtaining full description of the setting along with keeping an auditing approach to data collection (Curtin & Fossey, 2007). For this study, a number of auditing processes were implemented. Audio taping and video recording were used to support trustworthiness and capture situations in real-time, which allowed for review of original data by the research assistant and supervisor. Furthermore, samples of data analysis codes and categories were provided for supervision purposes to ensure transparency.

Field-notes and memos were systematically written throughout the data collection phase, as well as full transcription of video and interview recordings and are viewed as methods towards trustworthiness also (Silverman, 2005). This approach contributed to the aspect of quality in the study by ensuring a self-critical stance was taken that consequently informed the arguments and explanations of the emerging knowledge (Mason, 2002).

As a lone researcher, the issue of potential bias arises, due to having a single point of reference, which can seriously impact on the trustworthiness of account (Curtin & Fossey, 2007). As Goble says:

As we interpret what we see according to what we know, it is all too easy to miss seemingly obvious things that we do not know but even more important it is even easier to invent quite false observations, for we all try to distort what we see according to our preconceived ideas (cited in Swee Hong, 1996, p. 363).

This places emphasis on the need to be well informed with regard to the research background literature but also to be careful and rigorous in how to make informed choices in presenting the study, in identifying the emerging concepts, and in using frameworks to guide analysis and interpretation. To reduce this bias and potential restrictions in interpretation, frameworks were chosen to help support consistent analysis. These included the use of the PPCT model, the concept of activities as units of analysis, and the plan for a pilot study to develop a coding system using an advisory group of ‘critical friends’ who were also researching at PhD level.

Trying to achieve a full description was a particular challenge. This involves a range of approaches, including the need to clearly define concepts and assumptions (LeCompte & Goetz, 1982). Consequently, the researcher worked to clarify and define concepts to support observation in particular, in order to incorporate dependability.

Triangulation was another approach used as a method to obtain detailed description and minimise potential bias. This is a method that can apply to qualitative research in the form of **completeness** (Curtin & Fossey, 2007).¹¹³ Triangulation for completeness and to support dependability can be attempted by varied means such as through data, time and space triangulation. Data triangulation is achieved through the use of multiple methods to obtain data (Curtin & Fossey 2007), which for this study involved the use of video, interview, field-notes and memos. Time triangulation is addressed by collecting data over time, which for this study involved monthly episodes over a twelve-month period. Space triangulation refers to data collected in two or more settings to investigate consistency of data across sites (Curtin & Fossey 2007). Space triangulation is supported in this study by the presence of five different families and sites. Silverman points out that it may be an optimistic view that by combining data a more complete picture will be uncovered (Silverman, 2005). However, in a study of transactions and activity, it seems imperative to require multiple sources of data rather than relying on one.

Confirmability

Confirmability relates to the degree to which a study appears to be authentic and has achieved some form of objectivity (Bryman, 2004). This relates to transparency again and by using specific procedures for systematically recording and analysing data in a reflexive way in this study, the principle of confirmability should be evident. During the research process, the researcher engaged in reflexive activity in field notes and in reflections on each home visit, which were also documented in a research journal. This

¹¹³ Completeness aims to give depth and breadth to a study to enrich explanations and therefore add greater understanding of the phenomenon being studied (Curtin & Fossey, 2007).

aimed to ensure explicit awareness of potential biases, values, attitudes that shaped the research, and in doing so, ensured these were noted as influences rather than being hidden or ignored.

The study was limited by the absence of a research team to support confirmability which would serve to reduce potential biases (Curtin & Fossey, 2007). This limitation was addressed partly through the temporary engagement of a research assistant, and through the use of peers to support the pilot phase of coding development and audit. However, by using these methods and also from presenting preliminary findings at conferences, it is hoped that the impact has been minimised and some adherence to confirmability obtained. Finally, by focusing on specific data analysis processes and challenges, the researcher can demonstrate some of the thought processes that were involved to give evidence for transparency (Dickie, 2003).

Transferability

Transferability relates to the extent to which the research can contribute to others' understanding of the particular settings or people studied (Maxwell, 1992). In order to achieve this, the researcher in qualitative research is encouraged to provide a rich, thick description, as espoused by Geertz (cited in Bryman, 2004, p. 275) to try and support transferability to other groups. For this study, the researcher aimed to achieve transferability through firstly, the identification of a purposeful (and clearly defined and described) sample of participants, and then through use of grounded theory data analysis methods such as constant comparison and theoretical sampling from the beginning both within cases and between cases over twelve months. It was also targeted through the frequency of events sampled for each family and across different families. The result is a body of work that relates to families and infants, that it is hoped has some intuitive

recognition and applicability or relevance, for application to other similar settings (Cesario, Morin, & Santa-Donato, 2010; Curtin & Fossey, 2007).

ETHICAL ISSUES, RESPECT AND CONFIDENTIALITY

In ethnography, the ethical practices of the researcher specifically are of concern, in relation to his or her behaviour in the field '*and its consequences for the people studied*' (Hammersley & Atkinson, 2007, p. 209). Ethical issues that pertain particularly to ethnography include informed consent, privacy, harm and exploitation.

Informed consent:

In this study, detailed information leaflets (Appendix G) were issued to potential participants and time was spent discussing the nature of the study and its demands in order to assure fully informed consent. For each infant, both parents gave written consent to participate on behalf of their infants, who were too young to give their own consent. In Ireland a rights-based approach to child consent is advocated, in recognition of the child's right to participation in their lives (NCO, 2006; 2009). However, although infants were not able to consider consent, the researcher took a stance of being guided by the infants' behaviour during home visits, to ensure the study did not impose on their daily lives.

During the 12 months, other family members were present on varied occasions, and in each case, gave verbal consent to being involved in the study also. This is a common scenario in ethnographic research, and also reflects realities of daily life whereby key participants give full informed consent, while others may have a less detailed account of the study being done (Hammersley & Atkinson, 2007). Periodically, on occasions of

stress for the families, the researcher repeated the position of informed consent.¹¹⁴ This was to ensure the study did not become onerous on the families. It was also with the realisation that the study required active participation of the families, which would have been diminished if they began to experience the study as stressful or intrusive on their daily lives.

Privacy and confidentiality:

Privacy in research is considered through aiming for anonymity when presenting information on participants, for example by the use of pseudonyms. Pseudonyms have been used in this study with no other identifying information, such as surnames or addresses in order to protect confidentiality. However, families are aware that pictures have been used as part of the dissemination of the study and findings for educational purposes, and gave consent to this aspect of the study.

Procedures for data protection are being employed regarding use and storage of data to protect confidentiality also. For example, specific research laptops were purchased for the researcher, and the research assistant. Any video material used for transcription purposes was handed over at face-to-face meetings with the research assistant, to avoid the use of the Internet and to ensure confidentiality was maintained. These research tools along with cameras are stored separately in private locations while video data is being stored on an external hard drive for safe storage for two years. Furthermore, all written data is being stored in secure locked files with identification information removed, which will be kept for a period of five years.

¹¹⁴ I.e. to remind participants that they had control and to remind them of their choice to withdraw at any time should they so need.

Harm and exploitation:

Harm may arise in ethnographic research when participants are identifiable, with consequences to their reputations (Hammersley & Atkinson, 2007). In this study, this was considered in relation to different values and attitudes that were shared by participants, which may not be viewed in a positive light by others. The researcher viewed these situations carefully and aimed to keep the data contextual to aim for a broader understanding of the situation, and by aiming for representation of the events from the families' perspective as much as possible, in a respectful way to minimise possible harm.

The other risk considered was in relation to *potential* child-care issues concerning illness or abuse. While this was considered a low-risk area potentially, the researcher was prepared to handle any such situation if it arose during home visits, and to be ready for referring parents on to necessary organisations as required by the state if it was warranted.

No material gains were offered to participating families which is considered essential for ethical practice in research. However, a separate issue is an expression of gratitude to participants for their time and energy to sustain engagement in the project. Consequently, each family received a gift at the end of the study, of a baby book consisting of pictures of their child playing over the year, as a record for the family to keep. Ethical approval was granted to proceed with this study in February 2009, from the Research Ethics Committee of the Dublin Institute of Technology, Dublin, (see Appendix H).

Summary

This research study has in these pages been pulled apart and mapped out in an attempt to identify the crucial and troublesome considerations that challenged the researcher over the past four years. The danger at this stage in the journey is for the understanding that has emerged from being in such close and regular contact with families in their home environments to be lost in translation. It has been a privilege to be allowed to be with families in such ordinary but extraordinary moments in their lives over the past year. It has been such a wondrous and shared journey; to be there to share with mothers the joy of new events and to be another person in the child's home environment '*who gives status to, and expresses admiration and affection for the person*' (Bronfenbrenner & Morris, 1998, p. 1015.) The challenge is now to be faithful to the experiences and learning from the journey that has just past, in order to do it justice in word.

CHAPTER SEVEN: INTRODUCTION TO PARTICIPANTS:

“People cannot be understood except through their relationships”

(Sameroff, 2009, p. 30).

Reporting and knowing where to start: what influences to explore:

A key point of departure is ‘knowing’ where to start with the next phase of presenting findings and analysis. The knowing here is in inverted commas as I realise during this process, that there is no one moment of knowing but many processes of learning instead. I need to reflect on what aspects of the home environment are relevant to this study: to identify which processes are contributing to play and learning, and how they do so (Friedman & Wachs, 1999). During data collection and initial coding, themes began to be identified that related to the ‘what’ and ‘how’ of home environments. For example, in each family, mothers noted during the year on many occasions the influence of work on their home lives. Hence, work is explored as a relevant factor that interplays and interacts with the day-to-day lives and hence learning contexts for their infants. The problem lies in how to best share these findings without losing the threads of the unfolding processes taking place.

Consequently, the framework that has guided this study so far is applied here in presenting findings in a contextual way: Process, Person, Context and Time (PPCT). Chapter Seven introduces the families in context of their home environments. Chapter Eight focuses on the home as a social **context**, looking at the structures and transactional **processes** that take place there over the year (**time**). Chapter Nine progresses on to looking at the transactional **processes** that take place during play in the home over twelve months, between the child and the physical environment primarily

(**person, context and time**). Finally Chapter Ten will address a number of important characteristics that were identified in relation to play occupations as transactional processes. This will enable us to pull back and consider the shapes and patterns that result and evolve throughout these processes that form the whole again. These chapters therefore aim to focus on relationships between strands of influence of the physical and social environment. Table 7: 1 outlines emerging themes as they relate to the research questions.

Table 7: 1: Emerging themes from analysis

Key theoretical questions	Emerging themes:	Subthemes
1. What is the nature of the home social/cultural environment? 2. What is the nature of play in the home environment? (5. What are the characteristics of the transactional process between child and environment?)	<ul style="list-style-type: none"> • Social/ cultural/community processes <ul style="list-style-type: none"> ○ Relationship between families, and communities ○ Rituals, customs and culture ○ Work influencing home • Family and parenting processes: <ul style="list-style-type: none"> ○ Values, beliefs about family life ○ Play characteristics of families ○ Parenting, play and learning ○ Orchestrating family routines • Relationship with the physical environment <p>Processes of Parental reasoning</p>	<ul style="list-style-type: none"> • Social capital • Parenting styles • Values and attitudes in child rearing • Culture and family • Routines and habits • Licenses in use of physical environment • Mothering occupations • Orchestrating the environment
3. What is the developmental sequence of the child in relation to transactions with the physical environment in the home? 4. What are the attributes/affordances of the physical environments that influence this developmental sequence? (5. What are the characteristics of the transactional process between child and environment?)	<ul style="list-style-type: none"> • Processes of learning through child interactions: <ul style="list-style-type: none"> ○ From being to becoming to doing • The developmental physical environment: <ul style="list-style-type: none"> ○ Nature of home places and spaces ○ Nature of toys and objects ○ Processes of Occupational development • The responsive environment <ul style="list-style-type: none"> ○ Processes of developing family occupations ○ Orchestrating play in the home ○ Material responsiveness ○ Processes of co-adaptation/ co-transformation/cycle of affordances <p>Affordances of the physical environment</p>	<ul style="list-style-type: none"> • Material culture of childhood • How places are used in and out • Places to play, sit, etc • How places and spaces changes over time • Child characteristics • Experiencing new events • Playing with the physical environment- a functional approach • Platform play and floor play • Taxonomy of toys • Play as occupation and transaction

Research Report:

These findings are presented as a report using a narrative approach to telling the stories of these families and their lives, which is a common method in reporting ethnographic work (Creswell, 2007).¹¹⁵ A short introduction will be presented here of each infant and their family, in order to foreground their stories in context. Given the nature of this study, it is important to include an introduction to three aspects: **the family, the physical environment and the child** as each aspect represent the different contexts of the study. The pen pictures presented are a basic presentation of each family narrative. In the following chapters, the report will draw from an analysis of narratives, in addition to analysis of events and observations to combine as a way to present findings. As a result, an intimate familiarity with the social and physical world can be presented (Brewer, 2000). In ethnography as we saw in Chapter Six, there is a tendency to focus on description with little theorising (Sandelowski, 2000). Consequently, the study also focuses on explanatory reporting which is the basis for theorising. This draws from the grounded theory approach to analysis which was implemented alongside the ethnographic one, in order to support conceptualisation (Timmermans & Tavory, 2010). The story (as every story) needs to start with a beginning: with an introduction to the characters, where they live and explain their life stories, to set the scene

¹¹⁵ In narrative reporting, there are two methods most commonly used: a narrative analysis where a person's story is analysed in its complete form, and an analysis of narratives, where a number of narratives are analysed. This report draws from both approaches in presenting findings.

INTRODUCING THE INFANTS, THEIR FAMILIES AND THEIR PHYSICAL AND SOCIAL WORLDS

Five families participated in this longitudinal study, allowing me to come and spend time each month in their homes and to be part of their worlds during that time. This has enabled me to discover family life for these infants in these specific home environments. General details about these families are outlined in Table 7:2 (see also Appendix E).

Table 7:2 Introductions to infants and their families

Infants name* and age at entry into study	Family members *	Home: physical setting	Visits
Karen 1 month	Maria- mum Dinny- dad Erin-sister, aged 6 Tadgh- brother, age 3	West cork Rural Dormer home	12 visits 24 hours Oct 09-Sept 10
Sarah 1 month	Vicky- mum Michéal- dad Michael- brother, age 2 ½	Kerry Suburbs-housing estate Small town Semi-detached home	12 visits 19 hours Oct 09-Sept 10
Joe 1 year	Aisling- mum Sean- dad Martin- brother, age 3	Cork Suburbs-housing estate Small town Detached home	12 visits 23 hours Oct 09-Sept 10
Amy 1 year	Aileen-mum Muiris- dad	Kerry Rural Two-storey, detached home	11 visits 22 hours Nov 09-Oct 10
Hannah 1 year	Clare- mum Kevin-dad Liam-brother born July 2010 Naoise and Emily- cousins	Cork Urban- along a busy city road Terraced home	Oct 09- June 10 9 visits 15 hours plus 3 hours video sent from Netherlands (3 interviews by phone)

*Note: all names have been assigned pseudonyms to protect confidentiality

A summary profile is then outlined on the following pages for each infant in order to capture some of their unique characteristics, and serves to communicate their individuality and the variety of settings wherein they have each begun to live out their lives. Furthermore, in keeping with an ecological approach, a three dimensional perspective is used: one that introduces the social setting of the family, the physical setting of the home and the child.

At the end of our time together, I asked the mothers what the experience had been like for them and it was reassuring to hear participants saying to me that this was a positive process for them. It seemed like we both benefited from the process:

Fieldnotes, September 2010: In asking her (Aisling) what her expectations had been for the study she says she had none- but that having someone call each month was enjoyable for her as a stay at home mum this year- knowing someone was calling

Fieldnotes, September 2010: For Maria, she found that it was an enjoyable process as it made her think more about Karen's development- she found she reflected after I visited due to what questions I was asking that made her think harder about some of the things that were going on. She felt it made her notice some of the things that were going on for her-which she might not have paid attention to otherwise.

ABOUT KAREN AND MARIA-

Karen was born late summer 2009 and was one month old at the outset of the study. She is the third child of **Maria** and **Dinny**. She has an older sister, **Erin** who is six, and a brother **Tadgh**, who is three. The family live in a rural home beside the family farm and both Maria and Dinny work: Maria is a hairdresser and Dinny a farmer. Both parents have strong ties to the community as both grew up in West Cork and have parents within 20 miles of where they live, whom they see on a weekly basis. Maria manages child minding primarily between herself and her husband, and local neighbours who share school runs with her also. Once a week, Karen goes to her maternal grandmother for the day while Maria manages her hair salon. This grandmother runs a pub in a nearby village where Maria grew up. Karen is part of the village life in the pub and plays about while her grandmother works and supervises her play. Once or twice a week Dinny's parents come over for dinner to Maria's home.

The family go to mass each Sunday, and always plan a family outing after that. Other community settings include the Mart on Saturdays, where the family go to view cattle, specially Dinny and Tadgh. Maria also values the weekly shopping trip to town on Saturdays with the children; she likes to dress them up and take them with her. They do the grocery shopping, talk with neighbours they meet along the way and then have coffee. During the year, Karen was brought to weekend events in the area such as the Munster Show or Clonakilty and Schull festivals where family days are held.

In her home Karen is always positioned within the activity- from birth she was set down for sleep in a baby basket in the family room rather than away from the activities. Maria would hold her on her lap during schoolwork with the other children, and uses a buggy to sit her close to the table where they have the family meals in the middle of the day. Dinny comes down from the farm for his dinner each day so dinner is always planned for this time. Karen fits in around the daily routines for meals, for collecting the children and for play and school work.

Maria values being at home with the children and tries to organise play with them rather than for them. During the year, she worked on mosaic activities with them, on dressing up and on chasing them about the house. She loves to be playful and talk to them about magic and Christmas or Easter customs- about Santa Claus and the tooth fairy. She does not talk about toys or objects of play but when asked about play, talks about games and fun, teasing and songs, action rhymes and social type play. Even during birthdays and Christmas, toys were not the focus, but play and fun together seemed to be the main theme.

Setting: the physical environment

Karen's family live on a farm in rural West Cork, ten miles from the nearest town. Maria's husband grew up here and works on his family land so there is a historical link to the land, the area and the community. Their home is a dormer bungalow with bedrooms upstairs under the sloped roof, where all the family sleep. Downstairs there are a number of rooms- a kitchen-dining room (where the family spend the day), a sitting room or good room (for special occasions) and a utility room and downstairs bathroom. There is also a downstairs bedroom for visitors. The kitchen-dining room is a long narrow area, which contains a couch and armchairs, a kitchen table for meals, and the TV, with the kitchen area at the other end of the room. This allows for most of the daily activities to take place in one area: cooking, eating, play and rest.

There is a generous space around the house, which accommodates a garage, an outside sitting area or deck, a swing and climbing frame, and a wide piece of lawn all around the house for the children to run and play on. The roadway is narrow and leads to the nearby mountain and is used frequently to get from one townland to another. There have been a few accidents along the road and so the family have a large gate to keep the children in safely from the traffic. They do not tend to walk along the roads here but go instead to safer places for family outings.

Karen: "I want to go there"

Karen came into this family setting in September 2009 as the third child. She was a very watchful solemn baby on early visits, but soon began to show a glint in her eye with a mischievousness nature. Her mother described her at three months of age:

'She's very placid, no, yea she...it's only in the last week or so now that she is really coming out of herself more.' Maria, December 2009.

Her favourite toy during the year was a soft toy spider, which was commonly always placed in her buggy or near where she was sitting. By seven or eight months of age, she has been introduced to a baby walker, which remained her primary place for play on subsequent visits until she was close to one-year of age.

She emerged as a child who seems to say to the world: “I want to go there”! (Figures one, two and three). Her primary motivation seemed to focus on being in the middle of everything. She was very interested in activities involving social interaction and once she could move by using the baby walker, she spent her time negotiating the environment to get closer to her brother, which was also usually the place where there was ‘action’ going on. By herself, she would wander about in the walker seeking new places to explore, wandering into out-of-bounds areas such as the hall, if a door was left unlatched. Perhaps she was seeking her brother and sister in these moments (they were at school), or just enjoyed exploring beyond the bounds of the kitchen where her daily routines were typically played out.

By the time she was one-year old, she was highly engaged in performing movements to the wincy wincy spider song that her mother sang to her regularly. She proudly performed the movements and enjoyed the attention and celebration to it all when her sister would clap and encourage her to do more. So, she seemed to prefer social over physical activities in the main. However, this was not a home where toys featured prominently, and toys did not seem to be a major feature in her life.

Karen could be characterised as an infant who changed gradually over the year rather than suddenly. Each new event or evidence of new learning seemed to come about gradually, so that life took on a slow and steady pace rather than fast and rapid.

Karen: 'I want to go there!':



Figure 1: Karen: being in the middle of everything- social interaction.



Figure 2: 'I want to go there!' Following her brother into the hallway in the baby-walker.

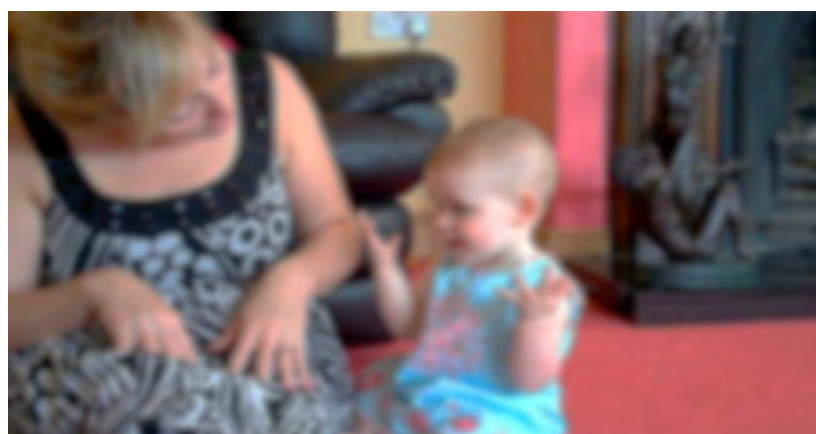


Figure 3: Karen's favourite activity- Incy wincy spider.

ABOUT SARAH AND VICKY

Sarah was born three days after Karen, in early autumn 2009 and was one month old when she entered the study. She has an older brother **Michael**, who is two years old and her father **Michéal**, who is a shop-keeper in the local town, while her mother, **Vicky** is an auctioneer. The family lives in a housing estate on the edge of a town in Co. Kerry, and both grew up in the town also so they have a historical link to the community. Both sets of grandparents live nearby and the families visit each other each week. Vicky spoke a lot about her three sisters during the year whom she relied on for advice and guidance a lot when the children were going through different stages. Hence, the families seem to be a close knit one, with strong relationships. Her family also has a strong link with the community in relation to golfing, and this occupation is shared among the different members of the family and is being passed on to young Michael also.

The family is a social family whose members enjoy meeting friends in town each week for coffee and a chat. Vicky brought Sarah from an early age into these social settings and continued to do so all year. The town has many walks nearby where families go with their children specially to the large park area and playground. These were the local environments that Sarah experienced frequently. She was also brought to indoor play areas such as the soft-play environments if there was a birthday party taking place.¹¹⁶

In the home, play is highly valued and Sarah had a very rich play environment in relation to the availability of objects for play. She was provided with a varied and stimulating range of toys, and play typically involved her mother positioning her for

¹¹⁶ Soft-play environments are indoor play settings where inflatable and foam structures are used for physical play.

maximum access to toys or objects, and also orchestrating play between herself and her brother. Childminding was a topic that came up frequently over the year. Vicky highly valued play and enabling her children to develop and put a lot of thought into what this meant for sourcing a childminder. She found a childminder for Michael that she was very pleased with.¹¹⁷ In the childminders' setting, the children are facilitated to do family-centred routine-based activities such as mashing potatoes, or painting fences. Vicky appreciated the fact that her child was experiencing activities that she might be doing herself if she were at home, and that these were done as part of play and not 'housework'. This was the childminder that Sarah was eventually sent to at seven months of age when her mum went back to work.

Setting: the physical environment

Sarah lives in a two-storey, semi-detached home in a small housing estate. They have three bedrooms upstairs and three rooms downstairs aside from the hall- a front room for watching TV and for play, a kitchen-dining room and a utility room, which leads onto the back garden. There is a small garden to the front of the house where the car is parked rather than being a place where children can play. The back garden is compact but consists of a patio, where there is a sandpit and chairs, a grassy area, a shed and room for a large climbing frame and slide.

The family use the front room for most of their play activities, while the kitchen-dining room is mainly used for meal preparation and mealtimes. Both rooms are separate and don't allow for monitoring of play when Vicky is working in the kitchen. Hence, play is sometimes orchestrated in the kitchen while she is working there.

¹¹⁷ In Ireland, childminding typically refers to a setting where the child is minded in a home by an adult who may or may not be a family member. In this case, Michael attends a childminding setting which is a family home nearby.

Sarah: “see what I can do with this”

Sarah emerged during the year as a child who seems to say to the world: ‘see what I can do with this!’ (Figures four, five and six). She seemed always to be of a happy nature, and with a strong drive to master her environment, through figuring out the nature of things. Her mother said of her:

‘She’s a very happy child- my sister put it in a good way yesterday: she said she is more inclined to smile than anything else.’ Vicky, November 2009.

Sarah really seemed to be intrigued by objects from an early age, compared to Karen who had more interest in her brother and wanting to follow him. Sarah was driven to seek objects and manipulate them in a purposeful and intentional way. She particularly loved toys in the early stages with strong stripes and that had a musical element to them.

By the time she was six months, her mother said of her:

‘She loves more physical play than he did like. If she’s on the bed and you come down on her she’d be cracking up! You love the rough and tumble (to Sarah).’ Vicky, March, 2010.

Her development over the year could be characterised by rapid change- for example, she began crawling suddenly at nine-months and within a week could crawl distances around the downstairs of her home and within another few weeks was pulling herself up to standing. However, alongside this was ability for sustained attention to be applied to objects or toys that caught her attention. She could be described as a smiley child with warm energy, and with a calm and inquisitive nature.

Sarah: “see what I can do with this”:

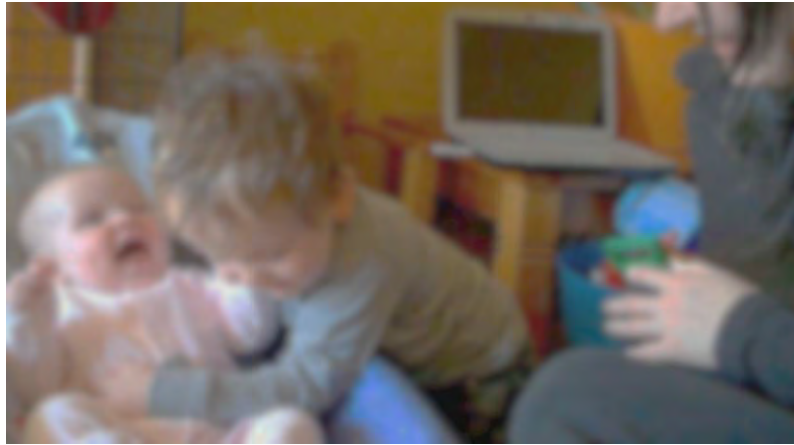


Figure 4: Sarah: 'being more inclined to smile than anything else!'.



Figure 5: Intrigued by objects from an early age: Sarah at two months.



Figure 6: 'See what I can do!' Placing the ball in the shape sorter at 11 months.

ABOUT JOE AND AISLING

Joe was born in the autumn of 2008 and was one year old when he joined the study. He has one older brother (Martin, who is three), a new baby sister (Mia who was born when Joe was 18 months old, during the study), and his father **Sean** and his mother **Aisling**, who live in small town in Co. Cork. Aisling works full-time as a personal assistant in a city business, while Sean is a shift-worker in a city-based semi-state body. Aisling was expecting her third baby early on in the study and spent a lot of time during the year coping with pregnancy health-related issues. This was a hard time for her as she became limited in what she could do with the boys physically and needed to leave a lot of lifting and heavy work to her husband. Her mother passed away just before her three-year old son was born and she regrets that her children never got to meet their grandmother. Her father however, keeps close contact with them and visits every week from the city. Sean's family come from a large town in Co. Cork and they visit with these grandparents on long weekends or for event such as Easter.

The family values giving their children freedom to explore and play but within reason. Both boys seek out physical play primarily and this can be difficult to facilitate particularly in the winter. As soon as the weather got fine in the spring, Aisling had them both outdoors to play. The family purchased a trampoline and this was the most favourite and frequently used piece of equipment during the rest of the year. Discipline featured highly also during the year, as a challenge for Aisling yet a valued attribute that she wanted for her children.

Other play settings the children experienced included weekly walks to the local park when the weather was fine. They were also a family who loved using public resources

such as animal parks, and activity centres. These were a common feature over the last six months of the year specially after the new baby Mia came along in March. Each week, the children were also commonly brought to coffee places for treats after their outings.

Setting: the physical environment.

Joe lives in a detached two-storey house set in a small housing estate on the edge of a small town in Cork. Both parents work in the city so this town enables them to live in a more rural setting yet still be close to work. Their home has four bedrooms upstairs, and a downstairs front room (good room), sitting dining and kitchen combined (open-plan type area), with a utility room and playroom to the side of the house. The playroom provides a place to play but is not the only place used for play. Commonly both boys brought their toys to the family area during the day and spent a lot of time playing between the sitting room and back garden. There is a doorway to the back garden from the sitting-dining room area so the children have ready access to the outdoor area.

The back garden is a walled in area with a wide space for the family to use. They have a patio area by the house, and a wide space to the left where there is a football goal, the trampoline and a play frame that has a house to climb into, and swings attached. This area is grassed with a narrow path at the house, and it is where the sandpit is also and the outdoor toys such as the water guns and trikes. To the other side of the house is a shed and gravelled area where the boys often play also with their wheelbarrows and buckets.

Joe: “where else can I climb?”

Joe can be described as a child who is a considered yet impulsive child (Figures seven, eight and nine). However, overall across the year, what stands out is his drive for movement and physical mastery all the time. His mother described him in April at 18 months:

‘He’s a daredevil! He stands up here on the sink –he stands here and he actually banged his teeth on this one day. Where else does he climb? He climbs on the cooker! And he tries to turn on the knobs and everything on the cooker! ‘Aisling, April 2010.

Yet, he can also be described as a watchful child who is observant of his brother, and who dips in and out of play. His habit of play was to watch his older brother and then try to do what Martin was doing also. This led to his style of play of dipping in and out, but also of being a watchful player, where he watched on while his brother played with his mother for example with trucks and putting cars in and out of his garage. This play style also led to many fights between them, as Joe’s preference in play was to deconstruct things while his older brother wanted to construct them. Consequently they fell out with each other a lot.

The nature of his physical play in comparison was more impulsive. He would tend to try to climb everywhere but with the goal of mastery rather than with a purpose to reach things. For example he would climb in his playroom on top of the windowsill or near where toys were on the shelf, but even if he reached for specific toys, once he got them, he moved on to try and reach something else. The goal seemed to be to climb and access things but not for the purpose of playing with the objects subsequently.

Joe: “where else can I climb?”:



Figure 7: Joe: being watchful: dipping in and out of play interactions at 13 months.

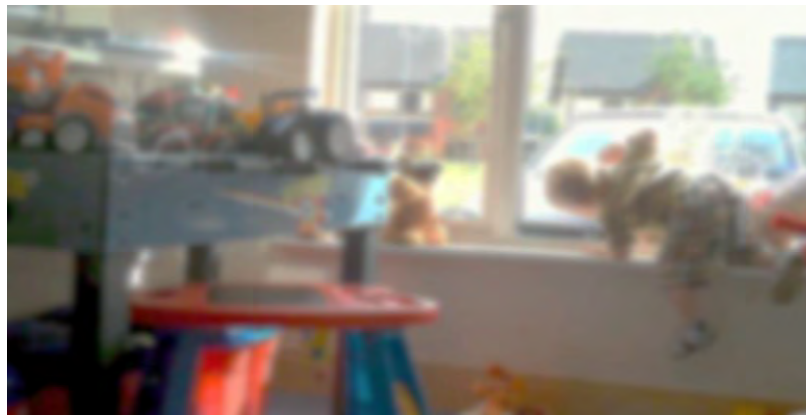


Figure 8: 'Where else can I climb?'



Figure 9: Deconstruction- taking things apart at 20 months.

ABOUT AMY AND AILEEN

Amy was born late autumn 2008 and was one year old when she joined the study. She was last infant to be recruited. She is the first child born to her mother **Aileen** and father **Muiris**. They live in a rural setting six miles from a large town in Co. Kerry. Aileen is a therapist who works in the local town in a service for children with developmental delay, while her father is a butcher in the town. Both Muiris and Aileen grew up in this area of Kerry and have family members living within 20 miles of the town.

During the year, Amy attended a childminder three days a week, and was minded by her grandparents on another day. Aileen was able to take parental leave one day a week and so was with Amy every Friday also. Amy's maternal grandmother was very sick during the year and needed intensive hospital care. During this time the family withdrew from the study but came back the following month, happy to continue as the news on her health had changed for the positive. Consequently, Aileen filled me in on what Amy had been doing during the month I had missed.

As Aileen works with children, she has a very insightful perspective on play and early child development. She values play as learning but sees play as 'common sense'.¹¹⁸ Yet from observing her interactions at play, it was easy to see how she is informed by her work- she enables her daughter's play in many varied ways and supports her self-esteem and development of her competency. She was also seen to value the whole range of play opportunities rather than emphasising one kind of activity, such as book reading for example or tabletop activities. Aileen involved herself along with Muiris as Amy's play partners typically in daily play. Both parents prioritised play with Amy in the evenings

¹¹⁸ Aileen during the year reflected that although she has a professional knowledge-base about child development, she thinks that she is more informed by her own innate life-experience, which she describes as 'common-sense'.

when they came home from work, rather than getting the dinner ready, even though they would be tired and hungry.

Other influences on Amy's development were the importance of outdoor experiences and the natural environment. The family have two dogs and both parents loved to be hill walking and out with the animals. This was an important feature in their everyday lives. Each evening after dinner, they would try and go out for a walk with Amy. Also, both parents enjoyed sports and this was encouraged at home with hurleys and balls for kicking about. The family dogs were another feature as Amy's' grandparents were dog-breeders and so dogs have always been an important part of family life. Amy was being brought up to engage with dogs, to feed and mind them, and enjoy their company. Her grandfather used to play the guitar and banjo to her and she loved to listen to the music and sing songs. Then in her grandmother's house she would help with the gardening and loved to visit the chickens and gather the eggs.

Childminding was an issue that came up in the context of play. Aileen sought to find a childminder that had similar values to herself and Muiris. She accessed a childminder who was recommended to her, and who also kept dogs and valued being outdoors so she shared similar interests with them.

Amy was frequently engaged in visits to local places for walks to pick blackberries or see the horses, along the beaches, the woods, the parks in the town and to the family settings where there were horses, dogs and chickens. During the summer these events extended into festivals and family days that are typically held in towns in the region, such as Puck Fair or the Rose of Tralee. They also valued travel and during the year took Amy on her first trip on an airplane to Spain. Going to mass each week was valued

but only to a specific church where infants were facilitated more easily than the local small church.

Setting: the physical environment

Amy lives in a two-storey, dormer style house, built on an acre of land six miles outside the town. The house has four bedrooms upstairs with another one down stairs where the parents sleep. Downstairs, there is a large hall area, with a spacious living room, and a dining room/ kitchen area (which is an open-plan space that accommodates a couch and play corner also) for Amy. Aileen and Muiris designed the house and they included a lot of space for storage so that in both the living room and the separate kitchen-dining room, there are a lot of spaces for putting toys and playthings. Aileen commented that they did not see the need for a playroom but wanted ample space for equipment and toys instead in each of the living areas.

There is a wide and spacious area of land around their home, with fields each side of them where there are cows, sheep and horses. The immediate area around the house is a gravelled area where the cars park, the dogs have their house and run area, and there is a small patio area towards the back. As yet, they do not have any outdoor play equipment other than a sand-tray that was borrowed during the year. Expanding outdoor play is something they are hoping to develop for Amy as she gets older, with the provision of climbing frames and large outdoor equipment for play.

Amy: from ‘help me explore’ to ‘I’m the boss!’

Amy began the year with an approach to play that seemed to say: ‘help me explore’. She presented as a curious child, who readily engaged in play with objects specially and

preferred to play with her mother or father as a play-partner. Her mother said it usually was about both of them being present for her:

'I have to say her happiest time is when we are both around definitely.' Aileen, November 2009.

Furthermore, she was a cautious mover and preferred to play from the floor rather than exploring the larger environment. This lack of mobility did not prevent her play however. She found climbing as an alternative to walking for a while, and by 18 months had begun to take her first cautious steps on her own.

Amy's play with objects was always more towards construction rather than the deconstruction that characterised Joe's play. She loved to put things together from putting small toys into boxes, or necklaces over her teddies heads. She loved to take things out of boxes and then reorganise them back in again. In particular she loved to play with small toys such as dogs, cows, and horses and has had a favourite teddy for most of this year. However, similar to Joe, she also observed other children's play a lot before trying to join in. By the time she was reaching two-years of age, she had developed an approach that seemed to say: 'I'm the boss!':

'She has an obsession with sitting-sit here, sit there- organising...management Muiris says, managing people!' Aileen, August 2010.

At this stage she had also become very fond of books and not just pictures but began to want to hear the stories, and songs that often accompanied them. Towards the age of two, Amy was beginning to play more and more with her imagination in pretend play, making tea for everyone with her tea-set and wanting to change teddies nappy constantly, and read stories to him in her tent house, which was put up for her in the front room (Figures 10, 11 and 12).

Amy: from 'help me explore' to 'I'm the boss!'



Figure 10: Amy at 12 months: getting mum to help.



Figure 11: Playing with her favourite toy animals: placing them in and out of boxes and tins.

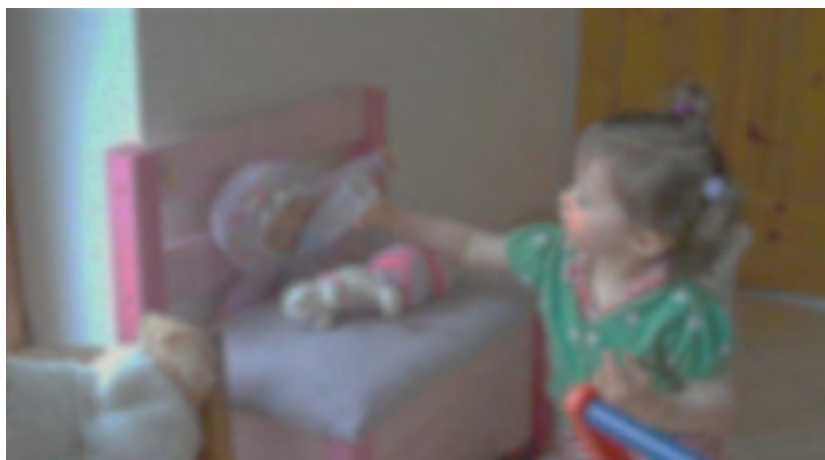


Figure 12: Amy feeding her teddy and doll at 20 months.

ABOUT HANNAH AND CLARE

Hannah was born in early autumn 2008, and was one year of age when she joined the study. She is the first child of **Clare** her mother and **Kevin** her father. They live in the Cork city, on a busy road leading from suburbs into the city centre. During the study, Clare became pregnant and gave birth to their second child, **Liam**, who was born in July 2010. Clare was the primary carer for Hannah during the time of this study as her husband had to leave Ireland to get work. So she was a ‘single mum’ in many ways, coping with work and child rearing on a daily basis on her own. However, Kevin tried to come home from the Netherlands almost every weekend, though this frequency reduced over the winter months. Clare is a primary school teacher who works in the city, with children with special education needs. Hannah attends a day-care centre when her mother is at work.¹¹⁹ Her parents and sister live in the city also and she visits with them a few evenings a week. Here Hannah gets to meet her cousins Naoise and Emily and they spend a lot of playtime together.

In early July, Clare and Hannah emigrated to the Netherlands to be with Kevin, and set up home there for the new baby also. Clare was happy to stay involved in the study and she left Ireland with a video camera for the purpose of videoing Hannah at play each month until September. With a lot of organising between family members who were visiting over and back to the Netherlands, the camera was sent back and forth so I could watch her play and then talk with Clare by phone about what was happening in the video and how life was for Hannah now in a different place.

¹¹⁹ Hannah is the only infant in the study who attends a formal, day-care setting that is purpose built and includes many children of different ages, from babies in the crèche to preschoolers, and is staffed by early childhood professionals.

So over the year, Hannah was involved in a lot of travelling back and forth by plane to the Netherlands visiting her dad. She also spent time at weekends with her cousins and joined them for events such as going to the St Patrick's Day parade. Her mother valued being outdoors and getting exercise but did not like walks, so instead she used to bring Hannah on the back of her cycling bike to the local park after work. She found that even though she wanted to bring Hannah to activities such as swimming, she was limited due to being pregnant and having limited time also with her husband away.

Clare values independence in Hannah and specially watches for reinforcing good habits for play and discipline. For example, she has designated places where Hannah can eat, and tries to allow Hannah access to anywhere in the home as long as she is safe. There were no locks on cupboards as a result, and no stair gate until Hannah actually fell on a few occasions and a stair gate was fitted temporarily. This approach to independence is also influenced by Clare's work, and she feels she often plays with Hannah based on what she knows from work. So she sings a lot of songs to her and gives her choices rather than telling her what to do, and uses other strategies that she would draw on as a teacher.

Setting: the physical environment

For nine months of the study, Hannah lived in an old terraced two-story home in the city, which had two bedrooms upstairs and three separate rooms downstairs: a kitchen, a dining room and front room. This is a more traditional design for a home than in any of the other homes outlined above. Consequently, Clare was often working in the kitchen while Hannah played away in separate rooms. She used the full scope of the downstairs area for play, choosing the hall or the dining room, depending on what she wanted to

do. In comparison, the new house in the Netherlands was a more modern style, with an open-plan design for the living and kitchen areas and so Clare could be doing chores within view of Hannah as she played.

Both house had a small walled-in back garden, with a patio area by the house, a level, green area and a shed at the bottom. In Cork, the garden was accessed through the dining room which was a limiting factor over the months as Clare could not always see what Hannah was doing from the kitchen, or when the weather was cold, the doors could not be left open. In the Netherlands, although the garden was more accessible from the house, Clare found that Hannah was less likely to play outdoors on her own and did not engage in outdoor play without a play companion.

Hannah: “I own this place!”

Hannah from the outset of the study presented as a focused, curious, responsive, lively, independent, self-sufficient child who could play away with sustained focus and persistence on activities without getting frustrated or looking for adult input in general (Figures 13, 14 and 15). Her mother described her as being a settled baby and said of her:

‘Nothing ever bothers her except when she is tired or hungry.’ Clare, October 2009.

Due to this persistence in tasks, her play seems to be characterised by object play rather than social play. However, this may be more related to the opportunities she has for social play and the play styles she has developed within her home where her playmates are limited.

Her preferred activities over the year varied from Lego™ construction which evolved as more and more of a favourite, to doing tasks related to the home such as sorting clothes

and stirring pots in the kitchen, to books and stories. She remained very interested in books and pictures throughout the year and, like Amy, began to want the story more than the pictures by the age of two. From April onwards sand and water play became favourites perhaps because these were also outdoor activities. By the time she moved to the Netherlands, Hannah's favourite toys were the insert boards, to which she took a particular shine, and pretend play with Lego™ people and trucks. Overall, she exuded a sense of ownership about the places she played, as if she had mastered them all!

Hannah: “I own this place!”



Figure 13: Hannah at 13 months: playing with books and Lego.

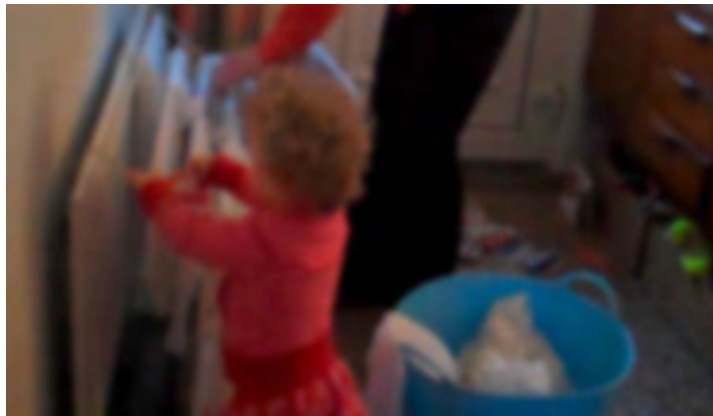


Figure 14: Playing with mum: helping with household tasks.



Figure 15: Hannah's favourite outdoor activity in the spring: water and sand play.

Summary

Each infant brings his or her own characteristics to the play interactions, but each play interaction is also shaped and influenced by the parental values and cultural or social characteristics of each setting. We can see from these families how different values lead to different opportunities being made available to their infants. Furthermore, the infant's interests and play preferences are also involved so that when you compare children, we can see that areas of interest tend to range from object play (Hannah and Sarah), to social play (Karen and Joe) and object play when combined with partners in play (Amy). It may be that the environment has promoted this play preference. For example, in Hannah's case, the father is absent during the week and the mother busy trying to get house work done, which may encourage Hannah to be more self-reliant in her play. Yet, in comparison, Joe has play partners and great variety in objects and play materials and yet is most focused on play when his brother is present. It may be the case that what we are seeing is the earliest signs of the play styles of infants (Knox, 1997). It may also reflect the learning styles of each infant (Wachs, 1987) and that the preferences for social or object play is pointing to how they learn best also. Nonetheless, neither object play nor social play exist on their own, and each requires an element of the other, so that when Sarah wants to play with objects, her mother orchestrates the environment for her or when Karen wants to play with her brother, he introduces objects into their play together. As Smith points out, most social play involves objects and vice-versa (Smith, 2010).

The next three chapters present the findings of the qualitative analysis. In Chapter Eight, I will foreground the socio-cultural context and explore individual strands within that world. Once these strands are teased out, we can then look at how particular strands (the

child and the physical environment) interplay and interlink across the year in Chapter Nine. The Tenth Chapter will then discuss more specifically important characteristics of the processes that have been identified in the study.

CHAPTER EIGHT: FOREGROUNDING SOCIOCULTURAL PROCESSES OF THE HOME ENVIRONMENT.

RATIONALE:

In this chapter, the physical environment of the home is the setting for analysis of the social and cultural contexts of family life. As Hammersley and Atkinson stress, although an ethnographer's role is to explore specific settings, this does not mean the focus is not concurrently on the broader contexts. They warn however that this can lead to weak or inadequate analysis (Hammersley & Atkinson, 2007). The challenge is to make connections between the local and global or generic ideas that inform our work. Consequently, the home provides a 'case-study' or bounded context for this study. It is a setting so familiar to us all that it may also be in danger for being a taken-for-granted context. Indeed, initially for this study, the home environment was not even included in the original outline of research questions: I approached the study with an assumption that I knew about homes; that the starting point was about play and the physical spaces and objects in the home place. However, this position soon became untenable. Initial home visits showed me that I did not indeed know about 'home', that each home was unique and individual and in itself needed to be given due attention. In themselves, they reflect the developmental niche identified by Super and Harkness (1986), which includes three subsystems that interact to shape the child's development:

1. The physical and social settings in which the child lives,
2. Culturally regulated customs of childrearing and care,
3. The psychology of the caregiver (e.g. values, beliefs and goals).

This chapter foregrounds this developmental niche and begins therefore by presenting the home settings where the infants live, where home is viewed as a physical setting that frames and affords both physical and social transactions. The main focus of the chapter is then on the *three layers of influence*: sociocultural, family and parenting processes. Finally, the chapter concludes with proposing **parental reasoning** as one way to consider the core characteristic of the sociocultural environment in how it influences play in the home setting.

Places and spaces: Five Irish Homes- bought, built and biding time?

Homes have their own characters and personalities that reflect the people who live in them; they have a history and meaning, based on the past, and provide structure for daily life for the family members who reside there (Hasselkus, 2002; Rowles, 2009). So, in order to explore and understand the relationships infants have with their physical environment, we need to consider their homes. For these five families their homes were chosen as a place to live and rear their children for multiple reasons. Two of the families had been given a piece of land on which to build their own home (in Kerry and West Cork). Two families had bought a home in a local housing estate, while the fifth family were living in a home as a temporary measure to bide time, while they planned to build their own place.

Why is this important or does it even matter? I had started this study thinking that I knew about homes. However, even on the first visit with Clare, I realised that family values in relation to home vary widely and subsequently leads to quite different ways in how home places are used. This was highlighted to me when I observed Hannah being lifted up to sit in a baby seat that attaches to the table, to play beside us as we talked (November 2009). Hannah was just walking and could have climbed into a chair if the

environment afforded her that opportunity. However, in this home, the spaces were small and limited. Clare was not able to fit in a low table for Hannah, nor a baby chair that Hannah could climb into. Yet she spoke of valuing independence in her child, and in other ways demonstrated that she gave her many licences to interact in the environment with great freedom. So in this home where the family were biding time until the new home could be built next year, compromises were being made. The environment did not allow for Hannah to have her independence in sitting at the table and for the moment she relied on adults to help her into the seat and to lift her out. Making observations thus only gave me one clue as to what was happening in the home. By talking with Hannah's mother I was able to understand what choices she was making and why. I also got to hear what her ideal situation would be like and could recognise the values that underpinned Clare's choices.

In the two homes that were bought, families were living in close proximity to other families in small estates on the edge of small towns in Kerry and Cork. Both homes had a sitting room and a separate kitchen/living room area, with utility room beside the kitchen. One family had a playroom while both had small areas in the front and back of the home for a garden and play area. While both families talked about the home not being ideal, they were happy that it met their needs. In both cases, the homes were chosen for close proximity to both work and family. They were also chosen based on the need for outdoor space for the children, with facilities close by for play and schooling. However, in making these choices these families have weighed up which aspect takes priority. In looking for a home that provides a good quality of life for the whole family, proximity to work and family was considered more important than outdoor places for play, as in the long-term this is what they viewed as contributing

most to a happy family life. Compromises were made consequently in purchasing a home that has less space for children but that offered the other factors instead.

It was interesting then to compare the homes of the two families who had built their own places. The family in Kerry seemed to have put a lot of thought into the planning of their home, wanting it to have large open areas of well-used spaces rather than having a 'good room' as was the tradition in times past. The parents' bedroom is downstairs while Amy sleeps upstairs. Already they were reviewing some of their choices and realising that they would do it differently now that they had a toddler in the home. They would prefer to be sleeping closer to their daughter now she is small, but are aware this may not always be the case. Aileen reflected on a friend who has teenage children and who appreciates the fact that they can sleep quite separately from them. We realised when exploring these choices that in fact a home needs to be developmental also- that it needs to be a flexible space that allows for change as the need of the family changes Aileen can see that in times to come they may also use the home spaces differently.

In contrast, the fifth home was built in a more traditional fashion on farmland, and has a 'good' room that is used mostly during special occasions such as Christmas, and is not for daily use. The family uses the kitchen/living room for day-to-day use and a large outdoor area around the house, boundaried by a fence dividing the fields from the garden area. Similar to Clare's home, this home has restricted space in the living room and Maria pulls back the table after every meal to free up floor space for the children to play. Instead of having a baby seat or high chair, Karen is placed in a buggy to sit for meals, and to sleep. This allows Maria to wheel her around the room as the need arises to get to the window or the TV. So even though there is a spacious room beside the

kitchen, it is not used by the children based on the family traditions of keeping a good place for visitors, and the values placed on needing such a space in the home.

When each home setting is considered key issues arise. Knowing the physical arrangement of the home space is only part of the jigsaw. Knowing how these spaces are valued and used is another factor that highly influences the infants' experiences in the home. This finding mirrors other studies where it was found that it is not enough to consider what is available in home environments, but also when and how these resources are used (S. Pierce et al., 1998).

The built environment: what is the Irish 'blue-print' for homes?

Bronfenbrenner (1979) conceptualised the idea of each country having its own special blueprint in the physical built environment as outlined in Chapter One of this thesis. This concept raises the question: what is the Irish blueprint? When you consider other European countries or North American settings, homes frequently have basements. This is not the case with Irish homes. As we saw from the Growing Up in Ireland Infant study, the majority of Irish families live in a house rather than apartment (92%), with 75% of these having three bedrooms or more (OMCYA, 2010a). So, three bed-roomed houses seem to be the most common type of 'blueprint' for our homes. Furthermore, the most common home within this type in Ireland is a semi-detached house. These five families live in houses rather than apartments, and have two or more bedrooms in their homes. Furthermore, by considering the concept of homes having a blueprint, we can consider whether these homes were 'typical'. Despite the fact that they were built, bought or serving as a temporary home (in an old terraced home from the last century), they mostly had a similar design downstairs where the infants played: hallways,

cooking and eating areas, with access to the outdoors either through French-doors from a living area, or through the utility room by the kitchen.

Two houses (one bought and one built) had a direct door to the outside spaces only through the utility room. It is a common house design to lead to the back garden through the utility rooms. Here we can see that the link with the indoors and outdoors for the child does not often exist. In both houses, the infant could not see out to the back garden due to the kitchen windows being so high, and with no direct door into the garden. In her work with preschools in Ireland, Kernan identified a key field of action as indoor-outdoor connectedness (Kernan, 2010). Her study highlighted the limitations of not having this link with the outdoors and the impact on children's access consequently. It may be that for typical Irish homes, play in the outdoors is more limited in homes that do not have this connectedness with the outdoors.

Although family living is catered for in these Irish homes, children's play is not specifically addressed in the building design. None of these homes had a play room area except for one family home where the garage had been adapted for a playroom. While a playroom may not be a typical feature of Irish homes, families all felt that the homes met their needs for play which they all integrated into their living areas.

PROCESSES IN THE HOME:

Bronfenbrenner and Morris (1998) identified the need to focus on processes and not products in ecological research study. By looking at the processes that occur in the physical setting of the home through observation and talking with families, sociocultural processes were identified. These were both shaped by the physical

environment and influenced the physical environment in turn, demonstrating the bi-directional nature of the transactions. From analysis of data, three dimensions emerged that will now be addressed:

1. Sociocultural processes, which refer to aspects related to work, communities, families and routines and customs, and how these influences the home.
2. Family processes as they shape and influence play in the home, including:
 - a. Orchestrating the environment: temporal, social and physical
 - b. Play characteristics of families/ Games families' play:
 - c. How places are used in the home/ Licences in the use of the home environment
3. Parenting processes that underpin play opportunities and events for infants. These key processes relate to parenting characteristics and reasoning

1. SOCIOCULTURAL PROCESSES

Rather than focusing on individualism versus collectivism, Machinot recommends exploring cultural scripts of families to understand the cultural characteristics that may be of influence (Machinot, 2008). So as data were analysed, differing aspects of cultural influences could be identified.

Community places: relationships between family, extended family and communities:

Family and extended family relationships, was a core theme for all the families. Each of these families lived within ten miles of either a maternal or paternal grandmother or grandfather, so proximity of place is key. In every family, the infants met grandparents or cousins typically every week. This was an important feature in Clare's life as she was living without her husband while he worked abroad. Consequently she and Hannah had frequent visits with her family each week:

'My sister and my parents live next door to each other so if I go to my parents, my nieces are there in anticipation of Hannah- Naoise who is 7 and Emily who is 5, but it is really Emily who is particularly interested in her-just playing for hours chasing and all sorts of games' Clare, October 2009.

This close physical and social link with family did not revolve around childminding. All the infants were minded either at home by their own parents, or attended a childminder or day-care setting, while two families relied on grandparents for regular childminding for one to two days a week. So, grandparents were not viewed as the primary carers when parents went to work. Maria had a strong opinion about that:

'They are brilliant (the grandparents) and I'd never feel that (guilty) by them but for myself I feel like they are my children and they have reared their family and I feel guilty. I feel like I don't want to burden anyone else you know. I feel like it's important for me to be with them That I am here for them all the time' Maria, February 2010.

So although the paternal grandparents never give her reason to feel guilty about asking them to help with childminding, she herself feels responsible. However, her own mother minded Karen when she reached ten months for one day a week:

'Oh, she's inside the pub and mammy's ironing and she's looking at mammy ironing...but mammy's be holding her for a nice bit during the day- she feels guilty and she loves her-she just looks up at her...and I'd be up to see her when I'm working (nearby) every hour to see if there's any drama.' Maria, May 2010.

Grandparents so provide some essential support for the families. They also bring another aspect of playfulness into the family experiences for the children. For example, Vicky finds she struggles at times to reconcile her mother's reactions to her son's misbehaviour. Yet she also realises her son has his own relationship with his grandmother and she needs to respect that:

'If Michael was in her house (granny's) and does something bold, my mother would be laughing and I'm thinking mam, I'm trying to raise this young man like and she's like, oh, there's nothing like abit of boldness-you need that!' Vicky, December 2009.

In both cases above, Maria and Vicky appear to gain special support from their own mothers. For families like Aisling who had a new baby during the year, issues around childcare come into play also. Aisling's mother died four years ago and she does not have the same support from grandmothers as the other families. Instead she relies on formal childminding when her new baby is born:

Fieldnotes, April 2010: In relation to managing the boys and a new baby, Aisling sends the boys to the childminder when Sean (husband) is working which leaves her time to manage with the new baby. The childminder is flexible which is what she needs in order to be able to make this work, as it is hard to get everyone up and ready at a given time each morning and they often are late to arrive to her home.

Aisling also had her sister come to stay when the new baby was born for the first week at home after hospital. In comparison, Clare is in the Netherlands when her baby is born in July. She and Hannah have just emigrated from Ireland and she is adapting to the new culture as well as the new physical environment. So although her parents had been a regular feature in her life in Cork, now she needs to find supports from elsewhere. For example:

Fieldnotes July 2010: Hannah and Clare: When the baby was due for delivery, they had already got Claire-Marie organised to be the childminder- this is part of the custom in the Netherlands where the mother is only kept in hospital the day of the baby being born and usually get a childminder to come into the house. Claire-Marie took Hannah and minded her in the house until the mum came home and now comes in two mornings a week for Hannah.

So the extended family of cousins, aunts and grandparents are common features in the lives of these families. This involves regular visits to other homes and settings. For the infants this includes different play experiences and events. For example when Amy visits with her grandmother, she also visits her hens and collects the eggs with her. In Hannah's case, she is brought sailing with her paternal grandparents, as they live by the

sea, while Joe is brought to the fairground with his cousins. In Clare's family she reflects how she herself always holidayed with her cousins and how this is a valued family tradition:

'We went on holidays with our cousins every year and we still do actually and now our cousins children are friends with our children and we have family gatherings every year' Clare, February 2010,

Consequently, Clare orchestrates weekly play visits to Hannah's cousins.

During the year, this link to the extended family was particularly noticeable during special rituals for the families. Rituals relate to customs and community oriented practices usually within a culture (Shonkoff & Phillips, 2000). Over the year, many rituals were spoken about and each family shared how they celebrated such rituals as well as their relative importance to them. The infants were involved in many of these customs and rituals that are typical for a specific time of year in Ireland and in many Irish families: Halloween games, Christmas and Santa, St. Patrick's Day outing, Easter with egg hunts, and family birthdays. For the families, these events were often shared events with extended family members. At Halloween and St. Patrick's Day for example, where there are older cousins or children in the family, the infants were included in playing snap apple and finding the ring in the BarmBrack (Halloween) or going to the parade (St. Patrick's Day). For example, in Maria's family:

'Erin was in green and white and gold and I painted the face and you know now- I'd love that craic myself you see- they had a great day (at the Patricks day parade)' Maria March 2010

Interestingly, other mothers reflected on how St. Patrick's Day celebrations are not ideal for infants: parades do not necessarily mean enjoyment. Instead, older children are encouraged to participate while the infants either stayed at home or were brought for a walk to and from the parade but not to stay and watch.

While Halloween and Christmas are long held traditional events in Ireland, the Easter events were different with some families having egg-hunts and others not. It seems that Easter events are now being more influenced by other cultures where the Easter Bunny would be a feature. In these families, Easter egg hunts were most common but some parents noted that these were not their own family traditions but instead were new ones they wanted to do with their children. It seems in the case of Easter traditions (and also possibly Halloween in the past) that some traditions are imported from outside Irish culture and become part of cultural practice in communities. In my experience, the idea of the Easter bunny came into our home from preschool when our daughter came home with stories and expectations about what would happen at Easter. We as parents felt we needed to go along with her expectations consequently rather than risk upsetting her. So traditions and customs can be shaped from other cultures as well as our own, and from community forces as well as family ones.

So the presence of extended families offers infants extended opportunities to experience varied and different events, activities and places than they experience in the home. These places provide other homes for these infants as places for exploring and experiencing life in an emotionally safe environment. For each infant, events were noted every month and included special other moments also in their lives, such as getting their first shoes (see Appendix I for an example). The other most common setting for these infants is the childcare setting where they spend much of their time when parents are working. This is explored in the next section as it relates to the relationship between parents' work and home.

Work places: relationships between work and home:

Work and home life was a common theme across the twelve months specially when there were critical moments that highlighted how one influences the other. For example, when both mothers of the newborn babies had to begin to go back to work, there was a period of regret and remorse.

'It was just lovely being off and being with the kids like- I never had that you see. I mean apart from missing work. But there's nothing like being at home with the kids when they are small like, the excitement and the staying up for Santy!' Maria, January 2010.

This reflected her experience of being at work during previous Christmases when she could not be home to do things with the children. Trying to juggle work and home meant that some of the special events like Christmas were impacted and she was unable to do things with them that she would have liked to do. In Clare's case juggling work and home life was particularly stressful when Hannah was unwell:

That's because the last time she was sick- it's terrible when they are sick- you are like ooh, you can't get anything done! Clare, November 2009.

As a lone parent she struggled with Hannah's sickness alone, alongside trying to juggle work and keeping the home going. In Clare's case, she is the mother of one child. In comparison, Aisling is the mother of two boys under the age of four, and was also pregnant on her third child in October 2009. She found the demands between work and home quite challenging and found a strategy that helped: watching a TV programme that helps guide parents on managing childrearing:

It kind of keeps me focused- I find I suppose with work and having the two of them and at the moment being pregnant as well and find that my attention...my patience is shorter than it would normally be so I try to watch Nanny 911 'cos it kind of keeps me....I cope better' Aisling, October 2009.

However, being at home full-time after the baby is born is not the easiest role either for these mothers. For example, Maria was equally frustrated when things got on top of her

at home and she spoke of how trapped she can feel, with being alone to care for three children, in a remote farming area:

It's such a change- you kinda like....my man can get on with his life. Here I am; my life has turned totally upside down. I can't run out the door when I want to dya know' Maria December 2009.

She admitted that she missed work, but also missed the children when she was at work. So for both Maria and Aisling, while work was an essential feature in their lives, they struggled to reach a satisfactory balance between being a mother and being a worker and coping with those different roles at the same time.

Another strong theme that arose unexpectedly for me was how family and even community occupations shape our children's lives. Maria spoke of how farming is in the family and her hopes that their son may take it up also in adulthood:

' I think the fact that Tadgh loves the farm I think Dinny loves that- when you think that your little boy someday might become a farmer and hope he does' Maria, December 2009.

While this is a common enough aspect in family life, she also spoke of another influence that had been hidden to me before. She reflected on how she was reared herself as the daughter of a publican (pub owner) who was also a funeral director (which was a common combination in Irish rural society in the past). Her parent's occupations had a strong influence on how she was reared and on how she rears her own children:

Fieldnotes, March 2010: Maria spoke today a lot about her values and worries for her children, which took the focus from Karen and her development. However, it really helped throw light on what guides some mothers in their caring towards their children. Maria spoke of what it was like for her growing up compared to her husband- he grew up on a farm and she in a pub in a small town. For Maria, she worked behind the bar since she was nine years old and being in the town, her parents encouraged her to always speak to customers, to always salute people on the street and have a chat for them. In comparison, her husband didn't have such regular contact with older people as a child and remains a quiet person- Maria talked of how that shapes her approach to

life and how she would have skills ready for talking to people- though she also feels she is lacking in confidence and would like to be able to speak out more in groups of people. She helps her children to be sociable as this is how she learned herself-she values this. It was striking how this was her social experiences in life- but also her cultural. Culturally, she also behaved as the pub-owners daughter and kept up the expectation of being friendly in public. This included for her wedding, 'good customers' were invited to the wedding of 350 people, even though Maria didn't know these people herself- but it would have been expected culturally in their community. In considering this cultural dimension of life, it struck me how also my own husbands growing up was impacted culturally- he did not have friends to his home and had to behave somewhat removed from others in the small town where he grew up –because he was a garda's son. Being the son of a garda (policeman) meant he could not just be friends with everyone in the community and needed to stay abit removed from local life- in case his father would be accused of favouritism. In these cases, being part of a family that plays a role in the community has side effects culturally in how families behave and consequently how you behave as child.

So it is not just the parents' own work that can influence family life, but the traditional occupations that may have been part of the previous generations in a family also. Although many children in contemporary life are removed from their parents' work, some still have the same influences as both Maria and Dinny experienced above. Their son for example is already part of the farming life and his play and learning experiences are highly shaped by those opportunities.

So the past influences the present, but also *'the present leaves traces on the future, and the future has been reached through the present'* (Moss & Petrie, 2002, p. 2). We cannot understand social and cultural contexts without due regard to the influences of time (past, present and future) which is why Bronfenbrenner places such emphasis on the chronosystem as part of the PPCT. Understanding familial and cultural differences is important in understanding how and why parents respond and parent the way they do, which is influenced by what parents see as the future child they are trying to mould.

However, work also influences home and family life in other perhaps more obvious ways. Hannah's mum Clare is a teacher with children who have intellectual disabilities. She spoke often of how her work shapes how she is with her child, specially on relation to influences on play and play materials:

Observation and fieldnotes: April 2010: Clare brought out a little box, which had mouse finger puppets in it after the video had finished- this, was something she had got from the US and had not shown Hannah before. Recently, Clare had done a play course at work which emphasised the use of puppets-she uses them effectively for her children who have moderate-severe intellectual disabilities and can see how it makes the stories come to life-having props she says is what works. So, though Hannah had not seen these puppets before her mum was only then making links about how they might be of interest to Hannah. She played with the mice puppets tickling Hannah and making mouse noises and Hannah was delighted-looking for more all the time- Clare made a 'story' out of it by putting the mice to sleep inside the box, saying bye-bye and making snoring noises. Then saying to Hannah to lift the box and sneak a peek to see what they were doing-she did and the mice jumped out squeaking at Hannah. We played this game for 10 minutes and Hannah got me to play too-I got the mice to run up her arm and kiss her and she wanted more. Mum explained the excitement for children who enjoy puppets is to do with them not being sure if they are real or not-you could see that this might be exactly what Hannah was at!

Clare brings home toys or games to Hannah based on new knowledge she has gained through work. She relates her learning to her own child and explores what this might be for Hannah. It helps her expand her ability to orchestrate play opportunities for her child but it also reflects something about her own play characteristics, which will be explored further down. Similarly, Aileen who is a therapist, also comments on how work influences home- that she brings home ideas on how to play with her daughter, but in return is also shaped by her mothering experiences and brings those into the workplace. For example, when Amy was beginning to explore space in the home through crawling, her mother could see the value in having varied spaces for her to negotiate and crawl through. In her work at that time she was seeing a young boy who had a visual

impairment and whose mother had removed all of the furniture in the home as much as possible out of his way so he could crawl about freely. Aileen from her experiences as a mother advised the family to put varied obstacles in the child's way in order to help him learn the same spatial negotiating skills as Amy was learning.

So work and home often influence each other in terms of how experiences in one place shape experiences in the other and vice-versa. While these influences have direct impact on the mothers who are involved in both settings, there is an influence on the child also. These influences are observed through the processes in the home, where places, spaces and objects are orchestrated for the child so that they engage in learning activities, such as those described by Maria and Clare.¹²⁰ In this way, the sociocultural environment is portrayed through the physical environment. Therefore, by looking through the lens of the physical environment, the sociocultural environment can be illuminated and better understood.

Childcare places: making decisions about childminding:

Parents during the year reflected on how and why they chose the childminding arrangements that worked for their families. For example Clare in January's interview spoke of how and why she chose formal childcare setting over childminding in the home. Her main concern was choosing a crèche that 'was the best for her' (Clare, January 2010).

'The reason I sent her there (crèche) was because it was child-centred and because they'd really be teaching her stuff and they do the laundry and that kind of stuff.....but that's what is good about our crèche you know. They bring

¹²⁰ This is where the influences of the exosystem can be seen, which refers to the processes that occur in settings which do not contain the developing child, who is indirectly influenced by those events in the immediate setting, which in this case is the home (Bronfenbrenner & Morris, 1998).

them out a lot, which is lovely, whereas a lot of places don't. Even in winter now they bring them out.' Clare, January 2010.

Her choice meant that she was resolved to bring her to a place that was out of her way but that offered her daughter what she valued as a mother.

For Vicky and her older son who was two, although she was happy for him to be at home, she also wanted to consider what was best for him:

'I think there's definitely a positive side- I'd love to say that he's better off at home with me here 365 days of the year but I don't think he is; because he has a lot of me now and I do think he's better off with company.' Vicky, January 2010.

It was evident that choosing a crèche was linked with the type of opportunities being provided for the children, and was linked strongly also to having similar values to the family. Clare valued activities that supported her child's development, in varied ways, such as exposure to family-orientated activities and outdoor play. However, Clare also weighed up a possible downside to this emphasis:

'But on the other hand it's very centred around the children and if it's all around them then does she learn how to get on with things while I'm trying to do things you know?' Clare, March 2010.

She proposed that if a service is child oriented then the child comes first and is used to being the centre of attention in many ways- that the child takes precedence over tasks that need to be done. In comparison, when a service is family-oriented, then the use of family routines is fore-fronted more and the value of embedding routines into childcare becomes more important. The child is more exposed to daily rituals and routines that are typical in a home and would get opportunities to be involved in them as part of play and development- reflecting typical development that occurs in homes.

This idea of a childminding setting being family or child oriented also came up with other mothers. For example, Clare and Vicky both commented that in a family oriented place, there is more likely to be a mixture of ages. Both see the value of having mixed

ages in the childcare setting for their children to experience as the nature of their interactions are different compared to when they are with their own age group. These mothers valued the different age mix in childcare for another reason also: that the older children take care of younger ones who in turn will learn to take care of other young ones when they get older.

In both Vicky's and Clare's cases, they are talking about their toddlers, both of whom are their first child and have no other siblings to be with at home. Each mother is concerned about their child's access to other children of varied ages for play opportunities. Studies of infant interactions with peers of the same age show that infants play predominantly in a parallel way. In contrast, when play partners are of mixed ages, an older child is more likely to take part and interact with the younger one (Rogoff, 2003). In my observations, older sibling interactions were characterised by frequent facilitation of object encounters such as bringing toys to the infant or showing them how to use a toy (Martin, Tadgh and Michael). This is similar to what was described in other studies of siblings play interactions (Lamb, 1978). So when infants have opportunities to interact with older children, they may be exposed to more varied and stimulating play experiences. Humphry and Wakeford contend that it is in this relationship between children that '*important developmental mechanisms come into play*' where learning together (with peers) has most impact on children (Humphry & Wakeford, 2006, p. 262).

Exploring early play and learning in the context of childminding threw up interesting ideas based on family values for routines as well as learning opportunities. The families who considered childcare issues in this study had similar values around wanting an environment that was family oriented as well as child centred which meant being

focused on doing family-type activities as well as more typical play experience. Although the importance of family routines has been to the fore in the USA, it is a relatively new area for practitioners to consider in Ireland. This study indicates that it is an area that needs further exploration and development if practitioners want to aim for family-and child-centred practice.

Relying on the sociocultural environment: Social Capital

One interesting finding of this study emerged when I noticed that mothers had many and varied ways in developing their mothering skills and being a parent. This was identified from the earliest interviews with Aisling when she spoke of learning parenting skills from the TV programme, and also from Clare who spoke of her use of baby books in October 2009. The use of sociocultural resources such as television and books raises the issue of social capital. In Chapter Four, social capital was defined as the processes and resources available (both material and immaterial) to families and individuals through their local social ties (Nichols, Nixon, Pudney, & Jurvansuu, 2009). Nichols et al. (2009) explored social capital to identify how parents accessed information about child development, which is a similar issue for these mothers in the current study. Their Australian study found family and friends to be the most commonly used resource.

In the present study, mothers accessed information about child development in many ways. For example, when Clare worried about her daughter's lack of appetite for healthy food, she found answers and reassurance from family and the media (a newspaper):

'She wouldn't eat the spaghetti bolognaise I made, things like that, so I was getting a little concerned.....I was going oh jeepers, what have I done wrong here, but mom and dad get the health supplement in the Irish Times every week

and there was a good article in it that said as a parent it's up to you to provide the food and they choose what to eat so you just put it in front of them and don't worry too much about it' Clare, May 2010.

Clare is a first-time mum and this may be a factor also. Her approach to that of Maria's is quite different. Here Maria spoke of dealing with a sick child, and how her own sister phones her for advice:

'Miriam now would be ringing and asking me what to do and I'd say Miriam, this is what I did and my child is not your child. You know. There is nobody can tell you about your own child only yourself. You can't. Every child is different' Maria, December 2009.

So, in Maria's case, family members often used each other for support. However, what was also interesting was Maria's perspective on taking and giving advice. She is an experienced mother who has three children and is no longer a novice at parenting. She realises that every child is different so she gives advice to her sister but along with it, that piece of wisdom about each child being different. Equally, when advice is being given to her, she considers it, then weighs it up and decides for herself if she will act on it:

'I used to be asking people for advice; telling me to do this. But at the same time I'd be saying I don't want to do it' Maria, December 2009.

So on another visit, she tells me of being to the doctor when Karen is sick, and even though the doctor gives advice and a prescription for medicine, she waits for awhile before acting on it as she can see her daughter is improving. In this way, she has learned to avoid unnecessary use of medication and yet responds to her child's needs when it is required.

In relation to the mothers of the older infants, the three mothers talked of relying on baby books when their babies were born, but not now that the infants are older. Only one of the mothers spoke of relying on Internet resources, and this was when she was struggling to learn how to help her older son in toilet training. Overall, the main source

of knowledge across these five families appeared to come from family advice and other social networks of mothers or friends at work or in their communities rather than from TV, internet or books. While the issue of parenting and how adults learn parenting skills was not a main focus of this study, these findings inform our understanding of how knowledge and information might be shared and generated among mothers who look for support, and do not always seem to be able to access it. In some of these families, they do not live near towns or cities where support groups can be found more easily. It seems also that their tendency is to rely on family and friends. Further exploration of this aspect would be very useful as a way of considering how to involve families more in sharing resources and being involved in supportive networks in communities as part of supporting family well-being (Farrell et al., 2004).

2. FAMILY PROCESSES

Orchestrating the environment: temporal, social and physical routines

The second dimension of home life relates to the family processes in the home. While the previous section considered the influences of forces outside the home place, this section now looks more on influences within the home itself. Throughout the twelve months of this study three core categories consistently presented themselves in relation to the orchestration role of the mother, as she facilitated the temporal, social and physical environment of the child:

- a. Temporal: The temporal environment refers to the **daily routines** within the home,
- b. Social: The social environment refers to **play routines** of the family, and **games families play**
- c. Physical: The physical environment is about how the home environment is used for play as a consequence of these social influences, and refers to **licences in the home**.

These different aspects will now be explored further.

Daily routines:

Routines are the day-to-day events or habits that form patterns in our lives (F. Clark et al., 2007). From another perspective routines are how we describe the temporal nature of our daily patterns of life. As we saw from studies on homelessness, routines are often the main concern in dealing with the sense of loss when a family is homeless, which proves the essential nature of routines and the importance of routines to our lives (Parlakian, 2010; Schultz-Krohn, 2004). However, they may be at risk of being considered as unnecessary or a taken-for-granted element of our lives also as they

include basic processes such as meal-times, sleep, bathing, work or play routines. For these five families, infants experienced regularity in the daily routines that were influenced by family factors but nonetheless were sustained over time.

Families in this study differed in how they viewed routines. For example, Clare viewed habits as being closely linked to routines from her experiences at work with children with special needs:

'I would be aware of forming habits you know.... if you start...I was aware if we were putting her to bed we were always lulling her off to sleep and I knew it was a bad habit so then we broke the habit you know, so whereas maybe I wouldn't have been so determined to break the habit otherwise' Clare, October 2009.

So for Clare, routines related to supporting her child to develop good habits, and her approach was informed again by her knowledge from work. In one family routines were viewed as not being strong:

'Every day is different. I never have strong routines-she just slots in then...during the day that's a total upside down day and she just fits in you know' Maria, March 2010.

In Maria's case she is talking about the routines in family life when there is a young baby present. Some studies have shown that this is the time when routines are least present (Spagnola & Fiese, 2007). However, in Maria's case she is an experienced mother, with a new baby of easy temperament and she finds that the baby fits into the family routines rather than the other way round. Furthermore, studies have spoken about specific routines such as sleep and meal-times being important and in Maria's family, these specific routines tended to stay stable while others may have been more changeable. In this way, her home provided adequate regularity in routines that have been identified as important in infancy (Wachs, 1979). So there seems to be something here about the relationship between routines and the experience level of the mothers. Maria demonstrates an ease of managing family routines with her baby and perhaps is

demonstrating the tacit nature of mothering. Her experience enables her to orchestrate family and baby routines interchangeably without the effort that is more typically involved for first time mothers.

This issue of family routines versus baby routines was identified by other mothers. For example, Vicky reflected and expanded on the issue of routines. She finds now with Amy as her second child, that routines are easier to orchestrate, but now she combines family and baby routines. For her first child, she recalls trying hard to support her baby to develop his own routines and she worked hard to sustain them. It is different now. With more demands of family and work, she has had to include Sarah in family routines more than she would have liked, but finds that Sarah is adaptable and adjusts accordingly. So is it a case of more experienced mothers shifting their focus from baby routines more towards family routines and knowing that it is about creating a balance between them?

In both Maria's and Vicky's cases, these babies are not the first child in the family. In both cases therefore, parents have experience on which to build. While they understand the importance of routines, they are better able to put routines into context and do not find it such a worry as they did with their first babies. However, this process also leads me to wonder: when does the child's routine become the family's routine? How do baby routines become integrated into the family routines? This was noted during the year:

Memo, March 2010: I need to consider when this process shifts from being primarily a baby routine to becoming a family routine. Babies sleep and eat and need changing-all the basics of daily living that every individual continues to do during their lives. In the first months all of these routines are about the baby and need to be driven by the baby-though some argue that the baby needs to be encouraged into set times and routines for settling and eating (e.g. Gina Forde). Either way, by the time the babies are moving

towards and beyond 1 year of age, their routines begin to match way more the family routines-meal times match and they are beginning to take part in sitting at the table along with everyone else also (Joe in February for example and Amy in March).

Overall, routines for play or family life in general involve a great deal of organisation and planning to ensure everyone manages to meet their needs for comfort and self-expression. Indeed, the reality of trying to juggle it all was expressed by Aisling in September 2010, with her reflection on how they have become skilled at being flexible as the key to making family routines work:

Fieldnotes: September 2010, Joe and Aisling: Outings to the shop for example is one routine job that needs to be done regularly. Yesterday they went as a family with their three children and both parents, but all three children fell asleep in the car! So instead of waking them, Aisling and Sean stopped the car and went and got a sandwich and take-away tea and relaxed over lunch in the car while they slept. They then did shopping afterwards. This flexibility in trying to juggle housework and children allows the children to pace themselves as well as the parents- being tuned into what is needed ensures that Aisling and Sean can manage to get things done but set by the pace of the children's ability to keep up too.

By the time the older infants reached two years of age, they were still showing the need for daily naps but had begun to take part in the regular family meal time routines rather than needing to be fed more often and at different times. While families differ in how they view routines and also in how they facilitate them, all of the families valued them as a natural part of life.

Play routines in the home

In this study play routines in the home were highly related to the family routines, where parents tried to incorporate play routines into the regular home routines of daily life. For example, when Clare needed to get housework done in the evenings after work, she would weigh up whether she had time to spent playing with her daughter:

So you know when she is happy like that I just leave her at it then. And when she needs me then I sit with her....just in case you think I am a neglectful mother!' Clare, November 2009.

This was an example of segregated play events (Primeau, 1998).¹²¹ In contrast, mothers also frequently spoke of providing inclusive play activity, which were embedded in the daily routines. For example, when Aileen came home from work, this was the time Amy wanted to play most, so the family prioritised playtime before meal times:

'If I was to put her down straight away and do the dinner, she'd be looking for me so it's kind of when we get in we take off the coat and then come down on the mat and pull out a few things' Aileen, November 2009.

In order to do that, Muiris might go ahead and prepare a meal while Aileen was free to play. Clare in comparison did not have this choice as a lone parent.

Reorganising the physical environment facilitates embedded play. For example, Aileen had a pot drawer which was located alongside where she prepared meals, specifically where Amy could play. Vicky had a box of empty beakers for Sarah to play with alongside her in the kitchen as she cooked. This was a strategy also used for outdoor play. For example, when Clare spoke of taking in washing, she would facilitate Hannah to be involved with her clothing basket and play along:

'You know, she'd kind of hang around with me actually you know. If I am taking in the washing she comes and takes in the washing with us' Clare, October 2009.

In this case, Clare found parts of the task that Hannah could join in on also rather than just simply be playing nearby. This demonstrates the interrelated processes at play here, as it is also likely that Hannah wants more to be near her mother than to just be playing outside. This aspect has been identified in infant play as we have seen and is described as a spatial tie that exists between infants and carers (Pierce, 1996). It may start by just

¹²¹ In Primeau's work with families in the US,(as noted earlier in Chapter Five) she noted that parents either work to include or to separate children in orchestrating play- where the child is supported to be involved in the daily family routines and play alongside the parent, or to be set up to play separately.

not wanting to leave a young infant unattended as in Maria's case. She described bringing Karen outside, aged nine months to watch from her buggy while she puts out the washing or cuts the grass.

This raises an interesting point when considering outdoor play in infants. If the spatial tie is an essential element in orchestrating play, and if mothers typically work to embed play in household activity, then how do these processes influence outdoor play? Given that many of these mothers work mostly on indoor tasks, their opportunities for the children to be outdoors seems limited. During the study, infants played indoors primarily and it was six months before outdoor play became a frequent occurrence: from September to March play was primarily an indoor activity due to bad weather. However, it also related to tasks. Both Aileen and Aisling as mothers would go outside to be there and supervise play rather than find tasks to do. Perhaps this relates to their personal characteristics and task preferences also. But perhaps it is also about playing outdoors being more linked to father's tasks. Aisling spoke about being outside as being 'more of a man's thing!'

'Usually it's when daddy is doing something outside we throw on the coats and he goes out the back with the two of them- we have a sand-pit' Aisling, October 2009.

Whether it is viewed as being an issue of gender or not, the key thing here seems to be the need to orchestrate outdoor tasks concurrently with play opportunities, if families want their infants to be involved more frequently in outdoor play. Mothers spoke more readily about how they orchestrate inclusive or segregated tasks indoors but less so outdoors. Their outdoor routines were less frequent than the indoor ones and consequently the outdoor play events appeared to be less common. This was a similar finding in studies of childcare settings in New Zealand, where they found that there was

a lack of outdoor routines (Stephenson, 2002) and in an Irish study of staff in childcare settings who considered the avoidance of the outdoors as culturally embedded (Kernan & Devine, 2009). Yet these mothers in this study valued the outdoors for their children. Is it that the issue therefore is related to the existence of fewer routines that occur outdoors to facilitate play in the same way as the indoor routines do?

The physical location of the home has a bearing on the play also and led to other strategies for orchestrating play routines. Maria worked hard to ensure they build in playtime together each week: they live on a remote farm with no neighbours' children to play with so the children play with each other. In comparison, other mothers structured play dates with other children (Clare and Vicky) or brought them to a park to the playground (Aisling).

So, in general mothers saw themselves as being a playmate with the children for many play events as well as being the orchestrators of embedded play or segregated play activities (Figures 16, 17 and 18). Mothers talked about not always being the adult who chases them to do their lessons (Maria) or the bossy mum (Aisling). Yet, in these families the emphasis in orchestrating play seems to lie with it being enjoyable rather than a learning process though Aisling did speak about the importance of play in helping the development of her children. For Maria especially she spoke from the heart about wanting to give them good memories as the most important thing for them growing up.

Orchestrating play spaces and events: embedding play into daily routines:



Figure 16: Having a special box of objects for Sarah to play with, when mum is in the kitchen.



Figure 17: Hannah's grandmother keeps a pot drawer where she plays.



Figure 18: Joe and his brother are encouraged to play outdoors when the car is being washed.

Games that families play:

It is likely that playfulness applies just as much to parent characteristics as to the infants, and that what we can see in the play interactions is related to different levels of playfulness in the adults also. This may be another factor that influenced play processes in the home. Clarke-Stewart identified this aspect of parent-child play interactions when she described parent play behaviours as being mediated by objects, words or physical contact (Clarke-Stewart, 1973). These represent the primary play approaches parents used and also reflected to some extent the infants behaviour so one influences the other. Observing and exploring games that families play helps illuminate such aspects of their play. For example, Aileen describes how they play in her bedroom:

Fieldnotes, July 2010: Aileen's bedroom is on the ground floor with low windowsills that Amy climbs and stands on, as they are deep. She loves to watch the dogs outside run about in the wide-open area beside their house, which is boundaried by a deep and high hedge and with trees. Her game is then to hide from her mother and peek. Another favourite game is chasing and tickling.

In another family, Clare found that she used singing a lot in her play interactions with Hannah based on her experiences at work:

'I suppose I sing more to her maybe than I would cos I know all the songs whereas... Because I used always teach the senior classes so I would have never been singing nursery rhymes or anything but I got the junior class last Easter so I learnt all the songs so I sing all of those' Clare, October 2009.

In Maria's home, she inducted Karen into chasing games up the stairs with the older children as part of their going to bed routines:

'I'd be taking the kids to bed and I'd put them up before me and I'd be mar dhea¹²² running after them and hitting her hands off the back of them gotcha, gotcha' Maria, April 2010.

¹²² 'Mar dhea' is an Irish phrase that means 'pretending' .

In each family there were many examples also of play with objects so play behaviours included all three of Clarke-Stewart's types. However, Karen's family seemed to emphasise language-based play more than object-based. For example, her mum describes a play event:

'That's what I prefer to do- Do you know now like- what we were doing the other day we were playing doctors and they had sticks and crutches and writing on their legs and I was giving them injections and do you know, and I'm looking at the kitchen saying oh my god, the cut of the kitchen and I'm playing with the 2 eejits and the other eejit here!' Maria, February 2010.

Maria values play and will aim to schedule weekly fun sessions with the children while the housework is put on hold. However, it weights heavy on her at times as she compromises as a result on keeping house. So, for her, there was a strong playful character to the family play routines. In comparison, Aisling found that she was the orchestrator of the environment for play more than being a playmate for her sons, and her nature was to provide the structure for play more than being the instigator of the play events in the same way as Maria did. Instead in order to meet her sons' need for physical activity play, she frequently orchestrated visits to parks and open areas.

Orchestrating play routines also involved specific processes of interaction between mother and the infant, to entice them to play. Characteristics in such interactions included structuring the environment for play (e.g. when Vicky placed a toy just out of reach on the floor to entice Sarah to roll towards it at five months), calling the infant's attention to specific features of the task (Figure 19) and general nurturing behaviours as have been identified in other studies (Ray & Tickle-Degnan, 2004). Other strategies observed included cheer-leading (where parents cheered successful play attempts), or questioning, and naming what the infant was doing. Equally, siblings were observed to have their own strategies for enticing the infant to play. These included actions such as

knocking on the window, showing how a toy works (Figure 20), banging a toy, beeping a horn on the Ridelaong car or modelling turn-taking in games of chasing (Figure 21) (Fieldnotes, March 2010).

Examples of enticement to task:



Figure 19: Sarah's mum taps her foot so she is encouraged to notice the exploratory toy on her foot.

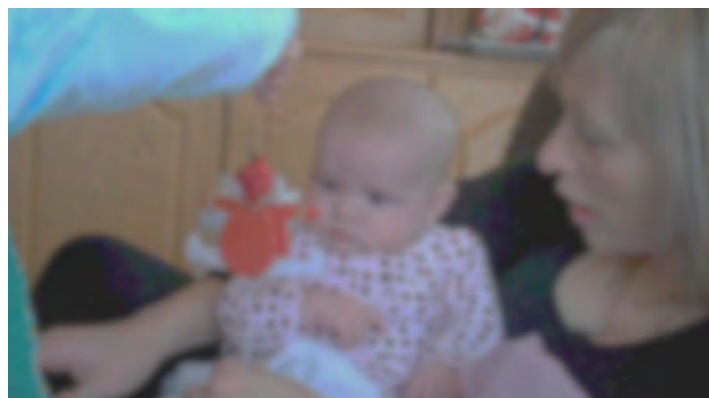


Figure 20: Karen's brother holds up a Christmas decoration for her to see.



Figure 21: Hannah's cousins show her (modelling) how to catch in a chasing game.

In studies of game-playing in infants the most common games listed were outlined in Table 5:4 and represented universal games that families play (Field, 1979). Similar games were noted to be common in the families taking part in this study (see Table 8:1). They involved singing and turn-taking as Clare, Aileen and Maria described, from basic to more developed levels. The ‘coming to catch you’ game is similar to the walking fingers game, while hidies and hide-and-seek were different variations of the peek-a-boo game (Field, 1979; Fraits-Hunt & Zemke, 1996).

Table 8:1: List of commonly played games that families played with their infants:

Games families play and songs sung together	Karen	Sarah	Amy	Hannah	Joe
Tickle game		√	√		
Coming to catch you (baby in chair)	√	√			
Peek-a-boo	√	√	√		√
Where’s your nose/mammy’s nose game	√	√			
Ta-ta game	√	√			
Hide and seek (self or hiding toys)			√	√	
Hidies			√		√
Hickory dickory dock			√		
Five little ducks went swimming one day			√		
Ring-a-ring a rosies			√		
Round and round the garden		√	√	√	
This little piggy went to market				√	
Bob the builder			√		
Jungle book songs from the book				√	
Horsey horsey				√	
Heads, shoulders, knees and toes			√		
Chase and catch	√		√	√	
Incy wincy spider	√		√		

Studies have shown that the amount of stimulation that a child experiences in the home from the mother is related to the child’s development (Clarke-Stewart, 1973) and that mothers are often the preferred play partners of infants (Lamb, 1978). Furthermore, studies have found that infants develop game playing skills when they are specifically facilitated in play (Haight & Miller, 1993). So it would seem that all the infants in this study have benefited from a responsive play environment in the home, where mothers

have provided stimulation through song, games and play, and have orchestrated environments to facilitate those experiences for the infant.

In each of these scenarios and examples of play routines and game playing in the home, it is significant that few toys were used. Infants instead most commonly chose to play with objects in embedded play when the parents are working on family routine tasks such as washing and cooking. For example, Sarah and Joe sought out beakers and containers with lids for kitchen play while parents were in the kitchen washing dishes. More commonly also, the physical environment was adapted or allowances made for how the environment can be used. An example of this was when Amy was permitted to stand in the windowsill to play peek-a-boo. Parents orchestrate play therefore through many of the licences they give to their children for play opportunities. This will be explored further in the next section.

Licences in the use of the home environment

While orchestrating play was a common theme, it was characterised by another dimension: the need to balance freedom with safety. This need to ensure that the infants were safe in their play emerged as an issue of what licences parents gave for their infants to explore and play in the home environment. The concept of licences has been applied to older children in relation to parents granting or denying of permission to access the environment (Tranter & Pawson, 2001). In this study of infants in the home setting, a similar dimension can be seen, where home spaces are used differently by infants who may attempt to climb, crawl and explore every part of the home, inside and out. Parents in the study generally tried to give their infants freedom to do this exploration. For example, Clare (whose daughter Hannah was one-year old at this time)

reflected on how she supported her daughter in the physical environment. Hannah was given free scope to roam at home:

'When we are at home she pretty much has free range to do whatever she likes in the house and then if I am doing something, if I am in the kitchen, she'll come in and open the door to the cupboards and just hang around and then you know every so often I might have time to go and sit down and play abit of Lego with her or something' Clare, October, 2009.

This was partly to do with Clare needing to be able to get on with housework after a day at work. She orchestrated the environment to enable Hannah to play, and expected her to play independently of her input (Figure 22). However, by December things changed. Though Hannah proved herself to have developed good skills in managing to climb and negotiate the stairs, she also became distracted at times and consequently had a number of falls on the stairs. Safety measures were employed as a result:

'We put up a gate recently. She has fallen down the stairs twice so- she just doesn't understand. I thought that she would because she was so good at going up and down that there wouldn't be a problem but you see she stalls and gets distracted and then stands' Clare, December 2009.

Clare weighed up her need for safety with her need for independence and decided on hindsight to fit a stair gate to keep her safe. Once all of the five infants began to be mobile, stair-gates were fitted to ensure their safety but also to allow them to roam freely in the downstairs section of the home (Figure 23)

Equally, Aisling speaks a lot about how she tries to facilitate play with her two boys, but at the same time tries to ensure they are safe. For example, playing outdoors was not something she generally gave them permission to do during the winter unless their father was around. However, by the end of the year, when Joe had reached two-years of age, this has changed and she could leave them to play more independently outdoors without her needing to be there constantly to supervise. However, despite this '*retreat to home environments*' as Hasluck and Malone talked about (1999, p. 178) their parents

gave them licence to engage in physical play in their playroom instead (Figure 24). Here both boys could climb on furniture and jump from table to chair and climb onto the window ledge also. This was only allowed in the playroom and not elsewhere in the home. However, running was allowed elsewhere in the home:

'When these 2 are together the noise is something else. Running up and down the hall after each other and running around the table! Chasing each other, like the 2 of them- now that's when a lot of accidents happen. He walks into walls and...!' Aisling, January 2010.

Consequently, Aisling felt like she was not being an ideal parent. While she aimed to allow the boys a good deal of freedom in the home, she was also trying to ensure their safety:

'It's very much the bossy mummy now-don't do this, and leave that alone and everything' Aisling, January 2010.

So Aisling regretted the role she was being forced to take, as she valued being able to be warm and loving with her boys yet found she could not always be that way due to their high levels of physical play which led to upset and accidents among them. This is an example of the personal issues that can arise for parents in trying to be a 'good-enough' parent: the dilemma of making choices to allow freedom or enforce rules for safety. This brings us now to consider the third dimension, which relates to the parenting processes that underpin all of the aspects already explored.

Licenses in the use of the home environment: toddlers:



Figure 22: Hannah is allowed to play with paint in a designated area marked by the floor mat.



Figure 23: Amy is only allowed to climb the stairs with supervision. A stair-gate is in place for safety.



Figure 24: Joe is afforded indoor physical play opportunities in his designated play room.

3. PARENTING PROCESSES

The third dimension of home life is now considered from the perspective of parenting. We have seen how the greater social-cultural setting influences the home and also how families orchestrate play in the home but now the parenting process is focused on as the driving force within the home. This emerged through data analysis as being related to parent values and attitudes, characteristics, and experiences. Of note is the fact that parenting attributes are identified as those that influence development most, alongside the quality of the home environment (Nihira et al., 1994).

Parent values and attitudes come from belief systems that are usually derived from within communities where the families and communities live (Humphry, 2009). In these communities play may be valued or not (Rogoff, 2003), and learning may be considered as part of play or separate to play:

'I was showing them last weekend how the flowers have gone to sleep and they were amazed- I used always be amazed by that when I was a child' Maria, April 2010.

For Maria in this excerpt above, she had brought the children for a rare walk along the road nearby their home and talked about the flowers with them, realising that she had loved this herself as a child. Her way of being with her children relates to what she knows and values from her own childhood. In other moments she talked about religion, expectations and practices regarding social behaviour, and discipline. For herself, she repeatedly spoke of giving them memories. This she also related to the fact that her father died two years ago and she seems to draw from that loss in relation to her own children- that time moves on and we need memories to sustain us too. Thus, Maria is an example of a mother who places high value on the past and on memories as part of her approach to childrearing, and is guided considerably by her own experiences.

Parenting values and attitudes towards their infants' behaviour:

The issue of childrearing and behaviour came up with these five families over the year. Discipline was considered important in every family, and frequently related to play interactions, specially in Aisling's family, where she needed to constantly supervise and orchestrate play for her two very active boys under the age of four years:

'He needs abit of watching (Joe) and you'd be afraid that to leave the two of them together too long...something usually happens ...I believe they should be reprimanded (if they misbehave). We started doing it (using a naughty step) when he was about one and a half, I think it does instil some bit of respect for parents and what's right and wrong' Aisling, October 2009.

In comparison, other homes did not have the same pressure for discipline as Aisling's home. Maria talked of childrearing in relation to making sure her children are sociable like she was reared to be. She consequently valued skills in her children such as being polite in welcoming me to her home, and talked about routines such as going to town each Saturday with her children:

'I love Saturday. I like to wash them and get them down and do the shopping then the 3 of us or 4 of us- Tadgh and Dinny would be at the mart usually on a Saturday' Maria, November 2009.

This routine involved having the children smart and 'presentable' and ready for socialising in the town, which is important to Maria. She also spoke of not giving them encouragement all the time:

*'That's what I think sometimes- you can be putting them down and you see other people then putting theirs up and that's no good. But I suppose if you just, I don't know, because we were brought up that you don't have a big head, and not that you are **not** confident, but that you are not oozing!' Maria, February 2010.*

So, keeping her children grounded was also a concern. Her ties with her own experiences of being reared are again evident here. This is known to be a major influence in parenting (Lerner & Ciervo, 2010). In Maria's family as in many across

Ireland, it was seen as important to not give your children a ‘big head’ by praising them too much. This is what she refers to as ‘putting theirs up’. She highlights here her sense of being at odds with others in her environment that have moved towards a more encouraging approach to parenting, and who choose to use praise frequently.

However, in everyday activities Maria and the other mothers all encouraged and celebrated achievements with their children in the home and being independent was highly valued. Celebratory events were noted such as when Sarah moved into her own room now that she was sleeping through the night or when Joe got his first pair of shoes now that he was walking. With the toddlers specially, new learning in relation to self feeding or drinking was a particular highlight along the way. This was facilitated by the use of varied cups and feeding utensils that supported self-feeding, and was used in a trial and error process until the infant found their way. Hence it was typical that when an infant learned new skills, it was often accompanied by physical changes in place, space and object use.

Overall, the infants were encouraged to be gentle in their play with others, to share their toys even if they did not yet understand what that meant, and to take part in family or in social events appropriately (Figures 25 and 26). This was all promoted through showing the infants what to do as well as telling them, and in encouragement rather than discipline in the most part. When discipline was needed, the use of a naughty step was implemented as a strategy in two homes, reflecting the influence from contemporary television programmes both mothers valued and watched for guidance.¹²³

Aisling: ‘yeah, now I put him on the naughty step yesterday and he kept getting up, thought it was hilarious, I kept putting him back and eventually then he

¹²³ The ‘naughty step’ was introduced to Irish parents through a TV programme on parenting, as a strategy to help discipline young children. The bottom stair or step is a designated spot where the disobedient child is placed and has to remain there for a short time.

started crying and he stayed there for the minute, whereas it was a game initially to him, so that's why I keep saying to Séan we need to keep on top of it.'
Helen: 'So he knows it's not a game like?'
Aisling: 'Yeah. So he won't understand that he has been naughty'.
August, 2010.

This excerpt was taken in August when Joe was just approaching his second birthday. In each incident Aisling refers to naughtiness, in relation to incidents when the boys did not act safely or kindly to each other. So the rules of the house are basically related to being safe and not to hurt each other.

Encouraging gentle play between the children:



Figure 25: Sarah's mum models gentle behaviour with Michael. They are playing the 'I'm going to get you' tickling game and both gently tickle her near her face to make her laugh.



Figure 26: Michael's ability to play with Sarah in a gentle way is apparent in their play events later in the year. Here he is playing at being doctor.

In a study of mother and child interactions, emotional availability in early child-rearing practice was highlighted as an essential element (Bornstein et al., 2008). Their study identified the importance of specific aspects such as maternal sensitivity and structuring along with nonintrusiveness and nonhostility. For these five families, evidence of structuring and responsiveness to the infants was apparent, with concern to ensure the home was a safe and happy place for all the family members. This balance between being encouraging yet expecting good behaviour appears to meet the definition of a more authoritative parenting style than one of being authoritarian or permissive (Baumrind, 1966, 1967). For Aisling who has two active boys, she uses a more authoritarian approach due to needing to provide more control on their behaviour however. This has also been identified in studies of parenting approaches with younger children (Halpenny et al., 2010). The need for a more structured home environment with active children has also been identified as an important factor in how the environment can optimally support development (Wachs, 1987). So it seems that Aisling is meeting the needs of her infants in providing more structure for them within the home routines.

Parenting differently: competing demands

Parents' attitudes and values towards childrearing are not fixed and stable but involve a shifting process over time as experiences change parallel to the growing and changing needs of the infant. This was most evident in experienced mothers who spoke of how they now **parent differently**. Aisling, Maria, Vicky, and Clare all spoke about this aspect of parenting when the second or third child came along. For example, Aisling, who has Joe as her second child talks about how she now deals with sleep routines differently with Joe compared to the first child:

'We didn't make that mistake.....first child just molly coddling him- we didn't know any different (re: rocking Martin to sleep and not helping him get to sleep by himself' Aisling, October 2009.

By the following month I had noted this emerging dimension of parenting processes:

Fieldnotes November 2009: For the families visited so far, there appears to be a process to parenting that potentially affects the nature of interactions in the home. While the values might be the same in each family, the realities are different when you have a second child. Each family of two children or more has spoken about being different for the second child. Mothers are more able to leave the child cry or to settle themselves to sleep. The worries for the first child were part of the learning process of parenting which the second child reaps the benefits of.

These fieldnotes highlighted a new realisation for me in relation to changes in parenting approaches that relates to the link between values, attitudes and action. While mothers hold strong ideas about childrearing and ideal practice, they also face realities whereby they may behave differently to what they ostensibly value. So although there is a change in how parents cope with a second child due to being more experienced, they also struggle more with competing demands. Their values and attitudes may still be the same as for the first child but equally they may be less able to act on them in their daily lives. For example, Aisling believes strongly in routines and discipline, yet she was not able

to implement a consistent approach to these aspects due the demands of trying to keep a home going alongside meeting the needs of two small children:

'It's no joke running a house....between washing and cooking and cleaning and... try to help these develop (she nods towards the children), you know.... and to be em...strict... to be trying to be a good parent' Aisling, October 2009.

There appears to be a tension and a constant interplay between what is valued and what is possible. Observing interactions and events only gives one perspective on this process and therefore exploring the meaning that underpins parenting behaviour, along with an exploration of their values and attitudes is vital. Competing demands of everyday life means that parents may hold values that are not always possible to act upon in the day-to-day realities of life.

HOW THE HOME SOCIAL ENVIRONMENT INFLUENCES PLAY: PARENTAL REASONING.

This study aims to explore the home environments through a physical lens, in order to better understand, how the home supports and influences play and learning. This chapter presents findings from the sociocultural setting of the home, which is foregrounded specifically before considering specific infant play patterns within the physical environment. Analysis has shown the complexities of the home setting from a sociocultural perspective, with multiple influences interweaving to impact on the infant. But how do these different influences interweave and actually shape the infants experiences in the home specifically? We have explored the concept of social capital and parent processes to identify how parents influence the home environment. However, there is an alternative hypothesis that can be considered. This hypothesis began to form early on in the study and noted in fieldnotes:

Fieldnotes, July 2010: I note when reviewing the data from my twelve months of study that parents present with a specific way of being a parent that seems akin to the studies I have read on professional reasoning. It also matches Glaser and Strauss study of staff working with dying patients (1968 cited in Atkinson and Hammersley, pg. 179)- that they construct ideas about patients based on temporal knowledge of what has gone before and what their trajectory for the future is. This seems so similar to Mattingly and Flemings work on clinical reasoning. Each study highlights how humans respond to daily events by drawing from multiple sources of 'knowledge' including experience, intuition, common sense, where estimates of what will happen in the future plays a part. I have seen this in the mothers of my study who have each reflected on their 'future child'. Even where parents may be first time parenting, they comment on their ideas for their child's future in terms of expectations and hopes.

Consequently, the literature on clinical reasoning was explored to see what insights it might bring to this study. In occupational therapy and other health professions the need to understand **how** professionals think as well as **what** they think became a focus of research in the late 20th century. This new focus emerged from a need to be able to articulate how people's actions are influenced by their thinking which was not based on theoretical knowledge alone but informed by many different values and attitudes (Mattingly & Fleming, 1994). It was also influenced by theorists such as Schön who wrote about reflection-in-action, across different disciplines, highlighting different thinking styles specific to different disciplines (Schön, 1983). Hence, there is evidence that particular disciplines have different reasoning patterns. Can this be applied to parents also?

Mattingly and Fleming's research of the culture of occupational therapy identified many key aspects that have informed our practice, for example that practice is viewed as an unfolding event rather than a series of complex problems. Within these unfolding processes, therapists use many different forms of reasoning concurrently that are a combination of thinking and perceiving (Mattingly & Fleming, 1994). Their research highlighted the significant role of the values, motives, and beliefs of the people

(therapists) involved. The outcome from this three-year study was the development of a language to explain these processes, which was viewed as essential to be able to articulate the processes involved as it *'gave validity to the realities of practice that before this were usually relegated to the underground'* (Mattingly & Fleming, 1994, p. 12). If we are to consider whether parents participate in a similar process in parenting, then there is a need for a similar focus on having a language to explain these processes as a vital step.

Four forms of reasoning were identified in occupational therapy practice: procedural (which relates to problem solving and is knowledge based), interactive (which deals with the person and the reasoning used to support a better understanding of that person's world-view), conditional (which relates to a social-based reasoning emphasising the focus on restructuring the person's life towards a better future) and narrative reasoning (which refers to the natural use of story-telling around patient problems as a shared practice, in order to support problem-solving and building meaning in therapy). Narrative reasoning is linked to the idea of community of practice type situation, which recognises learning as being a social process (Wenger, 1998).

This body of work is grounded in the idea that theory can arise from practice which went against the dominant view of the time (Mattingly & Fleming, 1994).¹²⁴ Schön viewed the development of professional expertise, as a process that emerges from practice through tacit or implicit knowledge that is gained through action and through experiencing events and reflecting on them. These experiences form tacit knowledge which in turn gets incorporated into and guides future action. So Schön's work uncovered a new way of understanding professional practice: that it is underpinned by a

¹²⁴ I.e. that practice is the application of theory.

valuing of learning through doing and a valuing of the knowledge that comes from such experience (Schön, 1983). Schön talks about it the ‘common sense’ of knowing: *knowing how to do something*.

We know from these studies on professional reasoning that people respond in the moment by drawing from different types of reasoning depending on a range of contextual factors. Similarly, parents’ decision-making is a basis for family life and core to how infants are reared and supported in their learning. Knowing how they reason seems an important contribution to knowing how they influence infant learning and development.

Using the existing studies of clinical reasoning as a guide, a number of different reasoning forms were evident in this study of family life:

- ***Knowledge-based reasoning*** (factual) - This form of reasoning is easily recognised and is comparable to **procedural** reasoning in the occupational therapy studies. This type of reasoning draws from theoretical or scientific knowledge about parenting and child development, and is especially evident in the two mothers who work with children. In both cases, they reflected on how their work shapes their play at home with their infant.
- ***Sociocultural reasoning*** (values and attitudinal-based) – this form of reasoning draws from the social and cultural attitudes and values of the parents and therefore is strongly linked to the communities in which they live. For example, in these five families, close ties were maintained with their extended families and communities, through shared customs and rituals. Parents worked to sustain these links through regular visits and shared events. It is also significantly shaped by the parents’ own experiences of parenting and therefore has a strong historical connection.

- ***Future reasoning-*** In every family, mothers spoke about their knowledge and expectations for the ‘future child’. Each kept this close as a guiding theme in their approach to childrearing. For example, Clare spoke of the importance of developing good habits early, as she is thinking about the impact on the future. In the occupational therapy literature, this relates to **conditional** reasoning which focused on a future narrative for the patient.
- ***Personal reasoning-*** This type of reasoning is characteristic-based and draws from the parents’ own characteristics or personality traits which determine their emotional responses among other things. It matches Bronfenbrenner and Morris (1998) emphasis on parent characteristics as a force that shapes development in the child. For example, Maria is a playful mother who loves the magic of Christmas and fairy stories, and these are common themes in her play with the children,
- ***Practical reasoning-*** This relates to the availability and access to resources, which influences choices based on what is feasible or possible. It matches **pragmatic** reasoning in the occupational therapy literature. For example, even though Vicky values outdoor play, she does not have immediate access to the back garden from the kitchen, and therefore does not facilitate outdoor play as often as she would like.
- ***Narrative reasoning-*** This form of reasoning can be easily seen in parents as much as in therapists, who rely on sharing and engaging in story-telling in relation to everyday moments in child-rearing. For these parents, this was evident in gatherings where parents met to share and trade challenges and solutions. These ‘communities of practice’ (Wenger, 1998) provided a forum to share learning through the use of social networks and participation in community processes to develop meaning and develop abilities. This was evident in all families when mothers spoke of asking

their own mothers for advice on childrearing, or their friends and work colleagues. It therefore is closely linked to the concept of social capital.

The processes that can be identified therefore in family life involve a constant interplay among these different types of parental reasoning. Some of these forms of reasoning mirror the forms of reasoning in therapy practice (e.g. knowledge-based reasoning). However, some do not (e.g. sociocultural reasoning). From analysis of the data and from the findings presented in this chapter, I consider sociocultural reasoning to be a core aspect of parental reasoning that is not so evident in therapy practice. This is because parenting by its very nature concerns sociocultural induction and socialising of the child into the world. Therefore, sociocultural reasoning was identified as a form of reasoning in itself. Personal reasoning is another form that is not addressed in therapy reasoning studies, yet has a major influence on how the home environment is structured to support play and learning.

From this analysis, parental reasoning can be described as part of the unfolding of parenting practices that change over time. Reasoning is also built on practice, and parents with experience of parenting more than one child know that they parent differently as we have seen. So these parenting processes also demonstrate a novice to expert practice continuum that is seen in other types of practice (Dreyfus & Dreyfus, 1986). Parents reported that they relied on knowledge-based reasoning more in the early days of parenting their first child due to the novice nature of their parenting practices (e.g. parents who talked about relying on books). However, the more experienced parents relied more on tacit knowledge and common sense (e.g. Clare and Maria when they spoke about taking and receiving advice, pp. 247-248).

Summary

To conclude, parents in this study when asked about how they are as parents say it is just common sense. Yet we can see from this chapter the complexities of the sociocultural processes that influence the home. When these processes are analysed however, parents can be identified as the catalysts and weavers of all the strands of influences into the processes that shape the physical-social-cultural-emotional environment of the home. Parental reasoning was proposed as a perspective that enables us to understand these transactional processes that influence the infant in the home. Through parental reasoning we can see how and why the environment is orchestrated as it is in each home differently, and how decisions are made about routines, play, learning and socialising for the infant. Parental reasoning can therefore be identified as a core process that influences infant learning.

So the story so far that has been told is one about families and homes, and the highs and lows of everyday life in five families in Ireland in 2010. We have begun to explore along the paths of their children's lives, to see what their family story is so far. Moreover, we have mapped out the social environment as viewed through a physical lens, but now need to ask how are the infants themselves negotiating the challenges of learning in the midst of these families and in these specific physical sociocultural settings? The questions that initiated this chapter related to the need to know more about the home as a social and cultural environment in order to explore the nature of infant play in the home. We have begun to understand part of that story through the lens of family life. The next chapter will now go deeper into exploring the physical environment as it contributes specifically to the processes of infant play within these settings now described. The next chapter will begin that story.

CHAPTER NINE: FOREGROUNDING PHYSICAL PROCESSES OF THE HOME ENVIRONMENT

RATIONALE:

While the previous chapter illuminated influences of the sociocultural environment on the physical setting of the home, this chapter now explores the physical environment in relation to the infants' play transactions, as they begin to interact with the places, spaces and objects around them. Chapter Eight began with a look at the home as physical settings that reflect the wider sociocultural environment. This chapter begins with a look at the physical environment by describing the material culture of childhood that was found in these five homes. Material culture refers to the objects of everyday life that include artefacts, toys, materials and possessions (Hocking, 1994). These reflect sociocultural, individual and physical processes as we have seen (Hasselkus, 2002). Following that, the home setting is described in relation to how places and spaces are used. Then the main findings from data analysis are presented through exploring the trajectory of change over time of the infants' transactions with the physical environment.

Objects and Material Culture:

In the family homes we see materials and artefacts that relate to the presence of children and would not be there but for the children. For example, we see the use of child-sized furniture in all the homes that has been designed for infants specifically. For babies this means more specialised equipment such as a baby bouncer chair, which holds the baby in sitting or reclined positions before the infant can sit. As the infants develop, furniture evolves into smaller versions of adult pieces, such as a small chair and table at which to

play. Objects therefore are used differently over time, due to changing needs of infant and family and also depending on the context (e.g. where there is inadequate space in the home for a small chair, as in Clare's situation outlined in the previous chapter).¹²⁵

For some families with older children there are material examples of how rituals influence the home environments. For example, Sarah's older brother has been to Halloween parties and so has Erin (Karen's sister). Both have brought home pictures they drew in school/play school/childminding. These artefacts become part of the material culture in the home. They are displayed on the walls of the playroom (Martin), the walls of the kitchen (Michael) or on the window of the family room (Erin). These were related to Halloween ghosts, and witches. The image of the pumpkin is also seen even though this is not an Irish tradition. For each family, there is a sense of valuing the work of the children by displaying it and of valuing family celebrations by putting up pictures of events to remember these moments during the year.

Material culture also includes objects such as toys that are considered a valuable resource for play for the infant based on sociocultural beliefs. The valuing of toys among families varied from prioritising toys for play, to only viewing them in terms of presents that are given on birthdays and Christmas. Consequently, there was a wide variety of objects considered as 'play' materials between the families. Appendix J presents an overview of a range of child-related artefacts found in the homes including 'holding' equipment (such as buggies, baskets, chairs and bath inserts), things that support play (such as playpens, or floor mats), individual artefacts (such as photos and pictures drawn by the children) and play materials (such as soft toys, and toy/object boxes).

¹²⁵ Demonstrating the inter-related processes that influence play PPCT.

Places and spaces: How they are used in the home:

As we saw in Chapter One, Spivak (1973) established 13 different needs for home spaces based on a functional analysis of activities that need to be carried out in daily life. Equally, Francis and Lorenzo (2002) mapped out spaces related to outdoor use, based on whether they were purpose built or planned. Both analyses of the environment guide an analysis of place-use for infants. With regard to infants, functional needs can be identified that include the need for a place for shelter, sleep, grooming, feeding, toileting, personal space, play and socialising. These needs are met in various ways in each of the family homes in this study. For example, a place for grooming included a formal place such as a bath, (e.g. Amy) or an informal place such as the kitchen sink (e.g. Karen). Sometimes a place for eating was the formal table (e.g. Joe), or the floor (e.g. Hannah). Furthermore, these formal or informal places were commonly also adapted for functional use (e.g. the use of a bath insert for Amy). Places were used therefore based on function and can be outlined in a typology as follows (Table 9:1).

During the study it was evident that while these places are named by their functional use, infants typically played during all such functional activities, so play was a concurrent feature of bathing, feeding and toileting. Hence, in exploring infant play, it is important to consider all the places where play is known to happen, though these may not always be observable.

Table 9: 1 Place and space use as they relate to functional needs of infants:

Functional use of places	Formal places: Purpose-built/ designed for infants	Family places/ adapted; use of existing furniture or spaces for infants' needs	Informal: use of social and physical setting
Place for sleeping	Moses basket Cot	Bed with cushions to protect from falling	Corner of the couch
Place for grooming	Changing table Baby bath	Bath with insert	On mother's lap
Place for feeding	Baby-bouncers High-chair at table Booster seat at table	Family kitchen chair with cushioning	On mother's lap Designated floor space for infants who can sit independently
Place for toileting	Changing table Potty	Toilet not used until toilet training at later stage	On bed On mother's lap
Place for personal space	Baby room	Shared bedroom- with parents or siblings	Within Moses basket, buggy, playpen
Place for play	Play-pen	Play room or designated play area	Anywhere in the home/ use of toy boxes
Place for socialising	Baby bouncers, baby standers and walkers placed centrally in family activity	Use of arm-chairs, couches to enable infant to be in the middle of the social environment	On floor On mother's lap

As I analysed how places are used by and for infants, it became clear that analysis of place cannot be done effectively without considering simultaneously the material culture of childhood that supports the functional use of place. For infants who cannot support themselves physically to stay in place, equipment and adaptations are frequently required. So, place use is dependent on the presence of objects in many situations. For example, in Amy's home, the family purchased a bath insert so that Amy could be in the bath with Aileen beside her to help wash her:

'First of all we had a bath in her changing bench and that was when she was tiny and that worked out grand. And when she was bigger -we never thought of this point when we were buying our bath. It's a very deep bath. It is one that stands alone and sure it is impossible to (gestures leaning over a high bath), but mum has this little fold down step stool so I sit on that, she's in the (insert) bath, her bath and that's easier as equipment goes that's an adaptation' Aileen, November 2009.

In the absence of this insert, Aileen would have been bathing her in the sink or shower, which was not the preferred choice.

TRAJECTORY FROM BIRTH TO TWO YEARS: PLAY IN THE PHYSICAL ENVIRONMENT

The purpose of this study was to explore the developmental sequences that can be identified in relation to the interactions between the infant and the physical environment over one year. For the study, five infants participated so that we could observe babies from birth as well as toddlers from age one. Before we look at that trajectory, some considerations were needed in order to have a clear point of departure for analysis.

Intentionality and purposefulness:

As outlined in Chapter Six, observations of object and space interactions in this study were noted when an infant demonstrated intentionality and purposefulness in their transaction that appeared to relate to a sense of agency (Wood et al., 2000). While this may not be a generally accepted view of infants' actions from birth, studies have shown that infants from the earliest ages are exploring their environments and consequently are considered to have agency as actors within their worlds (Nagy, 2011; Rochat, 1989; Trevarthen, 2011). Intentionality and purposefulness can be observed in movements that are not aimless or random, and that seem to have a goal in mind. Such interactions were observed in this study from within the first two months of life, where infants were observed directing and sustaining visual attention at an interaction, for example. Reed describes these earliest forms of agency as being evidenced by:

'Directedness, persistence and resilience: directedness towards objects, places or events relevant to intender's situation, and persistence until the intention is met and recognised as having been met by the agent while resilience in the face of perturbation whether from the environment or personal' (Reed, 1993, p. 62).

For example, when Sarah repeatedly moved her foot to shake a bell on her sock, she demonstrated that she was being intentional and purposeful in her movements, with the

goal of repeating the experience of causing a bell to ring (five months). She continued to interact with this physical object despite her brother talking and playing alongside her, which could have been a disturbance (or ‘perturbation, as Reed put it) but was not (January 2010, observation transcript).

While initially all observations were transcribed and coded, more focused coding was applied to interactions that related to key episodes each month. These episodes were those that had stood out as being the most intentional and purposeful for that particular infant during that particular visit. In some cases mothers described these interactions as the baby’s favourite activity, but this was not always the case. Consequently, it is acknowledged that the observations may not have captured the **optimal range** of examples of interactions during the year but may be considered as strong examples of more typical daily interactions instead. In this way, the interactions identified for further analysis are those that were likely to provide richer data and more prolonged interactions than the apparently less purposeful or intentional interactions. However, all interactions were reviewed and compared to the key episode in order to understand more about similarities and variation within the play processes being observed (Rogoff et al., 1995). In some cases, mothers or siblings scaffolded these episodes, but once the infant demonstrated individual motivation to engage and interact in an intentional and purposeful way, the episode was identified as a key episode and selected for more focused coding. In babies these episodes were brief but as the infant developed and changed, the length of persistence grew also.

Affordances

Affordances refer to properties of objects, places and events in the environment with which the infant interacts, as outlined in Chapter Two. In this study, key episodes of

play interactions were analysed for the affordances offered by the environment, which means that only utilised or actualised affordances were identified rather than those that were potential but not actualised (Heft, 1988; Kytta, 2003). Consequently, primacy was given to the function actually used by the infant, rather than the function for which it was designed. By emphasising function we are attempting to view the world of play primarily from a child's perspective than an adult's. This strategy was used to approximate the infant's viewpoint and to acknowledge the infant's voice in the process.

Levels of spatial interactions:

So, having set the scene for this aspect of the chapter, the play activities from each month will now be explored in order to develop a deeper understanding of the processes involved in the play transactions with the physical world. The final problem to attend to is the level of description. In Kytta's and Heft's work, the researchers were looking at children of middle childhood who can engage in complex play activities such as throwing and cycling (Heft, 1988; Kytta, 2003). They did not list affordances such as grasping a ball or lifting an arm as part of throwing, for example. The affordance is named in relation to the complete activity or function that is observed rather than breaking it down into component parts. In this study, each play episode is noted from birth to two years based on the activity level rather than on a body-function level, which would result in a lengthy task-analysis of body movements. It is noted however that actual infant activity may be named simply in terms of basic body movements due to their novice stage of skill development.

In order to understand the qualities of the environment that support play, it is first important to identify the behaviours that are important or evident at different phases of

the infant's development (Strinistre & Moore, 1989). Guided by the literature (E. Gibson, 1988; Henderson, cited in Munier, Teeters-Myers & Pierce, 2008), I was able to focus more specifically on the taken-for-granted interactions in the infants over time.¹²⁶ This analysis highlighted the following phases of play interactions: from body space, to near space, middle space and home space. Specifically, the following phases were identified:

- ***Being in space***: during the first few weeks, infants were observed to 'be in space' without a specific ability to intentionally act in their physical environment as yet.
- ***Body space and body play***: relates to play that takes place on or with the body such as sucking on fingers, playing with toes or hands and was evident during the first few months.
- ***Near space and sitting play***: relates to play that is within arm reach usually when the infant is sitting in a baby seat or on the lap, and is handed an object to play with. Beginning about the fourth or fifth month, the infants were observed to need a high level of support initially to enable this play to happen, as they did not yet have the body control to actively reach or sit independently. By the sixth or seventh month, while the infants could not yet move beyond their sitting position, they were able to control and choose their play opportunities a bit more.
- ***Middle space and reaching play***: is where the infant can now use motor control and motivation to reach for objects nearby. For the infants in this study, it began about the eighth month until the infants were beginning to walk at about the twelfth month. This involves floor play including sitting, rolling, creeping and early

¹²⁶ Henderson's spatial typology (cited by Munier, Teeters-Myers & Pierce, 2008) and Gibson's phases of exploration (E. Gibson, 1988) both identify a functional perspective on viewing infant interactions with the environment.

crawling and is described by Gibson as a stage of moving into spaces (E. Gibson, 1988).

- *Home space and advanced infant play*: This is now where the baby can move outside his or her initial position to actively cruise or even walk to where the object of interest is within the broader spaces of the home. It is divided into an exploratory phase and an expert phase over 12 months.

HOW THE PHYSICAL ENVIRONMENT IS USED IN THE HOME OVER TIME:

This section will now present findings in relation to each phase of infant-space play by describing the characteristics of play through the nature of interaction observed, space and place use, and object/toy use. When considering how to analyse the trajectory of play in the physical environment, the question arises: do we consider objects separately from spaces, or should we explore them concurrently to capture the bidirectional association between them and the child's behaviours? During analysis it became inherently clear that separating the two only results in a weaker understanding of how each influences or engages with the other. Accordingly, each phase of change addresses space and object use concurrently.

The trajectory that is outlined in this section was generated from analysis of the interactions of five infants within their home environments, which takes us therefore from birth to 24 months: 0-12 months with regard to Sarah and Karen, and 12-24 months with regard to Joe, Amy and Hannah.

BEING IN SPACE: the early weeks following birth

The nature of interactions:

The first few weeks of the infants' life can be described as a process of **being in the atmosphere of doing**. This term was used by Jonsson (2007) to capture moments when a person is part of an event but not actively engaged. Yet this level of non-engagement may be the optimal in terms of participation that is possible for that individual. Hence for babies who may not have yet learned to be active in the world, their participation can be termed as being in the atmosphere of doing. Karen and Sarah are noted as being in the environment, watching, moving and reacting to the physical and social setting rather than having any intentional or purposeful interaction. Both babies were at a stage of responding to their own physiological, biological and self-regulatory needs. Karen for example was able to respond to being hungry by getting irritable and in doing so begins the reciprocal interactions that will shape her social world. Her mother watched closely and was vigilant for any cry or unease in her, and worked to not just respond to her needs but to anticipate them. The same processes were observed in the homes of both of the newborn babies. Both mothers spoke of 'wondering who the baby is', as if for them it is a voyage of discovery. They both saw these first few weeks as a time of finding out about the baby and their needs and what their cries mean.

This phase can be viewed as being pre-occupational as both babies had yet to gain any ability to demonstrate a goal oriented, intentional action or occupation. Yet there was also an element of emerging occupation as the infants began to be able to focus their visual attention as when Karen, sitting in her bouncer, demonstrated her ability to visually track her mother moving past. She was able to focus her attention to her mother

and seemed to identify her mother by choice. Even though her brother was beside her she preferred to latch her eyes onto her mother more consistently. Emerging occupation may also be indicated by early signs of smiling in response to attention (Sarah).

This phase appears to demand a separate description of its own, as it differs from the next phase when evidence of intentionality is seen. It is noted in other studies as the stage of elementary sensorimotor adaptation (Munier et al., 2008).

Space and place use:

The physical environment is primarily concerned with affordances to support the baby in sitting and lying. In this phase, space and place use was determined by the infants' needs in relation to their daily routines such as feeding, sleeping, and washing which were identified as care and comfort routines in the data analysis. Early interactions at this stage involved primarily engagement in socialising activity even if it was at a passive level for the baby. The baby was placed centrally in the physical space so that mothers could keep watch and be responsive, while siblings were noted to bring toys to them and to rub their heads as they passed by or look into their faces as if as a process of getting to know them. So, social affordances were maximised through the use of physical affordances such as baby bouncers and of equal importance, through the use of the mother's lap. These spaces enabled the infant to face the world while being physically supported, and therefore to observe their surroundings. Physical spaces were used that afforded socialisation interactions or that afforded sleep. For example, when the babies needed rest, they were faced away from the environment, either facing inwards towards the mother on her lap, or inside a Moses basket facing the sides. In both cases, light levels and stimulation levels were reduced through the use of space.

From the outset, the mothers used home spaces to help the baby develop sleep routines with the upstairs being used at night for sleep while the downstairs was used during the day. Both mothers of the newborns have older children and acknowledged their wish to help the baby get used to a noisy house during the day as part of the process of developing self-regulation and adapting to the environment. So the primary purpose of places involved during this phase can be described as social places (holding the baby in the social environment) and holding places (containing the infant during care and comfort routines (Figures 27 and 28).

From birth, both of the newborn babies have the use of baby equipment that had been bought for the first child in the family or borrowed from family and friends. Items that were considered essential and were present in both homes included a car seat, a baby bouncer chair, and a Moses basket to enable the baby sleep beside the parents for the first few weeks. Optional items included a baby changing table (Sarah's home) or a mat on the bed for changing the baby (Maria's home). A baby buggy was used in one home for supported sitting also. While one baby had the use of a plastic chair for bathing, the other infant was bathed in the sink or in a shallow bath.

Object and toy use:

Baby objects for feeding and soothing were evident, with both mothers using bottles for feeding as well as soothers for helping the baby settle to sleep. Toys such as soft animals were present in both environments and brought over by siblings and mothers to the babies, but not actively used by the babies. Table 9:2 summarises this phase.

Table 9:2: A summary of phase one: Being in space.

Time/phase	Nature of interactions with physical environment	Space and place use	Object and equipment use
First few weeks	Pre-occupational Being in the atmosphere of doing	Used to support sleep and wake routines Day routines different to night routines and space-use- Spaces for socialisation-facing towards the room and people in it Spaces for sleep facing away from room and people in it.	Baby equipment for holding and supporting care and comfort routines

Being in space- examples:



Figure 27: Karen at four weeks, being in the world. Her mother's lap provides a safe, physical place to sit.

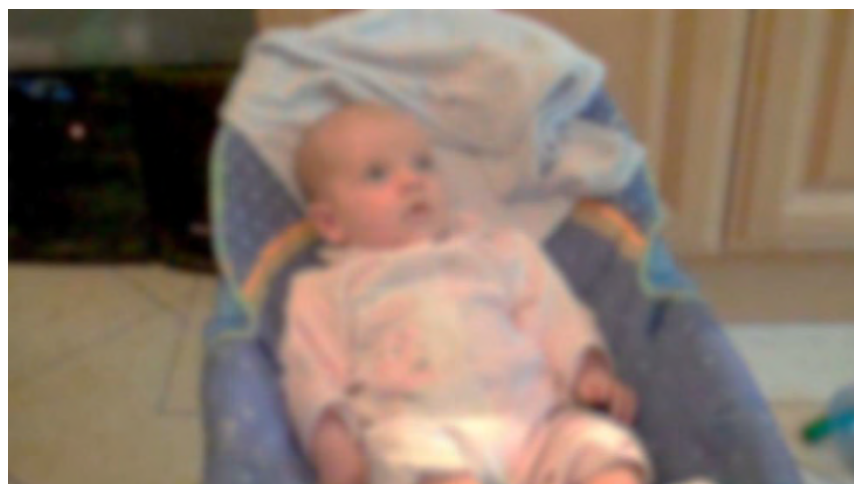


Figure 28: Sarah is supported in her baby bouncer in the middle of the kitchen, 'in the atmosphere of doing'.

BODY SPACE AND BODY PLAY (one to four months)

The Nature of Interactions

At two to three months of age, both babies moved noticeably away from **being** in the world to **doing**. Their visual attention was obvious, with a more focused intentional aspect to it. It was no longer a gaze but a focused looking and watching combined with head-turning towards a stimulus whether it was a person or object. Smiling was evident and used to gain attention, not just in response to it. Both babies were seen to move their mouths in response to their mothers' movements in speech, when it was directed to them. This appeared to be the first sign of imitation. It is purposeful as it is repeated following the mother's movements, and repeated again.

At three to four months, social interactions are markedly increasing in complexity and duration of interaction, with Sarah being able to take turns in vocalising with her mother. When her mother turned to talk to me she waited quietly, but took up vocalising again when her mother turned back towards her and they 'talked' to each other. Game playing in its earliest phases can now be seen as the baby can respond to songs and movements such as 'I'm going to get you', and shows anticipation of the hand coming close to tickle.

Movement is now more varied. Kicking two legs together is evident for the young babies in the study, though both hands did not seem to meet at midline. Playing in space at this stage is seen when the infants stretch or arch their bodies when sitting, with arms up and out as if to experience the space around them (Figure 29). The variety of physical interactions with the environment continues to increase. For example, Sarah showed efforts to pull herself up to sitting at four months rather than staying in a

reclined position in her baby bouncer. Her fingers and legs continued to move in rhythmical patterns similar to those described by Thelen (1979). At four months, Karen did not show the same intensity of movements and was still at a stage of looking at objects from her baby-gym on the floor, with early signs of pre-reaching.

Fingers are finding their way to the mouth also, and may stretch out when an object is held close though most interactions with objects involve a closed fist. A clear link was evident between an object being presented and movements of the forearm in response, in a circular type movement (four months). Piaget termed this developmental period as a stage of primary circular reaction (Piaget, 1962). Interactions with objects can therefore be characterised as being about connecting with objects held or suspended close to the hand, as the infants cannot yet reach, but can move their forearms when their body is supported. It is thought that through these movements of the body, infants are spontaneously exploring the biomechanical workings of their own bodies (Lobo & Galloway, 2008). However, movements seemed to be a response to the object, which would seem to suggest that they are an intentional act rather than spontaneous ones. These movements were seen when no object was present, but much less frequently and with less intensity.

By four months, infants were mouthing consistently, and grasping at bibs or cloths, which were placed near their hands (Figure 30). In this study, both mothers of newborns noted that their infants had discovered their hands. Maria commented that Karen can be seen '*looking at her hands, getting cross-eyed!*' (December 2009). For each baby, one hand moved separately from the other.

This phase can be described as being one that concerns **Body Space**, which relates to play that takes place on or with the body such as sucking on fingers or grasping at

objects placed on the body or close to the hand. It correlates with E. Gibson's phase one (1988) where infants focus on events visually and engage in mouthing primarily.

Space and place use: lying positions for play

By four months of age, babies still need much support in sitting, but head control has improved. Maria for example, just needed to support Karen by holding her trunk rather than also placing a hand at the back of her head while Karen sat on her lap. The environment affords early stages of interaction with objects in two main ways. One way is via provision of body support in a baby bouncer. Both Karen and Sarah were placed semi-reclined on a sloped baby-bouncer. This provided a supporting position of the whole body, which facilitated the babies to engage visually with objects and even to stretch fingers towards them if placed beside their hands. Both baby-bouncers had a flat enough surface to enable stretching out of legs and body to afford movement experiences also. Soft toys and materials were brought to the baby and shown to them before placing by their hands for play.

The second way interaction was facilitated was in lying supine: either in the cot or on the floor on a baby-gym mat. Both the cot and baby-gym had a mobile overhead, or a fitment that enabled the mother to attach dangling toys for play. In these places for lying, the babies had their arms supported in such a way that the forearm could move towards an object. Sarah was observed stretching her fingers to make the object move and showed pleasure at the movement through facial expression. However, during this activity she was not watching her hands but was watching the reaction in the objects that had been placed over the cot or on the baby-gym.

Object and toy use: early reaching play

Toys used to catch babies' attention consist of soft toys with highly colourful and contrasting colourings on their bodies. The toy that caught Sarah's attention most had black and yellow stripes and also played music when her mother activated it by pulling a string. It had legs with dangling feet that all added to the movement of the toy when it made contact with the baby's hand. Sarah's mother on noticing this began to use a fitment over the baby bouncer (an arched attachment that has clip-on toys for suspending over the baby). She hung the favoured toy within reach of the Sarah's hand. This enabled her infant to make contact with the toys near her hand. It has been noted in studies of this phase of play interactions that the infant is heavily reliant on parents' responsiveness in terms of making accommodations in the environment (Lobo & Galloway, 2008). This was evident in this study also.

The toy therefore afforded Sarah a reaching opportunity, which has been described as visually guided reaching or pre-reaching (Rochat, 1993). This toy had to be placed close to Sarah's hand, either by attaching to a fitment over her cot or to the baby-gym, in order for her to be able to interact with it (Figure 31). The ability to actively reach out is not evident. Previous studies have related this to the need to maintain balance while reaching (Rochat & Goubet, 1995). However, in this study the infants were well supported in sitting, so an alternative hypothesis might be that they have yet to develop the control required for effective reaching rather than being related to balance.

Play objects used by mothers at this stage are commercial toys that typically that afford a high degree of visual, auditory and tactile feedback when touched. Child development is significantly influenced by the presence of objects that involve variety, complexity and responsivity (Wachs, 1985). It is interesting that mothers tend to view the primary

source of these affordances in commercial toys. However, as the infant progresses, we will see that commercial toys are not what the infants choose for themselves when they become more mobile in their play. Table 9:3 summarises key features of this phase.

Table 9:3: A summary of phase two: Body space and body play

Time/phase	Nature of interactions with physical environment	Space and place use	Object and equipment use
Body Space stage: 2-4 months	<p>Early reaching (pre-reaching)</p> <p>Being in place</p>	<p>Body space: Use of space relates to supporting the body fully so as to facilitate movements of fore-arms and legs in kicking</p>	<p>Body play: while held in body space, interactions with the physical environment are primarily related to the body with attempts to connect with objects beginning to emerge. Objects that afforded reaching with forearm, grasping with fingers, swiping at toy in a random fashion were observed. Objects that elicited this affordance involved high levels of visual and auditory responsiveness, and had multiple parts that moved when hit.</p>

Body space and body play- examples:



Figure 29: Sarah playing with space as she explores with her body from the baby bouncer.



Figure 30: Body play: Karen plays with her fingers by mouthing them.



Figure 31: early reaching is evident when objects are held within reach of Sarah's forearm.

NEAR SPACE AND SITTING PLAY (four to eight months).

The Nature of Interactions

Object play is more apparent now. For the first time, objects are held independently with both hands that grasp and release as they move the object towards the mouth. Babies have soft cloths or bibs placed on their bodies close to their hands and use two hands to grasp and bring the cloth to their mouths. However, at five months, when Sarah's hand grasped at a leg of a soft toy dangling near her, she seemed to find it hard to release her hand, as if releasing objects was still a new emerging skill. Reaching and grasping are easier for babies at this stage than releasing. The ability to change movement strategies appears to emerge at this stage. For example, Sarah began to interact with a dangling toy by trying to pull it to her mouth as she did for the bib. When this did not work for her, she changed instead to another movement pattern and hit repeatedly at the toy to make it move and shake. She also used her feet to make contact with toys. Foot-object play emerges sooner than hand-object play in babies but is an aspect of object play that is often overlooked (Galloway & Thelen, 2004).

By six months, Sarah was showing more refined hand-to-mouth manipulation and was able to use both hands to manipulate a small crinkly object around so she could lick and suck on the smooth, silky label. Her mother noticed that she had a preference for silky surfaces as she also sought them out on her baby blanket. She was also observed to use her eyes more to look at the object, which may be an intrinsic part of this new stage of exploration. Using vision at this stage has been found to be related to visual inspection (Rochat, 1989). When a soft foot puppet was placed on her feet, she responded by moving her legs with more intensity and frequency to elicit the jingling sound that

happened when it shook. She also began to hit and push or pull at an exploratory toy to make it light up or play music. By seven months, Sarah could use both hands more efficiently and transfer objects from one to the other, in order to reach something else, or in order to enable one hand to hold an object while she pressed a button or felt the texture with the other hand. So during this phase, babies are moving from being able to grasp an object to being able to use both hands to support interaction with an object. They have advanced from simply mouthing to manipulation and exploration of objects (E. Gibson, 1988; Rochat, 1993). Infants can be observed interacting with objects using an increased repertoire of movements, including lifting, turning an object over, tapping it, dropping it and watching where it goes. They also show a specific interest in small and shiny items. For example, Sarah was observed to pull or poke at shiny buttons on her mother's shirt, while Karen did the same with the shiny strap on her mother's top. This development in manipulative skills towards differentiated use of fingers instead of whole hand use has been identified in other studies (Rochat, 1989).

Studies have shown that availability of objects is a significant factor influencing development before infants are nine months, but that this is no longer an issue after the infant becomes more mobile (Wachs & Gruen, 1982). In Karen's home few objects for play were observed compared to a more varied range of infant toys and objects available in Sarah's home. During visits, Karen was seen to play with a soft toy or with some small miniature toys belonging to her brother (Figure 32). Furthermore, Karen was not observed to have the same skills in her object play that Sarah demonstrated. Therefore, availability of objects may have influenced differences in hand-skills observed in this study. However, based on the evidence from other studies, although the

unavailability of objects for play may be a factor in Karen's skill development at this age, it may not be a long-term concern.

Play interactions during this phase are still within the immediate space where the infant is placed, so **near space** captures the space use that applies to this stage. **Near space** relates to play that is within arm reach usually when the baby is sitting in a baby seat or on the lap, and is handed an object to play with, or when the baby is lying under the baby gym with suspended objects. The baby is supported in sitting or placed lying on her back to enable this play to happen, as she does not yet have the body control to sit independently. Reaching that occurs is consequently within the near space around the infant. It equates with phase two of Gibson's outline which she relates to the stage from about the fifth month where an infant focuses attention to objects and the uses manual exploration of reaching and grasping primarily (E. Gibson, 1988).

Space and place use- sitting, static positions for play

At four to eight months, Karen was supported in her baby-bouncer in a reclined position and also in a soft car that supported her for floor play. She was observed reclining in it rather than having the ability as yet to stay more upright in sitting for play. In comparison, Sarah was now in a more upright baby bouncer that gave her more sitting support. She was able to sit up without support now at the back of her body, but relying on straps to keep her securely seated. This meant her arms were now more involved in object interactions and she showed more of a range of movement and skill in holding and releasing objects from one hand to the other. By six months Sarah was able to sit with some physical support from her mother and could reach forward towards an object placed there.

The infants appeared to be engaging in play interactions with space itself rather than with objects and appear to enjoy the sense of mastery of their body movements in the process (Figure 33). For example, floor play became more interactive as Sarah began to play with the space itself from a lying position and not just as a place for playing with objects placed over her. She was able now to flex up her legs and used the momentum to start a roll to the side and stretch her body so that she was almost on her front rather than on her back (going from supine to prone). Playing with space was also evident in Karen when she chose to throw herself back in her mother's arms as if to elicit play. Maria said she loved the sense of movement from being thrown up in the air, which is something they often used to do with her. She was observed at six months, throwing herself back while in her mother's arms and did this repeatedly. Her mother responded by facilitating her to throw her head and body back while supporting her, and then using the momentum to pull her back upright again.

Time spent playing from prone was only beginning to emerge from five months- both mothers did not like placing their infants in prone as the infants did not like it. Consequently, Maria did not choose this position for play, while Vicky placed Sarah for very short periods on her front so that she could get used to it (Figure 34). There seemed to be a general notion that it is not good for the baby. As we have noted in Chapter Three, evidence has shown that avoiding the prone position results in delays in movement at four months (Liao et al., 2005). It is likely therefore that these infants are experiencing a different trajectory for the development of creeping and crawling based on their lack of early experiences in prone.

By seven months, Vicky began to use a baby-stander. This piece of equipment seems well suited to this specific stage of development as it facilitates supported movement

and object interaction. It had a tray around her at elbow height, which enabled her to play with objects in this near space. Sarah was able to turn about in it to watch what her brother was doing more easily than if she was in the baby bouncer or on the floor. He in turn was able to note when she dropped a toy and readily picked it up and handed it to her. Studies of infants' behaviours and locomoting have shown that there is a change in social exchanges when the infant is upright and able to visually catch adult's attention more easily (Gustafson, 1984). It is likely that these behavioural changes equally apply to siblings.

Object and toy use- reaching and grasping play

Objects that were hand-sized and soft so that both hands can grasp them more easily were the objects that afforded play interaction opportunities mostly for both infants. For example, Karen's bib had a crinkly bright surface that afforded mouthing, grasping and releasing without it falling out of reach, with a flexible surface that perhaps affords a better grasp than a hard surface might.

By six months, the objects that afforded play interactions included more commercial type exploratory toys that lit up when hit, so there was an emerging move towards cause- effect toys (Sarah). As their manipulation skills improved, infants showed their ability to grasp and manipulate a greater range of objects including plastic, hard items but due to their small hand size, weight and size is a factor in how successful these interactions are. As the infants progressed through this phase they moved from reaching and grasping primarily, to being able to **release** also with more ease and precision.

By seven months, Sarah began to master more varied physical movements and was actively reaching for objects from floor sitting that were beyond her reach. She could

bend forwards and stretch to reach an item, or from prone could extend her forearms and begin to move her body sideways towards an item. She was already going from near space to being able to interact with **middle space**. Table 9:4 summarises key features of this phase.

Table 9:4: A summary of phase three: Near Space and sitting play

Time/phase	Nature of interactions with physical environment	Space and place use	Object and equipment use
Near Space stage: 4- 7 months	<p>Reaching and grasping Early releasing. Two handed patterns of grasping objects at the same time.</p> <p>Doing in place.</p>	<p>Near space: Early sitting- using supported seats that afford some independent sitting rather than being reclined. Use of mother as support for floor sitting. Use of baby stander for a change in position.</p> <p>Playing with space:</p> <ul style="list-style-type: none"> • Floor space to afford playing with space while lying on floor. • Body space-throwing the body back to experience the sense of movement. 	<p>Object- body play: objects that afforded grasping and pulling towards the mouth. Needing to be soft and malleable to enable effective grasping and manipulation. Objects that afforded movement when hit. Object that rattled when moved by her foot (a foot rattle). Objects needed to be ones:</p> <ul style="list-style-type: none"> • That did not roll away or fall but stayed close to the infant in near space. • That were light enough to manipulate. • Soft enough to hold and grasp effectively. • That can be mouthed.

Near space and sitting play-examples:



Figure 32: Karen demonstrates sitting play, as orchestrated by her mother: playing with her favourite toy.



Figure 33: Exploring Near Space as Sarah tries to reach beyond her baby bouncer, while Karen throws her body backwards while held safely.



Figure 34: Floor space affords exploration of space, while sitting play affords opportunities to reach and grasp objects, or shake them with a foot.

MIDDLE SPACE AND REACHING PLAY (eight to 12 months).

The Nature of Interactions

This phase can be seen to emerge when the babies began to reach beyond their immediate 'near' space, and are moving into **middle space**. Middle space is where the baby can now reach and uses his or her own control and motivation to actively reach for objects within view but not nearby. In order to be able to interact in middle space, infants are developing more advanced movement skills that enable them to independently reach objects. This may involve the shifting circles of movement in prone that were observed in Sarah at seven months, described by Pierce (1996) in her study of infant space theory. This is where the infant is able to move while prone by the use of circling movements to shift along the floor, which comes before crawling. In Pierce's study, infants were achieving this at about three or four months and seemed to have experienced prone lying or 'tummy time' play more than the infants in this study. It may be that what I am observing is the consequence of avoiding the prone position due to the trend to avoid it that has been noted in many studies (Adolf et al., 2010).

By nine months, both infants could reach places and objects that would have been out of reach before. Karen explored middle space through the use of a baby walker, which she learned to master. She could push the walker over towards the shelf where there are pictures or into the kitchen to reach the cooker controls. Moreover, she was seen to interact more frequently with her brother who played alongside her on his ride along car chasing her or pushing her. Karen was gradually gaining control of her movements during this phase and was almost able to sit at 10 months without falling to the side, and by 12 months, although she still had not begun to crawl efficiently, she was cruising

along furniture and climbing up into standing by holding on to furniture or to her mother.

In comparison, at nine months Sarah was now crawling and by twelve months, she was able to walk with a Push along trolley toy for support. She is observed for example crawling under the table to get an object or crawling towards her mother to be picked up. Hence, we can see that mobility results in play that is characterised by changes in social as well as physical behaviours, whereby the infants are observed moving towards people and are motivated to seek social interaction (Gustafson, 1984; Karasik et al., 2011).

There is also a change in object preferences and use. Both infants sought out typical objects in the home that afforded varied exploratory experiences, although Karen was restricted from her baby-walker compared to Sarah, who has more immediate access to a full array of things in the environment. This type of play with usual objects has been described as heuristic play and is an approach to play that emphasises the value of playing with non-commercial objects (Goldschmied & Jackson, 1994). Research has identified that infant play involves physical objects more than commercial toys specially in infants under 18 months (D. Pierce, 2000).

Objects are used differently. Both infants for example, were seen to bang hard objects repeatedly, in response it seems to the noise that was elicited. In comparison, soft toys were passed from hand to hand more or squeezed or put in the mouth. So it appears that the infants are distinguishing objects from each other by knowing what affordances they can give. Alternatively, it may be that they are able to respond adaptively to the responses that can be elicited in play. Studies have shown that infants are capable of making such distinctions in object affordances from 10 months (Bourgeois et al., 2005).

The nature of interactions are therefore characterised by much more whole body movement in middle space, alongside a more focused approach to object play. It correlates with phase three of E. Gibson's outline (1988), where she describes this phase as being one when exploration expands to the broader spaces in the home as the baby begins to move beyond objects and into spaces.

Space and place use- moving positions in play

Both infants were now beginning to be able to stand when held and could hold their bodies upright in space. For Karen, standing at the window was part of her social interactions with her brother and sister. She was frequently put standing on an armchair where she could look out the window into the garden where they used often play. So although she was not able yet to play with them, she was now big enough and strong enough to stand at this place in the family home, with her mother's support and in that way still was a part of the family play events. This demonstrates how indoor and outdoor connectedness is facilitated in the home (Kernan, 2010).

A high chair was introduced in Sarah's home as she had grown out of the baby bouncer. This meant she was also able to join in more easily in family meals, as she was able to sit at the table instead of being on a lap or in a baby bouncer on the floor. In comparison, for Karen a buggy was used which enabled the family to move her around the kitchen when necessary but also to sit close to the table at meal times (Figure 35).

At eight months, Sarah could sit on the floor without any support needed at her back, while Karen still needed support. Both babies showed a motivation for movement that meant sitting on a baby bouncer, chair or on mother's lap was not the place of choice: both need spaces and places that afforded more movement opportunities. Along with

this goes a need for safety and removal of objects and materials that come within reach of the newly mobile infant. Consequently, by nine months, Karen was being placed in a baby walker rather than being placed on the floor to play, which is how Maria met the infant's emerging need for movement but in a safe way (Figure 36). This was one of the forms of licences for movement observed in the families, which as we saw in Chapter Three, refers the gate-keeping role parents play in allowing a child access the environment (Tranter & Pawson, 2001).

Play interactions included more throwing and retrieving of objects as if expanding on the playing with space theme from the previous section. Moving into middle space for Karen was observed at 11 months when she spent extended time throwing an object while sitting on the floor. Then she extended her body as much as possible to reach it. When she retrieved the object, instead of playing with it, she threw it again and repeated the game of trying to get it (Figure 37). So her play seems more about engaging with the space around her than with the end product of getting the object. Her object play is now being combined with her extending ability to play with space

Object and toy use- grasp and release

By nine months, Sarah can be observed pulling out objects from a box. Now that she is crawling, her mother places objects near her so she can play in the kitchen- a large box of plastic beakers and lunch boxes. She can now hold a box while pulling out objects with her other hand. Furthermore, she is observed to hold one object and bang it with another, which is termed relational use of objects (Belsky & Most, 1981). Her skills seem to be developing into the early stages of hold-and-do patterns where one hand steadies an object in order for the other hand to carry out a task. These patterns of interrelated hand movements underpin effective manipulation skills that will be critical

for acquisition of tool work such as handwriting. They have also been identified as a key aspect in the development of object play while sitting (Soska et al., 2010).

Hard objects are seen to be popular as well as the soft toys. Sarah liked to take hard, plastic small hand-sized objects for biting on, for banging on the floor and hitting on other objects as this seems to give a response in terms of noise that appeals to her (Figure 36). Sarah was observed to prefer playing with objects for manipulation, and was not reliant on objects that had inbuilt responses such as those found in commercial exploratory toys. However, by 11 months, she began to enjoy more those toys that are more responsive such as a toy piano with keys that lit up when pressed as well as making sounds, and a ball tower that involved placing a ball in the top hole and watching it progress to the bottom. Both are ‘cause-effect’ toys with trial and error to get the desired response.

In comparison, Karen plays with the similar soft toys from earlier phases and does not seem to have the same variety or stimulation in the objects available to her. Although she has soft toys that also vibrate or make noises when shaken, they are only briefly interesting to her and she does not show sustained play with them like Sarah does in her object play. However, Karen along with Sarah was observed to be developing other skills in manipulation nonetheless: intentional release of objects. Karen (11 months) is seen playing ‘Tata’ with her brother and sister who enjoyed playing with her in this game. They gave her a small ball to hold as she moved about in her walker then Tadgh would say Tata and hold out his hand and Karen would hand the ball to him, and wait to get it back (Figure 36). Sarah similarly played a game involving object release, when she rolled a large beach ball to her mother on the kitchen floor and waited for her to roll

it back. So for both infants, this new skill seems to afford more social play interactions and early turn taking as we have seen in both families.

This new skill was not only related to social play. For example, Sarah, at 10 months played with an upturned bucket that afforded her the opportunity to bend down and pick up small objects that she then placed on top of the bucket surface. She then grasped the object and bent down again and placed it carefully back on the ground. Placing objects is now as prevalent as taking objects out of boxes, which was Sarah’s preference the previous month. Table 9:5 summarises key features of this phase.

Table 9:5: A summary of phase four: Middle Space and reaching play

Time/phase	Nature of interactions with physical environment	Space and place use	Object and equipment use
Middle space: 8-12 months	<p>Intentional Releasing leading to turn taking games Use of more toys that involve putting things in- posting toys</p> <p>Doing and moving in place</p> <p>Sitting, kneeling, rolling, crawling to play</p>	<p>Middle space: Sitting independently sitting and moving go together- once the infant can sit independently, they are already trying to move beyond their near space into middle space.</p> <p>Need for places and spaces that safely affords both.</p> <p>Floor-play Cupboard play</p> <p>High chair and cot for care and comfort routines, as the babies grow out of their other places of support.</p>	<p>Object play: Objects that afford variety in sensory-motor interaction:</p> <ul style="list-style-type: none"> • Variety of texture. • Variety of sounds when hit or shaken. • Variety in shape and size for different holding and grasping. • Hand sized – the whole object or part of the object to facilitate holding. • Variety in weight but not so as to prevent holding.

Middle space and reaching play- examples:

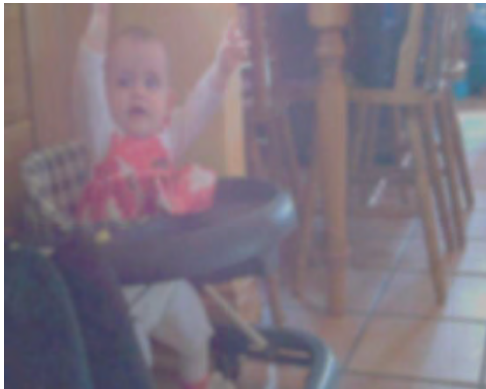


Figure 35: New places that afford movement in a safe way: baby-walker for floor play and high-chair for family mealtime routines.



Figure 36: Intentional releasing in object play results in new games: Karen hands objects to her brother while Sarah manipulates varied objects in new ways.

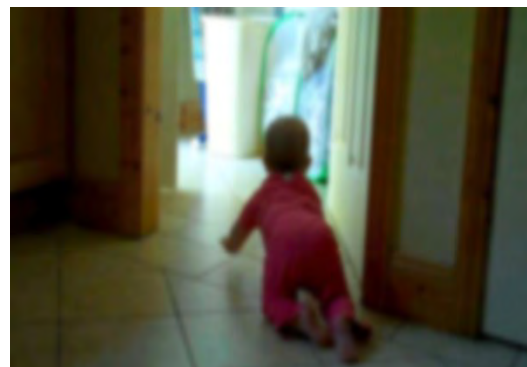


Figure 37: Playing in space from sitting: Here Karen throws and reaches repeatedly, while Sarah begins to crawl.

HOME SPACE AND EXPLORING SPACE (12 to 18 months)

In this one-year study, three toddlers began participating when they were one year old, so the data that informs the next part of analysis comes from visits with Joe, Amy and Hannah and their families.

The Nature of Interactions: infants researching their worlds

This phase can be seen to emerge when the infant has achieved mastery to some extent in movement and so by about 12 months we see that the infants have begun to be independently mobile and now can interact not just with discrete spaces but in the entire home environment. **Home space** relates to this phase where the infant has mastered movement into the environment and is now combining movement in space with object play. From 12 to 18 months, the emphasis seems to be more on testing the world out, on researching and experimenting, while in the later stage from 18 to 24 months, the infant can be seen to be reaching an advanced stage of infancy.

At twelve months of age, two of the infants are still crawling like Karen (Joe and Amy), while Hannah has been walking for a few weeks by now. Amy and Hannah are both the only child in the home, while Joe is the second child. Interestingly, he is seen to spend time consistently watching his older brother play as if to learn by observation (Figure 38). Rogoff et al identified this as a key aspect to how infants learn (Rogoff et al., 1993) with the observers being characterised as peripheral participants in play (Lave & Wenger, 1991).

Play interactions between spaces and objects can now be considered increasingly to reflect the infants' choices and what is meaningful for them. This has been identified in other studies where infants are seen to play with objects of their own choosing when

their mobility increases (Karasik et al., 2011). To date, much of their choices for where they played and what they played with, was determined by the carer. Now that they are beginning to move more independently, preferred use of space can be observed. For all three infants, preference seems to be related to where the parent is rather than the objects for play. Particularly in Joe's case, his playroom was his preferred place to play but only as long as his mother sat with him there. When she needed to be elsewhere in the house, he brought his toys with him out of the playroom so he could play near her. This spatial tie to carers has been noted in other studies also (Giddings & Halverson, 1981; D. Pierce, 2000).

All the infants used gestures at 13 months to point to what they wanted or needed and now that they were more mobile, brought objects to show mothers as noted in other studies (Karasik et al., 2011). This sharing of objects in social interaction is observed by the infant giving the object or seeking it from the mother by using gestures (such as pointing or showing) (Carpenter, Nagell, Tomasello, Butterworth, & Moore, 1998) which was well developed in these infants by 14 months. During this phase, communication abilities were significantly progressing resulting in an increased ability to ask for things and also influencing play. For example, Clare talked of seeing how mischievous Hannah was becoming now she was developing her communication skills (15 months).

The role of carrying objects in relation to the development of walking is an ongoing debate in research (Karasik et al., 2011). It has been argued that walking may be driven by the need to carry objects place to place (E. Gibson, 1988). However, although Amy was not yet walking, she enjoyed carrying toys with her as she crawled. Studies of infants' use of objects in social exchanges have also shown that at 11 months, sharing of

object with mothers increases for all infants irrespective of whether they are walking (Karasik et al., 2011). So it seems that the link with walking and object sharing is not well supported empirically.

For these infants, objects were carried for different reasons. For example, Joe brought a burst balloon in his hand and liked to mouth it as he walked, or on another occasion he brought a small wooden animal with him with no apparent function in mind other than to carry it. Meanwhile, Amy liked to 'go for a walk' with a toy horse on wheels (14 months), which she pushed along the floor as she crawled around the kitchen. Studies of object activity at 13 months have shown that infants have increased their transportation of objects from place to place by over 500% if they are walking and 200% if crawling (Karasik et al., 2011).

During this phase, toy-boxes became more prevalent now the infants could use home spaces more independently. Before, toys were brought to the infants when sitting or on the floor playing. But now that they could move themselves, toy boxes were seen to be a centre of the play interactions, except in Joe's home where he had the use of a playroom.

Space and place use- variety in play places and spaces

The home spaces can now be observed to see where the infants choose to play. Furthermore, playing with space is particularly evident with infants bringing objects from place to place now they can move more easily. Joe for example used the whole room for play and crawled from place to place rather than settling in one spot, including playing on the couch, and under the table and on the table in the playroom. So he seemed to like to move as part of his play. In comparison, Amy preferred to play on the

play-mat with toys and objects. Playing in space for her involved exploring enclosed spaces (such as under the highchair) or including social play with her mother. She crawled around the kitchen butchers block and then would peek around the corner playing peek-a-boo.

Spaces were explored by the infants but also at thirteen months, they still needed help as both Joe and Amy would get stuck in narrow spaces such as between large toys in the toy room (Joe) or under a kitchen chair (Hannah) (Figure 38). This was a similar finding in Pierce's study (Pierce, 1996). However, by sixteen months all were able space negotiators. Indeed, Joe began to engage and persist in a high level of physical play that continued throughout the year. This was particularly prevalent when his brother was present showing the interactive nature of this kind of play. This was in marked contrast to the other infants who persisted more with object play than space play throughout the year. Gender differences like this have been noted in other studies also in relation to physical play preferences in boys (Pellegrini & Smith, 1998).

Places to play changed in nature to include places to stand and play, as well as sit and play. For example, both Amy and Hannah chose to play at low coffee tables in both their homes, and liked to stand at them and reach for toys spread out on them. They also sought to climb up on such surfaces to play there. So their freedom of movement showed that they liked to try out different sites for play. Hannah was seen to do this also when she played with her Lego™ at the stairs. At 13 months, she played with Lego™ in the front room and brought pieces one by one out to the hall where she played on the stairs, combining the Lego™ pieces together. She could easily have made the Lego™ in the front room, but choose to combine space use with object play by incorporating two locations in her play. This play pattern was also observed in Amy's play at 14 months

when she climbed onto the coffee table to play rather than stand at it. The environment seems to be affording interesting options for play when it is not just the floor or table, but has different platforms or levels for playing on (Figure 39).

However, it does not just relate to spaces for play. There seems to be something important about combining object transportation, space use and mobility. As I observed Hannah at play on the stairs, I wondered about the meaning of this new dimension of play for all the infants and her play seemed to illuminate this in a new way. Perhaps what we are observing is the processes of expanded play when new skills are incorporated into play schemes: that now infants' play by combining their new spatial abilities along with the existing object play, resulting in multi-site play events. It seems as if what we may be observing is spatial mastery in object play. Transportation as a play pattern has been observed in other studies (Athey, 1990)¹²⁷ and in Pierce's Infant Space theory study, (D. Pierce, 1996), which identified mobile object play as a new finding. However, within that concept, the varied use of different levels and platforms for play was not highlighted. This finding serves to expand on Pierce's work and enriches our understanding of the characteristics of mobile-object play.

Object and toy use- making things work

Play interaction with objects seemed to be similar for all the infants at twelve months irrespective of their different levels of mobility. They focused on objects for releasing into or on, such as a lunch box for putting in blocks (Hannah) or toys such as a ring sorter on which rings have to be 'released' (Amy). Even stacking cups were used for putting one into another rather than for stacking as yet (Hannah). Meanwhile, Joe was

¹²⁷ Athey proposed that play can be characterised as involving different schemas, such as transporting, rotation, trajectory etc. This is an example of transportation.

observed to seek out toys that had moving parts that open and close. All three were observed to enjoy opening and closing things over the first few months of this phase (Figure 40).

Play with objects was increasing in complexity with Hannah at thirteen months being able to combine Lego™ pieces, and press buttons on an electronic book to make the voice repeat nursery rhymes for her. During the first few months of this phase, all the infants were seen to have mastered using their index finger to press buttons on toys that then lit up or play music consequently.

There seems to be a theme of figuring out how things work, with Hannah wanting to press buttons on a toy that makes the car shoot out, or Joe turning on and off the lights or switches on the washing machine (fourteen months). This seemed more advanced than just cause and effect, with more focus on how things combine together in different ways as part of this exploration. This was found to be typical of this stage of experimentation (Munier et al., 2008).

Given the infants newly found freedom to explore and choose play objects, there was now a significant increase in the range and variety of play objects chosen. For Joe, this variety seemed to result in a constant flitting about from object to object, rather than having a favourite. He enjoyed opening and closing doors or lids on toys: putting cars inside a transporter and closing the door behind it, putting things in the washing machine and closing the door also. In comparison, both Hannah and Amy enjoyed interactions with natural objects based on their functional use (functional play stage, Belsky & Most, 1981). Both at thirteen to fifteen months were seen putting on and off clothes or necklaces, with Amy having a range of hats to place on her mother's head as well as her own, while Hannah helped place clothes to dry on the heater at home, and at

the same time put them over her head as she played. Furthermore, both girls played with real items such as the remote control for the TV (Amy) or her mother's purse and credit cards (Hannah). Both mothers commented that despite the fact they gave alternatives to their infants, the real item was preferred. So non-commercial object play is still a common form of play rather than play with commercial toys for these infants, and moreover, these objects now had a specific functional meaning which was important in their play preferences.

Books were very important to both girls in this phase. Every month there was evidence of playing with books, with the emphasis on turning pages and pointing to pictures. Initially this seemed to be related to nursery rhymes and pictures primarily, which progresses onto rhyming stories such as Hooray for Fish (Hannah) at fifteen months. Joe's interest in books was fleeting at this stage even though he had books present in his environment. He also had frequent story time at night going to bed so he was exposed to books but did not choose them in his play at this stage. Hence, play preferences continue to be evident as they may relate to gender, stage of development or individual motivation for engagement.

Crayons and Magna Doodle™ were common play activities in both girls' homes at thirteen months onwards, which shows the move from hand-object play to actual use of tools. This can be seen across their other occupations such as feeding where both girls were able to use a spoon to eat yoghurt for example at fifteen months whereas Joe is still needing to be fed at seventeen months. However, this feeding routines was due to her concerns that he could not stay at the table long enough to finish his meal, and so she preferred to feed him instead.

Table 9:6 summarises key features of this phase.

Table 9:6: A summary of phase five: Home Space and exploring play

Time/phase	Nature of interactions with physical environment	Space and place use	Object and equipment use
Home space: 12-18 months	<p>Combining movement and object play</p> <p>Moving out of place and into space.</p> <p>Using varied movement patterns such as sitting, squatting, standing.</p>	<p>Space-object play:</p> <p>Space play as well as floor play.</p> <p>Spaces and objects are combined in play, so spaces need to afford different play sites in different locations to combine to form different play patterns:</p> <ul style="list-style-type: none"> • Platforms such as steps or low, wide tables. • Coffee tables or foot stools to stand at. <p>Places where infants can move about bringing objects from site to site:</p> <ul style="list-style-type: none"> • Inter-room play. 	<p>Space-object play</p> <p>Objects that afford combining with other objects/ putting together/ opening and closing:</p> <ul style="list-style-type: none"> • Construction toys such as Lego and building bricks. • Posting boxes, stacking rings. • Different size containers, boxes and lids. <p>Objects that afford play for their intended function:</p> <ul style="list-style-type: none"> • Remote controls, mobile phones, purses and money. <p>Cause and effect toys, e.g.:</p> <ul style="list-style-type: none"> • Buttons to press to activate stories or rhymes. • Cash registers.

Home space and exploring space play-examples:



Figure 38: Using the larger spaces of the home: to watch from a distance and to explore.

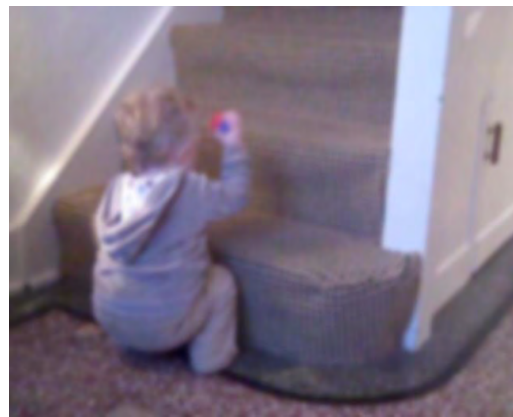


Figure 39: Space-object play: object play is combined with space play



Figure 40: Object play involves putting together, opening and closing things.

HOME SPACE: advanced infant play (18 to 24 months)

The Nature of Interactions- becoming experts in infant play

From 18 to 24 months the infants are evolving into an advanced stage of space and object play. This coincided for my study with the seasonal changes also. We were now approaching April and the weather was becoming warm and consequently, infants experienced more time outdoors as well as indoors, so their scope for space-play increased. Play now included sand-play and water-play outdoors (Hannah, Joe and Amy), along with climbing, swinging and trampolining (Joe), digging to plant things and collecting eggs from nana's hens (Amy), picking strawberries in nana's garden (Hannah), along with more frequent walks and day trips to animal parks and playgrounds. Hence, we can see compared to last year, these infants could now walk and engage differently with their outdoor environments, by being actively engaged in family interactions occurring there (Figure 41).

Instead of just using objects for their physical affordances, Hannah began to realise the intended affordances of objects also and showed signs of **pretend play** with a doll and blanket. For two months, she engaged intensively in play with a baby doll and blanket by constantly unwrapping and wrapping the doll up in the blanket, and then using the baby buggy also to extend her play. This relates to the 'pretend other' phase identified by Belsky and Most (1981). Her other play preferences continued to include washing, wiping and sorting pans and lids in cupboards, which was also a constant feature of Amy's play. So, both appear to be engaging in varied forms of functional/relational pretend play. By 21 months, both Amy and Hannah began to play with tea sets and regularly engaged in tea making in their play, making tea for play partners or for teddies

and dolls. Amy at 23 months extended her pretend play into play scenarios where she prepared to go shopping and gathered the relevant objects (money, purse, bags, and list) and headed off down the hall to play at shopping (Figure 42). This demonstrates her ability now to engage in planned symbolic sequences (Daunhauer et al., 2010; McCune, 1995).

The infants were also beginning to know more about themselves with new skills emerging such as being able to point to their body parts (Joe) or recognising themselves in the mirror being noted (Amy at 18 months). At 20 months Hannah also pointed at things and named them as they pass by when she is out cycling with her mother. She was beginning to know the rules for hide and seek and turn taking, while her cousins tried to teach her turn taking in a game of chasing (21 months), which she could not yet master.

Both Hannah and Amy enjoyed stories where they can complete the endings and by 24 months, books were now favourites because of the stories within them rather than just for pictures although Joe still preferred activity books that had buttons to press and pictures to look at (Figure 43).

Space and place use

These infants have moved quickly from walking to running and consequently use space to rush through in terms of space play. Even Amy, who did not walk until she was 18 months old, began to run as soon as she could walk (April 2010) and was playing chasing with her dad by 20 months. Their play in playgrounds and outdoors at home highlighted that space play was highly related to the physical exercise play category described by Pellegrini and Smith (1998), where the play is characterised by a desire for

movement experiences. Joe in particular sought out high-energy play and his preferred activity during this time was on the trampoline, where he played daily when possible. So, now space play involved fast movements such as running, or swinging, or jumping or sliding, using equipment that afforded such movements, such as swings, slides, slopes and trampolines.

Mothers spoke of how the infants loved places to peek through such as tunnels (Amy) or hiding behind the shed (Joe), or a private space such as inside her tent (Amy). Amy's parents bought her a tent and a mini trampoline for use in the house to facilitate her play (23 months). However, when Joe had to play indoors, his mother recognised his need for space and allowed him to climb on the windowsills and furniture in the playroom, which he sought to do frequently. This is another example of licences parents give their children to engage in the environment (Tranter & Pawson, 2001). He knew this was not allowed in the rest of the house and sought the playroom when he wanted to play in this way. In this way for Joe, the playroom provides a play space primarily rather than somewhere to play with toys.

All of the infants moved away from using a highchair by the time they reached 23 months and instead sat to the table either by kneeling on the family chairs, or sitting on a booster seat to raise their height up. Cots were still in use in all the families at 18 months but by 24 months, Hannah had moved into a bed to make way for her new baby brother who needed the cot, while Joe still needed cot sides to try and discourage him from leaving his bed when he woke up. Stair gates were still in place in each home.

By the time they reach 22-24 months all mothers reported that their infants had a sense of place now that includes the greater community environment. Each child by this time could spontaneously point in the direction of nana's house or another important place in

their lives as they are driven past. They seemed to have developed spatial thinking in relation to large-scale spaces that may be related to the meaning of those places for the infants (Gauvain, 1993).

Object and toy use

Variety continued to be a very important aspect in relation to object play. Objects for expanded indoor and outdoor play included the presence of things that afforded scooping, pouring and carrying, such as buckets and spades for sand and water play. Joe at 20 months used the large floor mop and bucket instead of the toys ones in his efforts to play with water outside. When she was 22 months old, Hannah moved with her mother to the Netherlands to be with her dad and the issue of having variety and in particular, availability of toys becomes more apparent. Clare was unable to bring all of Hannah's toys and found that Hannah got restless with the few toys that she did have. Hannah was given three 25-piece insert boards to play with and had learned to sort them within days. Her mother realised that she needed more challenging and varied things to play with and also was missing her play partners in both the crèche at home and her cousins. She found it difficult to keep her daughter stimulated consequently.

In contrast, at 18 months, Joe did not engage much in construction play in terms of putting things together but instead seemed to enjoy pulling things apart. It may be that he had not yet developed the same mastery of objects as the others. Studies have found mastery and competence to be linked as coexisting factors at any developmental stage (Yarrow et al., 1983) and that infants are most motivated by moderately challenging tasks rather than highly challenging ones (Keilty & Freund, 2004). Joe seemed to be motivated by the easier task of pulling things apart, or exploring things through deconstruction rather than construction. He was also more motivated by physical

activity than construction play. This gender difference has been identified in studies of play as we have seen (Pellegrini & Smith, 1998).

Objects for play became more complex. Infants were observed putting together stacking cups at 18 months (Amy and Hannah). Different combinations of objects emerged. Now that Amy could combine nesting figures (Russian doll) with help from her mother, she hid her little teddy inside while she put the increasingly larger pieces together, and then took them apart to find him again (19 months). By 21 months, the use of insert boards became more common in all the infants play, even for Joe (Figure 44). Equally, the emergence of the ability to insert three-dimensional shapes was observed, although Amy had trouble physically placing these objects in their correct place. She instead pointed to the place they should go and gestured to her mother to help. By 22 months, Hannah could complete three insert boards at once, each with 25 pieces. At the end of this stage, Hannah found fun in putting shapes and pieces into the wrong slot and waiting for someone to notice. She has mastered it! Drawing and colouring was also more prevalent and a favoured activity for all three infants by 24 months.

Miniatures became more popular for play and included small cars, animals, and people. They were used across all activities including mealtimes, where for example, Joe was seen to feed his little elephant some lunch as he eats it himself (23 months). Hannah was observed making up stories as she played with Lego™, forming rooms and places with people who inhabit them (23 months). Furthermore, Amy named her teddy as a person rather than just being teddy. Large items were also used in story play with Amy having a large empty cardboard box to play in as her new 'tent' with teddies and dolls (24 months). So we can now see infants engage in pretend play with substitution and sequences (Belsky & Most, 1981).

Table 9:7 summarises key features of this phase.

Table 9:7: A summary of phase six: Home Space and expert infant play

Time/phase	Nature of interactions with physical environment	Space and place use	Object and equipment use
Home space: Expert infant play.	<p>Mastering movement and object play Engaging in more varied combinations of movement and object play.</p> <p>Sitting down at a table for object play more frequently.</p>	<p>Space play indoors and outdoors:</p> <ul style="list-style-type: none"> • Places to afford fast running, climbing, riding. • Places for high-intensity movement such as trampolines, swings. • Places for developing social games such as chasing. • Places for expanding pretend play activity-hiding places, private places, small places (e.g. tent). • Whole house play. 	<p>Object-space play: Object play seems now to be more centred in one place, rather than being driven by a need to use multiple locations:</p> <ul style="list-style-type: none"> • More complex objects for construction, tool-use, multipart activities. • Objects for pretend play such including large boxes, old clothes, materials for household tasks. • Objects for sharing or turn-taking such as balls, cars, play-doh, crayons.

Home space and advanced infant play: becoming experts



Figure 41: Amy, Joe and Hannah demonstrate more advanced physical play in running, chasing and climbing.

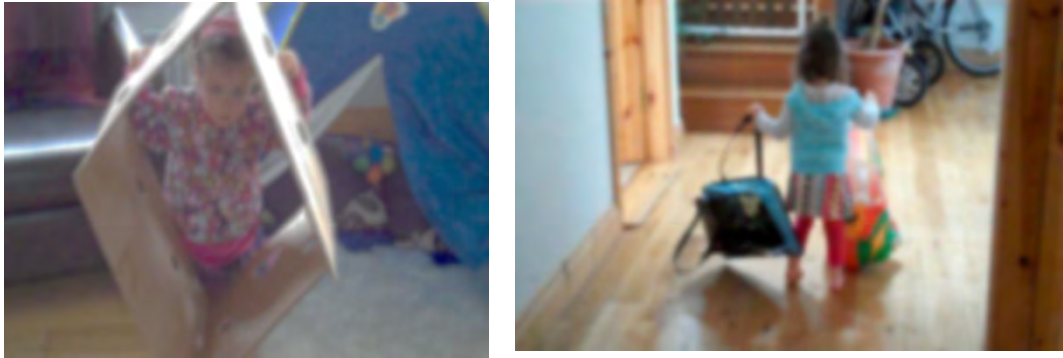


Figure 42 Infant space play continues to incorporate objects now used more for pretend play such as house building and shopping.

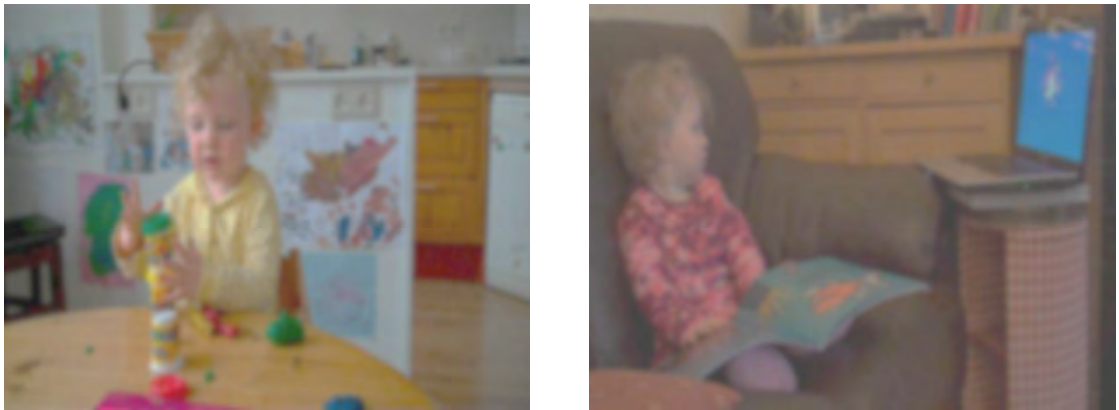


Figure 43: More complex object use is apparent, with books becoming important for stories and objects being used for multiple purposes.



Figure 44: Object play for Joe becomes more about construction, with a sense of mastery. Here he is saying: 'I did it!' when he fits a jigsaw piece successfully.

Summary

Through detailed analysis of infant play, a developmental sequence of transactions between infants and their physical environment has been outlined:

- Phase 1: Being in space- a pre-occupational phase
- Phase 2: Body space and body play
- Phase 3: Near space and sitting play
- Phase 4: Middle space and reaching play
- Phase 5: Home space and exploring play
- Phase 6: Home space and advanced infant play

Analyses in other studies have identified similar phases thus confirming the generalisability of this work (e.g. Blanche & Parham, 2001). However, other studies have not focused specifically on infants under two to date.

This overview of sequential phases of infant space and object play is characterised by variety and individuality but within some common processes also. Despite individual differences in gender, motivation and context, each infant comes to the end of the year having learned skills that are more similar than different when comparing them, thus supporting the view that there are multiple developmental pathways. The study highlighted interrelationship between object and space use, thus confirming that both contribute and influence infant play simultaneously and need to be considered conjointly in any analysis of play environments. Table 9:8 summarises this process.

Table 9: 8 Mapping infant space and object play

Infant Play: characteristics of play with the physical environment			
Stationary play		Mobile play	
Body space	Near space	Middle space	Home space
Body play ▶ sitting play ▶ floor play ▶ reaching & crawling play ▶ platform play ▶ walking play			
Objects brought into the infant's space		Infants move into the objects' space	
Baby toys/soft toys ▶ objects in the home ▶ sharing toys ▶ 'learning' toys & pretend play			

AFFORDANCES OF THE PHYSICAL ENVIRONMENT

Having mapped the play interactions in this way for the five infants, we can now develop an affordance taxonomy more specifically to look at the functional characteristics of object and space use during each phase. Existing studies of affordance categories (Heft, 1988; Kytta, 2003) were reviewed to guide this work and were found to diverge from the present study. Firstly, neither Kytta (2003) nor Heft (1988) separated out spaces from objects. Secondly, their taxonomy of affordances was not applied to the indoor environments but concentrated on the outdoors. Thirdly, both studies presented affordances as stable in that there was no specific analysis of affordances as they relate to children of different ages. The purpose of their studies however, was not to study the roles of space, indoor environments or developmental change. Fourthly, Kytta added another affordance for socialisation from her research of children in middle childhood, which seems at odds with the physical categories in existence already. These points will now be addressed.

For the purposes of this study, it seemed important to analyse affordances of objects separately to physical spaces in order to explore both independently as well as conjointly. Consequently, equipment was included in the physical space analysis, while objects were considered to relate to play materials. It was important to do this at different phases across the 24 months relevant to the study in order to ascertain if there are any differences in affordances for different age groups. Furthermore, although Kytta identified social affordances as a sub-category of physical affordances, I contend that this instead fits better as a characteristic of affordances that relates to environmental qualities in its own right (see example, table 9:9 below).

Both Heft and Kytta used an approach to developing categories that serve as a guideline. Affordances can be identified based on functional significance of environmental features (Heft, 1988). Each category is based on qualities of the environment that facilitate ‘*discovery of certain affordances*’ (Kytta, 2003, p. 62) and each category contains at least two affordances. Table 9:9 presents an example of the analysis of object and space-use during the Body Space phase in this study, with adaptations to Kytta’s and Heft’s guidelines. Spaces have been analysed separately to objects, and both object and space-use have been analysed from a physical and social affordance perspective. See Appendix K for the complete functional taxonomy of affordances for the physical environment from birth to 24 months for the infants in this study.

Table 9:9 Body space and body play: spaces and objects 1 to 4 months

Environmental qualities that support certain affordances (spaces)	Observed in relation to	Physical (sensory) affordance	Social affordance
Flat, relatively firm surface	Baby bouncer Moses basket/ cot Changing mat / bed/ floor Couch/ arm chair	Affords lying Affords looking from Affords sleeping Affords changing routines Affords kicking, stretching and moving	Affords looking from Affords social interactions with carer Affords being included in social events Affords being excluded from social events (for resting)

Environmental qualities that support certain affordances/affordances: (Objects)	Observed in relation to	Physical (sensory) affordance	Social affordance
Detached objects with varied colours, shapes, sounds (graspable detached object)	Being presented to infant (Held up for infant to see)	Affords looking, watching, noticing Affords connecting with object if placed near hand Affords grasping Affords mouthing	Affords interactions from others

This detailed analysis over time results in a complex taxonomy. However, further analysis can distinguish some core features that support a simpler presentation of findings. Over time infants interacted with environments that had qualities that progressed from flat and mouldable surfaces (and frames) to platforms and sheltered spaces. At the same time, object qualities progressed from small, soft, hand-sized objects, to objects of varied shape, texture and size, to objects with multiple parts. These afforded opportunities for development that were outlined in each section above of body space, near space, middle space and home space. Table 9:10 elaborates on the relationship between object affordances and the phases of space interaction in infant play. Note that infants combine many of these play interactions by increasing their repertoire rather than replacing earlier interactions with newly emerging ones (e.g. mouthing is seen throughout the first year and not just in the earliest phase).

Table 9:10: Infant play: Affordances of objects linked to infant-environment space use

Phases of space interaction over time	Phases of infant play over time as observed through object affordances
Body space ↓ Near space ↓ Middle space ↓ Home space- exploration ↓ Home space- mastery	<ul style="list-style-type: none"> • Objects for feeling • Objects for mouthing • Objects for looking at /watching • Objects for grasping (soft, malleable) • Objects for shaking • Objects for pulling • Objects for hitting at • Objects for holding- that can be held in small hands (hand-sized) • Objects that stand on their own (i.e. objects for sitting at) • Objects for banging • Objects for taking out of a container/box • Objects for throwing • Objects for pulling apart • Objects for hiding things in (boxes, cups, bags_ • Objects for cause and effect • Objects for putting together • Objects for climbing in and out of/ for sitting in • Objects for pushing or pulling • Objects for sitting on and riding • Objects for feeding, washing, dressing, kissing (e.g. teddy) • Objects for figuring out (e.g. insert boards, shape sorters) • Objects for shopping/cooking/washing-up/baking • Objects for drawing, colouring, reading

As we know from Chapter Two, transactional processes involve bi-directionality and interdependency, with equal attention to the infant-and-environment relationship (Altman & Rogoff, 1987). Affordances provide a description of the physical environment that recognises this interdependency and bi-directionality, as the physical environment is only known for how it is used, and therefore does not exist in isolation. Affordances can only be understood as a person-environment transaction. It therefore can be argued that a more in-depth understanding of affordances will support a greater understanding of the characteristics of transactional processes. Having analysed further the affordance processes identified in this study, some specific characteristics can be described and are now addressed.

Cycle of affordances

From the analysis of affordances, we can compare object, space, social and physical affordances. Infants can be seen to change and develop in their interactions with the environment over time through this analysis of affordances. For example, initially during the phase of Body Space, a flat surface (such as the floor) affords lying, for Sarah. By the next phase (Near Space), the flat surface now affords sitting for her. Although the physical environment does not change (the floor), its function changes. During each phase, furthermore, her play needs change and objects are seen to be present to meet those changing needs. So, during Body Space, the objects include a suspended colourful toy for enticement to feel or grasp. Then during the next phase of Near Space, the same object is placed on the floor in front of her to shake or hold. The infant is seen to develop and change in regard to functional use of the environment. In this example, the same spaces and objects are used in different functional ways, which also leads to the hypothesis that affordances can be viewed as **developmental** in nature.

In addition, affordances are observed to influence the infants. For example, when Joe is learning to use the trampoline, he cannot yet jump. The soft surface of the trampoline entices the infant to move up and down and within a short few days he has begun to develop jumping skills. This demonstrates agency of both the infant and the environment. Joe influences the trampoline surface by moving on it which changes its form. In turn the changing surface influences Joe by affording him a jumping opportunity. He is observed to begin to use this new ability in other settings as his perception of new affordances broadens (in the play room). Gibson described this process as a self-perpetuating system. *'As new actions become possible, new affordances are brought about: both the information available and the mechanisms for detecting it increase'* (E. Gibson, 1988, p. 7). This highlights another characteristic of affordances: that it is cyclic in nature. There appears to be a **cycle of affordances** where an infant perceives an affordance and acts on it, resulting in a change in skill and development of the infant. In turn, the infant perceives new affordances based on these new developments (as observed with Joe above) and the cycle continues.

Environmental Specificity and affordances:

However, the cycle of affordances did not always appear to result in expected outcomes. For example, in this study, one family had a high level of available, varied objects for play, but the infant did not frequently engage with them (Joe). Equally, another family appeared to have a lack of availability of objects to meet the needs of the infant at a given phase (Karen). Finally, another infant had varied affordances for play and movement in the home, yet was late to walk (Amy). It is clear that the transactions between the child, the social and the physical environment all contribute at any given time in a specific way to determine the process of change and development. These

infants showed a different trajectory for change and development in responses to their specific social and physical environment that was also moderated by their own characteristics (Bronfenbrenner & Morris, 1998). Analysis therefore also captures the variability that is typical in child development (Adolf et al., 2008; Siegler, 2002) and confirms the need for a ‘specificity theory’ approach to understanding environment-infant relationships (Wachs & Gruen, 1982).¹²⁸

Affordances from a sociocultural perspective

Alongside this process of learning about physical affordances of the environment, infants were also seen to be learning about sociocultural norms. For example, when Joe tries to climb on the windowsills in the ‘good room’ he is warned to stop. Yet he is allowed to do so in the playroom. He is being taught the social norms for behaviour within the home setting based on his parents’ values. This is an example of sociocultural affordances of things (Reed, 1993). This may explain why the infants preferred to play with specific items more than others that appeared to offer the same affordances to us adults:

Observation notes: February 2010: In this month’s visit to Hannah, Clare explained about how Hannah likes to play with her purse. Hannah loves to open it and close it- to take out the credit cards and coins and plays away with it. She seemed to love slotting the cards specially back in their slots in the purse as if trying to explore how things work or fit together. Clare decided then to go and get Hannah her own purse but this did not work- Hannah still sought out her mother’s one.

Fieldnotes, February 2010: One perspective on this incident is that Hannah is playing symbolically with toys or objects. However, there seems to be some aspect of meaning attached to this playing as Hannah was valuing the purse for what it represented to her- that it was her mother’s perhaps or that she had seen her mother use it and wanted to use it also. This may be an example of imitation and Hannah learning by watching. It is

¹²⁸ Specificity as a concept was reviewed in Chapter Four, page 85 in relation to environments and organisms. Wachs defined environmental specificity as ‘*specific aspects of the environment predict only specific aspects of development, at specific ages, for specific classes of individuals*’ (Wachs, 1985, p. 34).

interesting to me however that another purse does not appeal to her even though it is the same type of object. Similarly, this play was also observed with Amy and Aileen in Kerry. Amy loved to play with the remote control for the radio but even when Aileen gave her a pretend one, she did not value it or choose to play with it. Instead she wanted the family one. So, it must mean that the object itself is not what is important but the meaning of the particular object for Hannah or for Amy.

Reed acknowledged that there could be a sociocultural biased perception and use of affordances, along with the physical one (Reed, 1993). Therefore, we perceive the affordances of objects not just based on their physical or sensory characteristics but also on cultural knowledge, which attributes certain meaning to those objects.

Emotional affordances in the infant- environment relationship

During analysis another characteristic of affordances of the physical environment became clear over the year. I realised that places can serve to self-regulate infants also, therefore providing emotional affordances as well as physical and social ones. For example, in Joe's case, I saw how his mother used the environment to help him calm down:

Fieldnotes, March 2010-Joe was very cranky today- he was teething and seemed to be suffering a lot with pain resulting in a lot of tears and crying for the smallest of problems. He was difficult to engage and seemed distracted by the pain or discomfort he was experiencing. Aisling worked hard to keep with him during this time- to keep patient and ready to help him. She seemed very calm and able to stay removed from the emotional turmoil going on with Joe- she continued during the session to try to distract him; to give him gum soothing cream; to try him with a bottle and cake; to bring him to another part of the house where he seems to play more easily- i.e. the play room. There was an obvious difference in his play once we moved to the playroom. Here Joe roamed freely over and around toys and toy structures. He dipped in and out of toys and looked for adult intervention when he got stuck trying to reach things or climb through things. Otherwise he played away and watched his brother and tried to join in and play with the same things.

Hamm notes that children are only able to play when their need for safety and comfort is met (Hamm, 2006). This includes the role of the physical environment also and not

just through social interaction. Environments have been identified as restorative and offer another route to support self-regulation (Korpela, Ylen, Tyrvaïnen, & Silvennoinen, 2008). Studies have shown specifically that favourite places have high levels of restorative qualities (Korpela, Kyttä, & Hartig, 2002). In Joe's case, the motivation to play when he is surrounded by his play things in his own play space seems to support such self-regulation, which in this case was to calm himself. It may be that the playroom is a special place for Joe where he can escape from social demands or where he has a sense of control also. This has been evident in observations over time, where he clearly uses this space in relation to his own mastery of it. He climbs and jumps throughout this space, which he is not allowed to do elsewhere in the home. It is a place he can take control and engage in activities that are meaningful to him and supports his sense of self or self-efficacy. In a study of older children's favourite places in Finland, researchers found that the primary reason for finding a place to be restorative was based on its capacity to provide a place '*to forget troubles and feel free and relaxed*' (Korpela et al, 2002, p. 394). Korpela's work has pointed to the need to consider how children use environments to self-regulate as well as develop cognitive, social and physical strategies.

Although infants cannot tell us whether the same meaning applies to place-use for them, we can make a subjective hypothesis that places have a similar use in self-regulation for infants based on their play behaviour and choices from observing episodes such as Joe's example here. Although environmental self-regulation is an emerging area of research, it has not been explored specifically as yet in relation to affordances and infants and is an area that offers interesting potential for further study.

Summary

This chapter has presented the findings that relate most specifically to the physical environment of the home, which is the main focus of this study. Three research questions are addressed in this chapter, and findings related to each were presented:

- What is the nature of infant-environment transactions over time?
- What are the affordances of the physical environment that influence the developmental progression of the infant?
- What are the characteristics of those transactions?

The physical environment was analysed primarily through observation data, supplemented by interview data and from this, infant transactions with places, spaces and objects were identified. Firstly, the trajectory of infant-environment transactions over time was described resulting in a synthesis of how infants engage with their physical environments. This analysis identified the inter-relatedness of object-space use. Furthermore, space-use was also about play: playing with space emerged as a type of play in itself. Overall analysis of infant-environment transactions identified a typology of space-use that progressed from body space, near space, middle space, home space, to mastery of home space.

The research question relating to affordances of the environment was addressed next. Through detailed analysis of monthly interactions, affordances of object and space use were identified. Affordances were studied further to analyse their characteristics, to support an understanding of the transactional nature of the infant-environment relationship. Affordances were identified to be developmental and cyclic in nature, and included not only a sociocultural aspect but also an emotional one. Furthermore, infants engaged with their physical environments differently as they developed, thus highlighting the environmental specificity aspect of affordances.

Overall, findings reflect a process of learning that is multidimensional and influenced by both the physical and social environment. Links between places, spaces and object use are evident, but clearly are intertwined with the social environment also. Consequently, the chapter has most meaning when considered alongside Chapter Eight. The next chapter builds on this exploration of the infant-environment relationship, to consider how this informs our understanding of infant play.

CHAPTER TEN: INFANT PLAY, PLACES AND OCCUPATION

RATIONALE:

The purpose of this chapter is to now consider the transactional characteristics of play and learning in the home. This study has identified that this is a process involving multiple influences: the child, the physical environment and the social environment. Together they form strands of influence on each other as they interweave in daily life events. Together they present a dynamic view of play and learning, that is three dimensional. We have seen in Chapter Eight how the physical environment is shaped through processes of parental reasoning. In Chapter Nine, the nature of the physical environment was explored through the lens of affordances, which enabled us to examine how the environment influences the infant and vice-versa. On the basis of these findings, a number of important characteristics of play occupations and transactions can be identified and are the focus of this chapter.

CHARACTERISTICS OF INFANT PLAY:

Play as observed in this study was characterised by exploration and mastery, in relation to body and space play, object and social play. Typically, no one type of play was observed in isolation, with object play being part of space or social play at one time, thus demonstrating that play is a dynamic, inter-related transaction with the social and physical environment. Physical play as described by Pellegrini and Smith (1998) was observed here as body and space play primarily but was also frequently social. Equally, social play was observed primarily through family play and interaction games led by

more mature players. It would seem that Sutton-Smith's argument against the need for categorisation of play is supported here in an ecological study, where play is observed as a contextual, holistic transaction (1986). Consequently, infant play can be conceptualised as encompassing all of the different characteristics of play observed in infants under two, rather than attempting to name it based solely on purpose (e.g. exercise play) or on the nature of interaction (e.g. object play or social play).

In Chapter Two a number of issues related to occupation were addressed that relate to infant play. The issue of cultural significance for example was explored and recognised as problematic (Parham, 2001; Spitzer, 2001). Spitzer's definition was considered for application to this study of infants as it excluded a specific sociocultural perspective, leaving a broad enough definition to support inclusiveness. From this starting point, some key characteristics of infant play emerged.

Play processes are developmental: from simple to complex

How can we name what babies in particular are doing when they have such limited repertoires of engagement? Play interactions of the infants were often not complex and frequently seemed repetitive in nature which is typical in play behaviours of young children (Field 1979; Spitzer, 2004). Can repetitive play behaviour also be viewed as purposeful or occupational? Spitzer's work with children with autism informs an occupational development perspective that addresses these concerns. For children with autism, repetitive behaviours are common and are often viewed as non-conventional and non-purposeful, as they have no meaning to the general population. This is based on an adult's perspective of children's experiences (Spitzer 2004). Spitzer argues that repetitive occupations must be differentiated from repetitive behaviours- occupations can be repetitive if they are active, directed and intentional (Spitzer, 2004). Following

Spitzer's reasoning, in this study infant behaviours were not disregarded if they were repetitive, and instead were identified as occupational if performed with intentionality and purposefulness. Simple interactions such as grasping with hands or kicking with legs to hit an object were then viewed as play interactions, when there was purposefulness to them. Infants were observed to engage in simple play behaviours or occupations from the earliest months (as noted in Chapter Nine). This view of purposeful interaction has been identified in other literature (e.g. Rochat, Goubet, & Senders, 1999; Rochat & Striano, 1999; Trevarthen, 2011) thus reinforcing the view that occupations can be simple as well as complex.

However, play is frequently not considered to be present in infants and is considered to be exploration in some literature (as discussed in Chapter Five). Following on from this debate, there are questions about play and exploration to be considered: why does exploration appear to be represented at times in the literature as a seemingly undervalued position? For example Belsky and Most describe a child as moving on to '*no longer just exploring*' as if to judge exploring to be of a lesser value (Belsky & Most, 1981, p. 631). Furthermore, Weisler and McCall consider that meaningful manipulation does not happen until the child is almost a year old. This begs the question: who is judging meaningful, and how is meaningful defined? By describing such behaviours in these terms, earlier manipulative exploration is relegated to a lesser status of meaning and its importance in the infant's life experience is denied. The meaning for the infant at ages three or four months is not considered. This appears to represent an adult perspective of what is meaningful manipulation, rather than consideration to the meaning for the infant whose early manipulations of grasping and reaching maybe equally powerful in terms of experiencing mastery and achievement as

those manipulations when the infant is one-year old. My research has led me to conclude that play includes exploration, and that therefore exploratory play is a meaningful interaction and part of rather than being separate to play.

A transactional view of Infant Play:

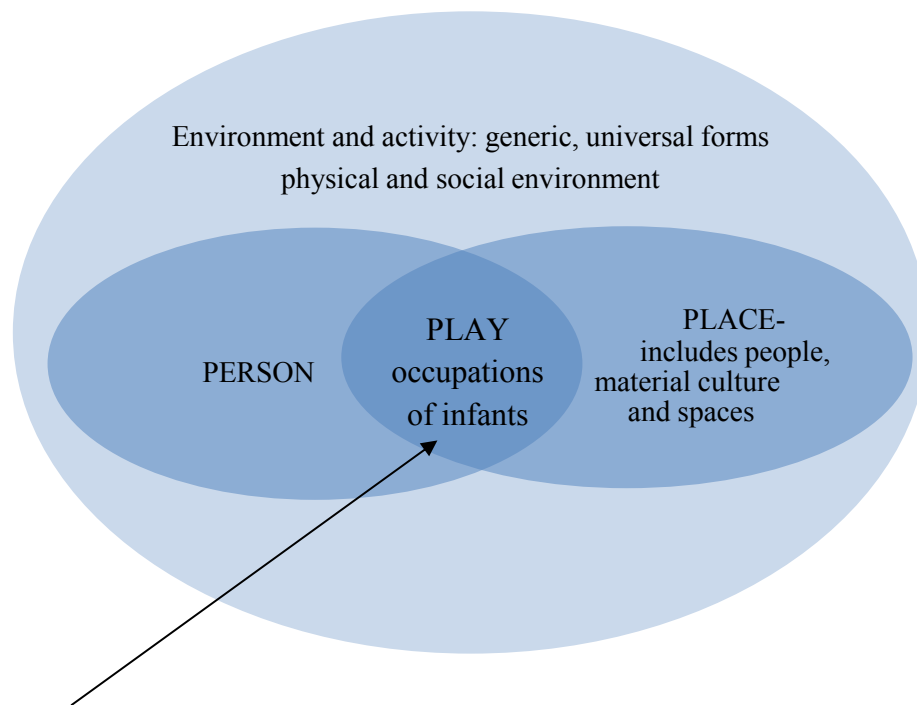
In October, I was presented with a particular instance which focused my attention on the meaning of occupation as it is portrayed in the person-environment-occupation model (Law et al., 1997).

Fieldnotes, October 8th 2009:

First, when asking what is the nature of the transactions that I am observing, I think of the person-environment-occupation model and find that it does not satisfactorily explain the process. In the PEO model, occupations and environments are viewed as being separate circles to the person. Instead it seems to make more sense that occupations can only happen in the transactions, as this is where activity becomes meaningful. Having read about Dewey's perspective on context (Cutchin, 2004) I am thinking also that it is not the environment either that goes in this model, it is person and place.

This exploration of transactions developed further during the study, supported through use of the PPCT framework that enabled a dynamic analysis of processes. For example, instead of viewing babies' behaviours as rhythmic stereotypies (Thelen, 1979)¹²⁹, they were viewed as intentional play activities that are the result of person-and-environment transaction. This is captured by the model below (Diagram 45).

¹²⁹ Which could be viewed as an organismic perspective, where development is driven by the child rather than being viewed as an interactional process.



Overlap between person and place is where unique play transactional processes take place: a perspective on play occupations as processes of the person-context relationship.

Diagram 45: Transactional play occupations- processes that emerge through the infant-environment relationship.

In this model, the outer circle refers to the environment of which we are part: the environment is not context but a shared, ever-present space that is constitutive of the elements within it (Clarke, 2005; Cutchin, 2004). The inner two circles represent the individual person and the individual specific places that are not generic but specific and variable depending on the outer circle (e.g. social and cultural influences). Note that these circles are not boundaried by lines to denote continuity between them and the environment, rather than separateness. Places encompass the physical, social and emotional environment in which we live.

So we live in an environment where there are activities (general, universal aspects of our lives) which reflect a realist ontology that there is a real world that exists outside of

our experiences of it. When activities and environments become meaningful, environments become places and activities become occupation. When the person interacts with places (including people within them), and the material culture within them also, transactions occur, resulting in learning: *'It is now widely accepted that the self evolves through activity that is in and of rather than being separate from the environment'* (Rowles, 2009, p. 81). From my research, I believe that Rowles here is referring to occupation and that place and occupation not only co-exist but are co-constituting elements that are best understood in relation to the transactions between them and the person. Therefore, occupations are transactional processes, where the person-context relationship is characterised by co-adaptation and transformation.

Occupational behaviour equals play:

The physical environment was considered as the starting point for this study as a means of exploring play and learning in infants. Early observation specially of the babies in the study resulted in a period of disarray as I tried to understand what I was observing. From repeated observations and going back to the literature, I realised that what I was seeing could be described as emerging occupational behaviour, as it was purposeful, intentional, and that the baby was demonstrating agency in their interactions with the environment (Reilly, 1974; Wood et al. 2000). In Chapter Five, play was defined as *'freely chosen, personally directed, intrinsically motivated behaviour that actively engages the child'* (NCO, 2004, p. 11). Hence, occupational behaviour equals play behaviour based on this definition.

However, key assumptions of occupation describe them as being complex and meaningful, and most typically considered in relation to health and well-being. It is my contention following analysis of the data and context gathered in this study that these

key assumptions of occupation need to be amended. Taking play as a sample occupation, this study has identified that occupations can be simple and has meaning for the infant as communicated through action primarily. Furthermore, play appeared to be primarily related to learning and development rather than health and well-being. Although there is an assumed inclusion of learning and development within the well-being and health concept, this seems to ignore the core concept that occupation can drive learning. While it is acknowledged that occupational science grew from a health discipline primarily, there appears to be an assumption that occupation relates more to health than learning and development. This may be due to the prevalence of studies of occupation that relate to adults rather than to children. Furthermore, while health and well-being are accepted concepts in the discipline of occupational therapy in the UK and Ireland when considering adult worlds, for children (even for children with developmental disabilities) the issues are frequently less about health and more about learning and development. There is a need to consider adapting the current perspective of occupation for health, to include occupation for learning and development more explicitly. Therefore, having reviewed current debates on occupation, the assumptions of occupation as they relate to infants can be adapted from Primeau and Ferguson's version (1999) (see Table 10:1 with adaptations italicised).

Table 10:1: Key assumptions of occupation, adapted from Primeau & Ferguson, 1999

- That individuals have a drive to engage in occupation
- Occupation involves *intentionality, purposiveness, environmental transactions & agency*
- Occupation must be considered within an environmental context
- Occupation is experienced within the context of time
- Occupation holds meaning for the person engaged in it *as communicated through action or word.*
- Occupation influences health, well-being, *development and learning*
- Occupation is both the product and process of development

Play comes first- other occupations emerge from play behaviours

From this stance of play being occupational, and of being a developmental process from simple to complex, this study has identified that infant transactions are wholly about play interactions from the earliest moments of agency. Only when these simple occupations develop and become more varied and complex, do other occupations emerge, such as feeding or dressing. Play is the process through which infants learn to master the world and become independent transactors within it. Play comes first and through sociocultural influences it becomes the basis for adaptation and mastery of other occupations such as mealtime routines and self-care tasks. Infants learn to shape their play behaviour into more focused skills, and develop abilities such as self-feeding or dressing. In this study, even when the infants had begun to self-feed or to wash themselves, play was still present. Their mealtimes constantly included other objects or playful transactions. Play continued to be the most dominant behaviour in their transactions. So play is both the first occupation that infants engage in, and also the most dominant occupation in infancy.

Having discussed some key findings in relation to play as occupation, this section will now address more specific findings regarding infant space play, which serves to consider play occupations within the context of the physical environment.

CHARACTERISTICS OF INFANT SPACE PLAY

We have seen that preschoolers need places for play that are private, social and imaginary (A. Clark, 2007), and that children of middle childhood seek places that are special, secret or for hanging out (Roe, 2006; Thomson & Philo, 2004). From this study, we have identified that infants have similar needs for engagement in spaces and places that afford challenge, risk-taking, engagement, pleasure and interaction but that meet their specific needs as infants. Analysis has highlighted for example, that infants seem to have a spatial tie with their mothers rather than seeking private places. Furthermore, their play is highly related to exploration and discovery rather than imaginary play, although this was becoming more evident by the last phase of Home Space play.

Findings in this study illuminate the infant-place relationship and identify that infants need places that can be described as **personal, social, for discovery and for mastery**. Personal places are those that provide security and belonging (and may be observed as the infants favourite places to play) while social places are for interaction. Places for discovery are where infants are exploring either the places or objects within them (or both). Places for mastery are those that have the 'look at me' dimension as described by Stephenson in her study of outdoor play in preschool (Stephenson, 2002). These are the places where infants are challenged and take risks, but also are places where the infants demonstrate their competence in the activity they engage in, so they may have a repetitive nature.

Playing in space and playing with space: space as a play-partner:

During analysis of the relationship between the physical environment and the infant, I began to notice a trend in play that warranted a different way of viewing the environment. Instead of foregrounding the physical objects and home setting, I began trying to foreground negative spaces (as an artist does). In this way, the infants' interactions with the physical environment were observed that are not readily obvious. This enabled me to realise or at least to consider: do infants play with space itself?

During the early months (Body Space and Near Space phase,) both Karen and Sarah were observed to move about arching their bodies as if exploring the movement experiences as their bodies moved in space. Then Karen was seen to enjoy throwing herself back in her mother's arms to experience a more intense interaction with space. It is known from neuroscience literature that moving the head position in unusual ways stimulates the vestibular system in the ear- the centre of balance, so moving the head is known to be a sign of engaging in movement experiences (Lane, 2002). For babies who have limited experiences as yet of movement in play, this seems a likely explanation of their unusual movements. However, to date such movements have been described in relation to proposed purpose, for example that they relate to developing postural control (Stallings- Sahler, 1998) or organismic development and exercise play (Thelen, 1979; Pellegrini and Smith 1998). It may be that when these movements are observed through a different lens, of play and transactions, that space can be recognised as a play partner and what we are seeing is in fact a baby playing with space. This view is one that comes from a transactional perspective, because it is based on asking: what is the relationship between the child and the environment, and how do they influence each other?

From analysis of space-infant interactions, playing with space and in space was observed in different ways across the 24 months for the five infants (Table 10:2).

Table 10:2: The sequence of space play observed over 24 months

Playing with space (stationary) ▶ continues beyond first few months
Floor play ▶ changes in nature from stationary floor play to mobile floor play
Platform play ▶ combines floor play with other surfaces of varied heights
Playing with space (mobile) ▶ mastery of movement through space

Playing with space (stationary):

Once the babies begin to move, they are observed to arch their backs while in baby bouncers that support their bodies, and so give enough support but also space for movement (three to five months). Their movements include movements of the head and body in different ways against the holding surface of the chair. This does not seem to be due to discomfort or seeking attention but seemed to be purposeful and enjoyable.

Equally, at six months, Karen was up in her mother's arms arching backwards so her head was almost upside down and her mother holding her safely as she explored this movement. In response, her mother then held her upside down by her legs to see how she responded to this position and Karen showed signs of enjoyment of this experience. She appears to be expressing herself through movement (Stephenson, 2002). This could be viewed as part of rough and tumble play for infants as it continues to be seen in families who engage in throwing infants up in the air for example and other types of physical interactions in the air. Notably, this form of space play involves Body Space, which is the phase that emphasises play in relation to the body rather than with objects.

Floor play:

Floor play is seen in two different phases: when infants are beginning to negotiate moving on the floor (e.g. Near and Middle Space) and also when they have already begun to walk and now use the floor for other reasons in play (Home Space). For example, Sarah at four months plays on the floor from her back. As she begins to move on the floor over the next few months, she goes from twisting herself around different positions on the floor mat, to being able to turn herself over into her stomach and rolling. These movements sometimes combine object interaction but other times seem to be for the experiences of movement in itself.

Hannah engages in floor play as an older infant who seems to find the floor space to be a more appealing place to play than on a chair or at a table. This is observed mostly during the Home Space phase of exploration, when she chooses to combine object and space play in multiple sites. It is observed both indoors and out.

Platform play:

Platform play is observed in each of the infants during mobile play (Home Space phase). They seem to find spaces appealing if they afford different heights for play. So, random platforms about the room and house are used instead of the floor or family table. These platforms if low enough also serve as places on which to climb up and settle there to play. This maybe an expansion of floor play, as it affords another type of flat surface on which to play. Joe, Hannah and Amy are observed sourcing a variety of platforms on which to play, such as stools, ledges, steps and coffee tables. This use of space in play went hand in hand with transportation of objects, so appears to be a combination of space and object play.

Playing with space (mobile):

When the infants are mobile and have begun to master their movements in walking and running, space offers new affordances for play, which can be described as being both for exploration and mastery. During the exploration phase for example, all infants misjudged spaces and got stuck, but during later months this was no longer happening. For example, Amy (14 months) tried to climb under her high chair and needed help to free herself but by 16 months, she was squashing herself into the empty tins of sweets left over from Christmas- working hard to climb in and fit her whole body into this tiny space and enjoying her ability to do this as if she has mastered space use.

Mastery for Joe was observed frequently in his constant climbing and jumping. He climbed through spaces within the home as well as outside it: jumping on the couches and onto the window ledges and shelves in any room- he climbed up the ladders of playground equipment and would go down slides head first (18 months). Playing with space for him involved seeking new opportunities to play with the environment and rarely involved object play.

For Amy, this form of playing with space was driven by her desire for social interaction and she used space to engage in this type of play by crawling about the floor hiding behind the kitchen island to play chasing or peek-a-boo, or running away from her mother to elicit a chasing game. Space play frequently included a social dimension consequently more often than including objects.

Summary

Having explored and described the environmental interactions of five infants across 24 months, the nature of the infant's play interactions over time was described and consequently, characteristics of play occupations and transactions could be identified. Firstly, play occupations were seen to begin as simple actions that may sometimes be repetitive but then evolve in to more complex ones. Secondly, the role of place in occupation was considered in relation to the person-environment relationship, and a revised model of occupational transactions was presented. Thirdly, infant play was observed to be equal to occupational behaviour, which was one of the original ideas in occupational science, but in recent times has been overshadowed by other literature that speaks of occupations being complex behaviours that are highly related to health and well-being. Furthermore, play was identified to be present from the earliest months in the infants' lives, recognising the infants' abilities to interact in purposeful and intentional ways with the environment. So, play was identified to be the primary occupation that infants engage in, and indeed is the occupation that underpins the development of other occupations of daily living, which are seen to emerge out of play.

Following this analysis, further characteristics of infant space play were outlined where infants were identified to play with space as a play-partner in itself. This identification of playing with space furthers our understanding of infant play and the physical environment, and supports an argument for increasing our attention to the physical context as playing an active role in infant play as opposed to simply being the setting for it.

Through illuminating the role of the physical environment in play, infants were identified as players who seek to learn through their play interactions to become

competent players and masters of their play spaces. Findings in this study highlighted that infants have a need for places that are personal, social, for discovery and for mastery. This aspect of mastery is not very prevalent in children's occupational therapy in the UK and Ireland. Instead play is viewed primarily as a skill to be taught, or alternatively, play is viewed as a therapy for healing (Stagnitti & Cooper, 2009). Even where play is explicitly taught as a core aspect of therapy (for example in sensory integration), little attention is paid to the outcome of such an approach, with few outcome measures that focus on mastery or competence in play. Perhaps this is due to the need for evidence more at the participation and engagement level of infant play behaviour. Consequently, however, therapists focus instead on play in relation to skill development more typically. Yet there is little evidence that working on play skills results in improvements in engagement in play (Bundy, 2010). There is an argument for a reworking of play rhetoric in occupational therapy towards well-being and health (Parham, 2009). From this study, I propose also that this needs to encompass a richer understanding of play that includes concepts of agency, mastery and self-fulfilment as consequences of doing and being in the physical and social world.

CHAPTER ELEVEN: CONCLUSION

INTRODUCTION:

This study was undertaken to explore infant play and learning through the lens of the physical environment of the home, which is an under-researched aspect of early childhood. From the outset, places, spaces and objects were identified as the primary aspects of the physical environments that form the microenvironments of infants' lives. An ethnographic study was designed and implemented in order to carry out this research, guided by an ecological approach. Five families took part and engaged with their infants in monthly play observations in their home for 12 months. The goal was to begin to address the lack of research on early play in the home, and to consequently be able to influence or guide professional practice in the ECCE sector.

The previous four chapters describe and present findings from this study along with specific discussion to address the research questions that instigated the study in the first instance. This chapter now summarises key findings overall with some consideration to how this study makes an original contribution to the field and highlighting aspects that are important for future research.

How the study evolved from its original conception:

The original purpose of this study was to explore indoor and outdoor learning environments of infants under two, in relation to play and the physical environment of the home. During the early stages, specific conundrums arose that demanded attention. For example, how is ecological research operationalised, and how does transactionalism guide research design? And how can play be researched in infants from an occupational

perspective? These questions initiated a detailed review of further theoretical and methodological literature. What emerged was the identification of core frameworks that worked together to provide a congruent scaffold to the study. The study became a transactional one that was supported by a Bioecological approach, with the application of an affordance approach in analysing play occupations in the environment. Consequently, the thesis is an ecological study that considers multiple layers of influence, drawing from varied disciplines in the field. So although it began initially with a focus on the home, it evolved into a study of the home as a dynamic physical and sociocultural environment. The following section summarises some key findings that arose from the study regarding transactions and affordances. Then some of the core findings concerning the physical environment itself are discussed.

Affordances and transactions: how these concepts supported the study:

This study has taken an affordance approach to explore infant transactions with the physical environment. As a result, characteristics of affordances were identified. Affordances are cyclic in nature, they can be viewed as developmental,¹³⁰ they are specific to the infant and the environment, and they include a sociocultural and emotional aspect also. An affordance approach enabled the researcher to explore and identify a **functional** categorisation of space and object use for infants under two in the **home environment**. Developing such a taxonomy is supported by evidence that children tend to name places in relation to their functional significance (Heft, 1988). Equally, studies of non-verbal communication show that infants relate to the function of objects rather than to their name (Acredolo & Goodwyn, 1998). Typically in the

¹³⁰ For affordances to be developmental, means that in a child-environment transaction, the interaction is not static. Instead it evolves over time as the child's abilities develop, resulting in an increased ability to perceive affordances, which have themselves become more complex or varied, which in turn results in more complex and advanced transactions taking place.

analysis of object and space-use of infants in this study, they were observed to use objects for their own perceived use. Such findings enabled a shift away from a commercial approach in identifying play materials to an approach that analyses materials in relation to function. From this I consider that using a functional method to analysis of the environment supports a more child-centred approach to researching with infants.

Applying an affordance approach contributed to our understanding of **transactional processes** from the perspective of the physical environment. Analysis of affordances identified that the physical environment is transactional in nature, in how it enables and motivates the infant to engage in progressively more complex activities (Bronfenbrenner, 1979). Therefore, I am also saying that the physical environment has agency. This view of the physical environment is one that is relatively new and although it has been a valuable way to support this study, it also demands a reconceptualisation of the environment that is arguably problematic. Literature review highlighted a sociocultural perspective being dominant in transactional research. It may be that transactionalism only truly relates to the social environment and not the physical. Alternatively, it may be more of a reflection of the fact that analysing the physical environment from a transactional perspective is difficult. However, applying a functional affordance approach provides a useful framework for examining person-environment processes as an active system of transactions and is an approach that warrants further interrogation.

SUMMARY DISCUSSION OF FINDINGS:

So how does this study inform us on indoor and outdoor learning environments for infants? What does it do to illuminate this issue? Data analysis during this study identified multiple influences on play and varied processes that are involved in infant-environment transactions. By foregrounding the physical environment within these processes, some important findings can be outlined.

Through an analysis of affordances and transactions, exploration of infant play evolved into an exploration of how **infant space play** develops over time. A typology of infant-environment transactions was identified that included body space, near space, middle space, home space and mastery of home space. Infants were observed also to play with space as a play partner, including stationary play, floor play, platform play and mobile play. Analysis highlighted consequently, that physical spaces need to provide spaces for infants that are personal and social, for exploration and for mastery, which differs from findings for older children. Furthermore, object and space affordances were outlined and described that enable a detailed understanding of the nature of transactions at each phase of space-use. This study identified that for these infants there was an inseparable nature of object and space use in infant play. More specific findings are now discussed in more detail.

Spaces and play

Through studying the physical environment of the home, this study throws light onto the relationship between play-space interactions. The physical environment was identified as being a learning environment when it provided affordances for interaction that met the infants' needs as observed through their motivation and choices in play.

Within this context, infant space play was determined by availability, variety and complexity of spaces in a similar fashion as these characteristics have been found to relate to object play. The availability, variety and complexity of play spaces was often mediated by the parents who orchestrated play for the infant, specially during stationary play before the infant is independently mobile. As infants became more mobile, they sought variety in their play spaces, often choosing to play in multiple sites at one time.¹³¹ Similarly, as their play interactions developed, they demonstrated a desire for playing in places that provided complexity, such as spaces that afforded climbing or sliding. So the function of the play spaces became more complex. Infant space play therefore requires a range of available and varied physical features to afford multiple play opportunities. For young infants this included floor play and equipment that afforded opportunities for the babies to stretch and arch their bodies to explore space. For older infants, this involved platforms of different levels on which to play or to climb for play. Floor play and platform play are therefore identified as key characteristics of rich play environments for these Irish infants.

In some cases, there was a lack of availability of space play. For example, floor play was noted as being unpopular for young infants in this study and hence some parents avoided placing their babies on the floor to play. At an older stage, another parent limited space play through the use of a baby-walker, which provided mobility but restricted the infant's movements. In these cases, infants were seen to be slower to develop independent space play compared to other infants. These aspects of space availability have been the focus of specific attention in the USA where parents have been targeted through training programmes to increase their awareness of the

¹³¹ Note that this should not be viewed as disorganised, distracted play as is frequently the case (Goldschmied & Jackson, 1994).

importance of floor play. It may be that this specific feature of space play is one that needs more attention in the Irish context. Further research on this aspect would be important.

Analysing the environment from an affordance perspective helped identify other challenges in providing opportunities for varied and complex space play particularly in outdoor settings. Infants who engaged in space play such as floor or platform play appeared to lack these affordances outdoors compared to indoors. Typically, these families did not have places outdoors for sitting on nor sheltered areas during the winter for example. Yet parents reflected on their desire to orchestrate outdoor play for their infants during colder months and seemed to be seeking some guidance on this. Findings from this study can provide some guidance. In considering outdoor play, attention needs to be given to sheltered areas for floor play and to identify areas that can provide different levels, platforms and places for playing at or on. This will ensure that the outdoor environment can provide equally complex or varied play spaces as the indoor one. However, as outdoor play was not a frequently observed feature in this study, it may be an assumption that outdoor play has the same characteristics as the indoor play observed. Further research is needed to explore this particular aspect of space use in outdoor play.

Outdoor play was identified as being less common than indoor play and these families appeared to have fewer strategies around orchestrating outdoor play compared to indoor play.¹³² This study identified that indoor play is frequently orchestrated around family routines and that play is either embedded into routines or kept separate from them.

¹³² Furthermore, in another exploratory study with five Irish parents, the problem of not having commercial playthings outside was identified as problematic and given as a reason why their toddlers did not often play outside (Coughlan & Lynch, 2011).

Orchestrators of outdoor learning environments therefore need to take into account that infants are influenced by the routines that can take place there. For example, during the summer when the garden needs attending, infants were observed to play outdoors more frequently, which parents acknowledged was due to the spatial tie between them. Parents did not identify weekly outdoor routines that took place in the winter in comparison. In designing outdoor play environments, consideration needs to be given to orchestrating play alongside family routines in order for outdoor play to take place.

Objects and play

Findings in this study are based on the perspective that infants engage in play behaviour from the earliest months as observed through intentional, purposeful transactions with their environment. This was highly related to object play. Hence, infants were observed to move from a position of ‘what can I do with this?’ to ‘what else can I do with this?’ as their play evolved into more complex transactions in their environment. This is a shift from the accepted position of ‘what is this’ as described elsewhere (C. Hutt, 1976).

From an affordance approach, objects were analysed according to how they were used. Findings identified that infants demonstrated similar play behaviours when playing with objects, irrespective of whether they were toys. In these homes parents often seemed to understand this motivation for play with ordinary objects and orchestrated opportunities for this to occur. However, for other parents, this was not recognised as meeting the infant’s needs. In childcare settings work has been done to encourage the use of ordinary materials in infant play (e.g. Treasure Baskets) and for heuristic play with toddlers as a way of facilitating play (Goldschmied & Jackson, 1994). However, there are no similar approaches to supporting object play for infants to date in the home setting. This study identifies that object play involves ordinary objects of everyday life

found in the home. Indeed, even when toy objects were available, infants frequently chose real items (such as purses or mobile phones) over toy ones. Object play in infants refers to play with the material culture of home environments, and this does not imply (or rely on) an abundance of toys. Instead findings highlight the power of the ordinary everyday things in providing rich play experiences for infants. Professional practice in relation to supporting infant play in the home can take guidance from these findings to expand the view of play to include play with ordinary objects in a similar fashion to Goldschmied's work.

Implications for designing play spaces:

This study found that space-object play is more frequently seen conjointly rather than separately. Consequently, creating indoor and outdoor learning environments needs to consider the use of spaces and objects in play concurrently. For example, as we have seen in these homes, play takes place most commonly where the mother is rather than in a designated play room. Designing play spaces requires considering therefore, the spatial tie to parents and other play partners, along with the affordances of the play spaces for object play. The issue of availability, complexity and variety needs to be addressed as play space design can overlook how places and objects are accessed by the infant also. Therefore an important starting point for designing play spaces is to first analyse how the family home is already utilised from an affordance perspective, to determine how spaces and objects can be made available in optimal ways for the infant. Frequently this would **not** require having a separate room for play.

The physical environment and the influence of parental reasoning on play

One significant finding in relation to learning environments was the influence of parental characteristics on play. This emerged through values and attitudes towards the infant but in a broader way than had been anticipated. Parents were identified as being shaped by their own cultural experiences as children, including inter-generational influences as regards their own parents work occupations. Furthermore, they also demonstrated varied ranges of playfulness and play styles during interactions. An ethnographic approach supported the emergence of this finding over time, where parents became more reflective and began to explore more their own reasons for why they behaved a certain way or on what influenced them. This resulted in a core overall finding: that of parental reasoning. Parents were identified as using many forms of parental reasoning such as knowledge-based reasoning, sociocultural, future-based, personal, practical-based and narrative reasoning. Each contributed to parental reasoning processes in varied ways, influencing parental behaviour consequently, therefore influencing how play opportunities and environments were orchestrated. This perspective on parental reasoning has great potential for professional practice in early childhood, in supporting a more family-centred approach to understanding parents' views, values and attitudes in terms of supporting optimal play environments.

Conclusion: the concept of a 'just-right' environment:

Analyses of the environment provides detailed insights into infant interactions with the physical environment but as we have seen these do not exist independently of the social environment. Consequently, this study leads us to consider instead the concept of the ideal environment for infants: a 'just-right environment' that takes a three-dimensional

view of optimal play environments that include transactions between the infant, the physical environment and the social environment.

Fieldnotes: March 2010: Reading and coding today threw up another new angle on how environments are adapted to suit the needs of the 1-year old children in the study. Parents in both Clare's and Aileen's home work towards a principle of keeping the environment 'JUST RIGHT' for the child: in both homes the children had begun to move about more, to climb and to run about. Both parents had experienced their child having falls more often now. As a result, they had adapted the home to make it safer but when you examine this more; they also had just adapted it minimally.

This example from fieldnotes highlighted situations where families had demonstrated sensitivity to the infants' learning needs, and had put aside their own fears of risk and safety to try and accommodate their learning, and only adapted the environment when it seemed necessary. Thus they were able to achieve a level of freedom for their infants within a least restrictive physical environment which afforded rich opportunities for development. The specific environments in this study that seemed to afford optimal opportunities for development, included both object and space use, combined with the responsiveness of others (parents and siblings) to orchestrate play interactions in the physical environment. So processes that optimally engaged the infants were multidimensional, and provided physical, social and emotional affordances for successful play interactions.

When all is considered as contributing to the infants' development, the environment can be characterised as the **just-right environment**. However, activity is always 'embodied and embedded' and always performed in specific environments with specific affordances, opportunities and constraints (Adolf & Berger, 2006, p.164). Infants in the study have shown different paths of development and their lives reflect the embedded nature of infancy when family contexts are taken into account. Equally, child characteristics leading to different rates of change and development reflect the

embodied nature of development also. Given these findings in relation to the specific nature of the infant-environment transactions, the environment needs to be construed as **A just-right environment**, as there is no one universal environment, but instead one that specifically meets the needs for a given child in a given context.

A just-right environment involves availability of spaces and objects but also active participation on behalf of others in providing physical access to the environment, specially for infants who are stationary. It is not enough to have objects or spaces for play available, or to show and demonstrate how a toy works, but to have an ongoing facilitatory dynamic process of enabling play to happen. Studies have shown that having a varied presence of toys in the home may be insufficient without the parents' involvement for infant development (Parks & Bradley, 1991). So a physically responsive environment is required, that involves more than just parental warmth. It also needs to include the ability of the parent to orchestrate the environment for access to the available affordances in the home setting in a way that maximises successful interactions. This has been captured in the literature as being a process of facilitating the just-right-challenge. Activities that have this just-right challenge lead to success and engagement and successful outcomes based on the interaction being not too difficult and not too easy (Bundy & Koomar, 2002). Consequently, these activities consist of moderately challenging tasks rather than highly challenging ones that can cause anxiety (Rigby & Rodger, 2006). Play is known to be highly related to an infant's sense of agency and control over the environment (Wohlwill & Heft, 1987). Therefore, a just-right environment aims to enable the infant to achieve mastery as a core aspect of play interactions.

What is novel about this research?

From this summary of key findings, we can consider what is novel within them and what they might contribute to the research and practice community:

From an Irish perspective:

- Researching the physical environment has been an under-explored aspect of early childhood, specially in Ireland. This study has focused on the physical to foreground its place in early play and learning in the home. In this way it is a novel study.

From an early childhood perspective:

- Infant space play is a finding that identifies the varied functional ways an infant uses the environment and contributes to our understanding of space play in relation to complexity, variability and availability. It includes aspects such as floor and platform play, which informs play workers in designing play spaces or in enabling carers consider different ways to provide variety in play spaces.
- Play with objects highlighted the role of the ordinary, everyday materials of the home in providing rich learning opportunities. Professionals can draw from these findings to broaden the perspective of play beyond the use of toys and to encourage parents to value the ‘power of the ordinary’.
- A just-right environment: This study has highlighted how even five infants can present with individual trajectories of play transactions and development. In each setting there were varied influences including the physical environment. While studies have foregrounded the sociocultural environment primarily to

date, this work now presents some insight into the role of the physical also to guide professional practice in aiming to provide a just-right environment.

- Parental reasoning: this is a finding from this study which grew from existing literature on professional reasoning, which names and frames what parents were experiencing or explaining in their interviews. It provides a way of considering what influences parents' decision-making processes and actions, and has potential for enabling more effective family-centred practice in home environments.

From an occupational science perspective:

- Using an affordance approach has not been done for the study of home environments of infants to date in occupational science. By developing a sample taxonomy for space and object affordances of infants in the home, a greater understanding of infant play from an occupational science perspective can be developed.
- This study contributes to occupational science by conceptualising the critical dimensions of infant play, thus deepening our understanding of play as occupation. This is underpinned by a child-centred approach to research, but also results in child-centred findings that respect the simple to complex range of interactions that infants enact in their daily lives, irrespective of their age or level of ability.
- From an occupational science perspective, by using a transactional approach with the physical environment, we are saying that occupational development and

learning are not only socially constructed but also physically constructed through dynamic interactions between the child and environment.

HOW DOES IT CONTRIBUTE? – A LOOK TO THE FUTURE

This study has explored the physical nature of childhood from the perspective of five infants in contemporary Ireland. In doing so, it provides important insights into early play in physical environments of the home. Findings highlight specific characteristics of infant interactions with the physical environment that may be transferable when considered from an Irish sociocultural setting. For example, each infant demonstrated a similar progression overall during the year in play development, and in how that determined space use. Consequently, floor play and platform play appear to have some generalisable characteristics. Equally, each family demonstrated their use of routines and rituals that were specific to themselves, but had some common features.

These elements can provide a valuable contribution to ECCE practise for those who work in the home and with families in Ireland. Findings from studies of home environments have informed early intervention programmes internationally. For example, research on routines and family contexts have led to a change in focus in Early Intervention services in the USA, led at a policy level where legislation supports Naturalistic Learning Environments (NLE) for infants (Dunst, Bruder, Trivette & Hamby, 2006).¹³³ Families are supported to develop sustainable routines within their communities, with the aim of supporting an effective family social ecology (Weisner,

¹³³ Hence, there has been a shift away from centre-based, weekly interventions for children with special needs.

Matheson, Coots & Bernheimer, 2004). Value is placed on the context of a child's daily life (Dunst, Bruder, Trivette & Hamby, 2006) and on the everyday activity settings as places for authentic and effective interactions and learning opportunities that emphasise competence and mastery (Dunst et al., 2001). Research in NLE has found that everyday activities as learning opportunities for children are more effective than the introduction of curriculum-based, intervention activities into the everyday activities (Dunst et al 2006). Although similar programmes are not the focus of development here in Ireland, early intervention is a developing area of professional practice in occupational therapy, and needs to be guided by similar insights into family routines, and everyday settings to provide effective services for infants who are not developing typically.

Other studies of the home environment have been used to also inform preschool provision in early childhood settings. For example, home-based settings were included as part of the Effective Preschool and Primary Education (EPPE) study in England and Northern Ireland (Melhuish et al., 2006; Sammons et al., 2004).¹³⁴ This informed further research on the influences of home settings on learning in Scotland (Melhuish, 2010).¹³⁵ Overall, research on Home Learning Environments (HLE) has identified that what parents do with their children is more significant than who they are or their occupational or educational background. Best outcomes for children related to the frequency of being read to, being taught letters and numbers, painting and drawing (Siraj-Blatchford, 2009) thus confirming a strong link between the home learning environment and cognitive development (Melhuish, 2010). Overall, parents who

¹³⁴ The EPPE project is a longitudinal study of over 3000 children between the ages of 3 and 11 years, following their social, cognitive and behavioural development.

¹³⁵ Nine activity measures were included to augment the HLE index from EPPE and consisted of items such as the presence of books and DVD's in the home, and the number of days watching TV each week.

actively engaged in learning activities with their children significantly influenced their social and intellectual development (Anders et al., 2011).

In both these examples from health and education, key elements are identified that support a **just-right environment** in different ways, from an activity level (e.g. frequency of being read to) and a participation level (e.g. family and community routines). However, both take a view of learning that prioritises the social environment. Yet the physical environment in this current study was critical in enabling infants learn about the world and develop competency in and mastery of their environments. There is an argument for expanding on the current view of home environmental research to foreground the physical as well as the social in order to further develop our knowledge. Although this study is limited in its capacity to identify the impact on learning, it contributes to the gap in research on the physical environment by describing play in home environments and by highlighting what changes were occurring over time. It asks important questions about the role of the physical environment in influencing learning and highlights the just-right component, whereby the emphasis is placed on tailoring to individual needs. Further studies are needed to continue this work and explore more specifically how these changes occur.

Another aspect that is important across early childhood settings is the issue of a healthy childhood. While health was not a primary concern of this current study, findings have the potential to contribute to practice from a health-promoting perspective. For example, a healthy childhood is highly linked to outdoor play as we have seen. Yet this study has shown that outdoors is not a place that is considered for play for these infants specially during the winter months. Findings showed that parents increased their orchestration of outdoor play when they had facilities for their child to play, along with having outdoor

activities to do. This guides practitioners to consider how to support families to develop more outdoor routine tasks which then might support an increased use of the outdoor spaces. In addition, by considering the outdoors from an affordance perspective, practitioners can be supported to examine outdoor spaces and develop recommendations specific to the family and infant needs.

In relation to health and activity in Ireland, health promotion for children has begun to look at health attitudes and behaviours to identify factors determining children's occupational patterns (NicGabhainn et al., 2007). Findings have supported the need to include environmental contextual perspectives when considering the child's activity. However, physical activity appears to be the focus of health promotion rather than play. This approach seems to overlook the meaning of occupation and of place, and emphasises an adult perspective of exercise primarily. By viewing a healthy childhood in terms of play occupations and environmental transactions, a new way to view health promotion can be considered which could provide new opportunities to enable health and well-being for children in their environments. Furthermore, this is supported by research on family routines. The World Health Organisation has reported a link between habits of sedentary lifestyles continuing from childhood to adulthood (Cavill et al., 2006). Therefore, developing good habits in early years for outdoor activity is more likely to influence overall health long-term and is recommended for early care and education programmes (Deiner & Qiu, 2007). Consequently by approaching families with greater insight into their routines and values, alongside an analysis of how active play is supported by the physical and social environment, an approach to health and well-being can be developed from a child's perspective.

This study also identified some strategies that parents used for developing their parenting skills. Literature on social capital was consequently identified and given that social capital has been viewed as one of five determinants of family well-being (Farrell et al., 2004), it is important to consider how this process shapes resource provision for families (for example, in how to promote parents' knowledge of play and child development). All of the parents in this study spoke of networks of family and friends' being their primary source of knowledge yet this is different from government provided community supports and was a surprising finding in the light of contemporary living with internet and social networks being so prevalent. It highlights the need for practitioners to consider what resources families access primarily before designing resources or materials to support play and learning and is an area that needs further exploration.

Finally, the concept of a just-right environment supports occupational therapists to provide services in family-centred ways for infants with special needs particularly in home-based settings. By using an affordance approach therapists can consider the functional use of objects and spaces in the home as a backdrop to designing individualised, authentic interventions to maximise play opportunities in the home. The concept of parental reasoning supports therapist to increase their insight into how families orchestrate play occupations. Furthermore, by increasing their understanding of the home as a dynamic, transactional place, their ability to provide contextual interventions will be improved. All of these strategies provide opportunities for strengthening practice. Replication studies with infants with special needs would be important to develop this work further.

LIMITATIONS OF THE STUDY

The study is limited in a number of ways. Firstly, ethnographic research cannot capture the fullness of daily life, as this is likely an unachievable task. Whether it supports a good-enough approach to the study of infants play in the home is open to question. This study only sampled once a month yet we know for example, that infants' motor skills develop on a weekly basis during this stage of their lives. It is likely that opportunities were missed not only from lack of weekly visits, but also from not sampling across different times of the day.

Secondly, the research was also limited by way of its relatively small sample size of five infants and their mothers (rather than fathers), who are based in one area within Ireland. While the infants were all under the age of two, the goal initially was to include five babies and five toddlers. This however was not physically possible to manage each month by the individual researcher. Consequently, the sample group was one of mixed ages. Although this added richness to the study in terms of exploring interactions over a longer age-span, it reduced the depth that would have been possible had the sample group included five infants the same age, as this would have supported stronger analysis and theoretical validity.

Thirdly, these families represent typical Irish families in many ways based on demographic information that shows they form part of the majority groups (for example, 62% of Irish mothers have completed 2nd level education) (OMCYA, 2010b). Consequently, however, they do not represent a varied range of families from across the spectrum in Ireland. It is limited in that the families involved come from a shared socio-economic group. However, for many studies, it is recommended to aim for commonality

rather than broad differences in participants in order to explore similarities as well as differences (Hammersley & Atkinson, 2007).

Fourthly, as noted by Spitzer, the validity of a study based on observations to learn about infants' occupations and experiences is questionable, as such a study is '*an attempt to put words to a nonverbal experience, one that lies within and between individuals*' (Spitzer, 2003a, p. 70). So the study is limited by the difficulties in accessing an infant's world. As noted above, the difficulties for the researcher lay in trying to put words on observations that gave due regard to the meaning within the interactions being observed. In doing so, there is a risk of meaning being lost in translation between the doing and the transcribing.

In order to address these limitations, future research would be beneficial in regard to specific aspects. Given the limited involvement of participants at birth and at one-year of age at entry to the study, a replication study with more infants of the same age, and of diverse socio-economic groups would be important. Furthermore, more varied and frequent time sampling across families would allow for more depth and breadth to future studies. In regard to outdoor space-use, further study of how outdoor spaces and places are used would be beneficial. In this study, limited use of the outdoors was evident yet some emerging evidence about the need for outdoor routines was highlighted. However, further exploration of this proposal is needed in order to increase the confidence in these findings. Finally, although this study acknowledged multiple influences on infant home play, little was known about daily play experiences in other settings where infants spent time each week (e.g. childcare) and how they might have influenced home play. Further studies across settings would expand our understanding of these important places and how they might influence infants' lives.

To conclude:

This thesis set about exploring the physical environment of the home as a learning environment for infants. With this focus it adds a unique dimension to existing research on infants' lives that has been an under-explored area of research not just nationally in Ireland but internationally also. It has asked important and valuable questions on the nature of play in home settings from a physical perspective, that gives due attention to transactions between infant-and-environment. This study has achieved its goal of exploring and identifying ways in which infants develop and learn to negotiate objects and spaces of everyday life in the home, from a play perspective. In doing so it has illuminated the role of the physical environment in play, but also has reaffirmed the multidimensional nature of play as a dynamic transactional process. The concept of a just-right environment captures that complexity and individuality and serves as a way forward in considering optimal learning environments for infants.

From this study I have seen a different perspective of play as a process where the infant demonstrates agency, mastery and self-fulfilment that comes from doing and being in the physical and social world. In this journey I have come to realise that we undervalue play in our work and need to fight for change- to argue for the right to scaffold and enable play engagement to take place in our work and defend our choices in doing so. We already have a model for this in relation to a sensory integration approach, but even within this therapy approach, play tends to be undervalued. We need to revisit and reengage with contemporary play research to ensure that play as mastery is not lost in our work as occupational therapists.

Finally, in relation to play environments, I have come to realise that the infant-environment relationship can be conceptualised as transactional, with the physical

environment having agency. This leads me to a new understanding of this relationship: that there is a physical world of engagement (and not just a social one) and hence that infants' worlds are not only socially constructed but also physically constructed through dynamic interactions between the child and environment. The physical environment has become a story about the ordinary as extraordinary; but most significantly, the physical learning environment has become a story about the **power of the ordinary**.

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APPENDICES

APPENDIX A: PLAY THEORIES OVERVIEW

Classical theories of play developed in the nineteenth and twentieth century to explain play and represent specific influences of the era. Examples include surplus energy theory (Spencer, 1855), pre-exercise theory (Groos, 1898), recapitulation theory (Hall 1904, 1906) and Lazarus recreation or relaxation theories (1883) (cited in Parham, 2008, p. 7; cited in Weisler & McCall, 1976, p. 495). These theories were closely linked to what the perceived purpose of play was at the time- that it is related to having excess energy (surplus energy theory) or to a deficit of energy (relaxation theory). From the 1930's to the 1960's, researching play from a normative perspective was the emphasis of developmental theorists (Knox, 2008) with a focus on description and correlation to understand differences across gender, age, race, and different play stages. This was informed and shaped by movements such as the playground movement in the United States (Sutton-Smith, 1983), and evolved into a focus on developing ways of working with children with special needs, to develop their abilities through play. Cognitive studies came to the fore within this phase with an emphasis on symbolic play for example as it evidenced cognitive development. The focus of this research was typically on play as a secondary aspect to the main concern: e.g. Piaget's work on cognitive development, Vygotsky's work on the social nature of learning or Parten's work on social development (see next section). In this way play was seen as a means to an end with play being a peripheral concern rather than a central one (Humphry & Wakeford, 2006). Findings from play research of this era came primarily from experimental designed studies rather than naturalistic ones with the main age range for studying play being from two to six years (Smith, 2010).

In a review of research on play in the twentieth century, the largest body of work was in the psychodynamic area, which peaked in the 1950's (Sutton-Smith, 1983). Play was considered as it relates to emotional development, character projection for example in doll play, play diagnosis and the use of play to explore emotional challenges in life (Sutton-Smith, 1983). Freud and Erikson looked at play from this perspective. Though Freud did not theorise about play, he developed a way of approaching child development from an emotional and ego developmental perspective (Parham, 2008). In mapping out early child development stages, the infant and baby stage is described as one where the child focuses on gratification seeking (both oral and anal) with the beginnings of the development of the ego (Edwards & Christiansen, 2005). Freud's approach was based on psychosexual aspects of development, as compared to Erikson who took a more psychosocial approach (N Hayes, 2010). Erikson viewed object play as a means through which children develop mastery of their feelings through symbolic representations of life (Erikson, 1977) resulting in an approach to the use of play in therapy with children, as described by Axline (1969). In this approach, play is seen to provide the medium through which the child detaches also from the parent, through exploration of the environment. This takes place only when the child has already formed a strong bond in a trusting relationship, and is supported in a safe and secure context to develop autonomy (Christiansen & Baum, 2005).

As the century progressed, there was evidence of a more integrated approach to theories of play development. For example, Vygotsky approached play not just in terms of cognitive development, but also as being emotionally important due to its relationship to mastery and self-confidence (Vygotsky, 1978). This approach bridges both fields of cognitive and psychosocial domains, with the emphasis on both affective and cognitive aspects of development (Smith, 2010). Vygotsky's perspective on the social nature of

learning led to a realisation that play can be also viewed as a social construction. Theorists have considered that some of Vygotsky's work emphasises the child in a passive rather than active role- for example, in his theory of the Zone of Proximal Development. Consequently, researchers such as Rogoff and Valsiner have moved towards ecological studies of learning and play development, and consider it now from a co-constructionist perspective, where emphasis on bidirectionality, interaction and intersubjectivity are central (N. Hayes & Kernan, 2008).

Play research in Occupational Science

Despite play being identified as being a core aspect of healthy occupation from as early as 1922, this occupational perspective receded and did not come to the fore again until research and writings from therapists such as Mary Reilly (1974), and further work that helped form and expand on the new science of occupation as it was initiated in 1989 (Hocking, 2009). In this developing field, play is named as a core element in the classification systems of occupations across the life span. Occupational science requires multiple disciplinary perspectives to develop a strong basis in the theory of play as an occupation (Parham 2008) that includes sensory integration, neurodevelopmental theory and motor learning among others (Burke, 1998). It also includes sociocultural perspectives from across the world, where it is acknowledged that play is viewed and valued differently according to cultural values, customs and norms (Bazyk et al., 2003; Parham, 2008). Furthermore, it also argues for specific focus on the physical environment, and activity, as a unique focus of researching play occupations (D. Pierce, 2009).

The earliest research in occupational science on play can be attributed to Reilly (1974). As we noted in the sensorimotor stage section above, Reilly identified an occupational

behavioural frame of reference that describes play as part of the process of learning and development that's a continuum from child to adult, from play to work: hence the term occupational behaviour. In responding to this reality of the field of research on play, Reilly used a cobweb metaphor to define it, to acknowledge the complexity within the field (Reilly 1974). Reilly used a systems approach in her use of a web to describe play-drawing from literature from anthropology, evolutionary psychology, psychology and sociology (Parham 2008). Reilly's work was the springboard for others who followed her footsteps in researching play. Takata (1974) and Knox (1974) both went on to develop play assessment tools for therapy: Takata's Play Epochs and Knox Play Scale. Since then, perspectives have moved from occupational behaviour in general towards an occupational development view of children's play specifically (e.g. Humphry, 2002; Wiseman, Davis, & Polatajko, 2005).

Since the early 1970's occupational science research with young children and families has continued to expand. The environment as it influenced play was explored in preschoolers at preschool (Knox, 1997) and in infants and toddlers in the home (D. Pierce et al., 2009). In her observational study of preschoolers, Knox identified four main types of play that included space management (how the child learned to move his/her body and negotiate space), material management (how the child learned to play with materials), imitation and participation (Knox, 1996). D. Pierce (1996) and Schneider (2009) researched object play as we have seen earlier in this chapter. Furthermore, others have studied play and children with special needs, for example Baranek et al. (2005) and Spitzer (2003b) both researched play in children with autism, others have studied play in deprived settings (e.g. Daunhauer & Cermak, 2008; Daunhauer et al., 2010). These examples demonstrate the focus on child-environment relationship with attention to the physical and social environment.

Play and playfulness has been a more recent focus of research. For example, functional play has been researched (Bober et al., 2000) and pretend play also (Stagnitti, 2007; Uren & Stagnitti, 2009) while Bundy has led the field in relation to playfulness, resulting in the development of new tools for observing play with the Test of Playfulness and Test of Environment Supportiveness. These tools have been used in further studies of playfulness and play environments as we have seen earlier in this chapter.

While occupational science research values the functional contribution of play to child development, it also values the meaning for the child: *'play is a vehicle for meaning'* (Parham, 1996, p. 78). Parham contends that as observers we cannot assume to know whether an activity is pleasurable or not, as we are not experiencing it the same as the child (Parham, 1996). Spitzer's work on play has provided a framework for considering meaning in play for children who are non-verbal, and identified the need to consider intersubjectivity in co-occupations between child and other players (Spitzer, 2003b). While enjoyment may not always be apparent, by observation alone using an occupational science approach to understanding play helps us to see that it is the individual's experience of the activity that determines whether it is enjoyable, and not the observer's assessment (D. Pierce, 2001). Overall, an occupational science perspective of play is that it can be both productive as well as pleasurable: that it can be embedded in obligatory tasks and require effort (Humphry, 2002). While play may be defined as pleasurable, it can still be productive and therefore there is no dilemma in arguing that play is not work (Parham, 1996): play is the work of the child (Montessori, 1967) and play is *'serious business'* (Bruner, 1976, p. 20).

APPENDIX B: TABLE OF COMMONLY USED CATEGORIES OF PLAY

Types of play/ sequence	Source	Perspective or taxonomy focus	Age group	
Play with language Play with motion Play with interaction Play with objects	Garvey (1990)	Social and physical interaction	childhood	
3 stages of play development: • Practice games (sensorimotor/exploratory) • Symbolic games • Games with rules	Piaget (1962)	Cognitive	Infancy to middle childhood	
Functional Constructive Pretend (dramatic) Games with rules	Smilansky (1968)	Cognitive	Smilansky: 3-5 year old preschoolers	
Unoccupied Onlooker Solitary Parallel Associative Cooperative	Parten (1932)	Social	Parten: preschool children aged 2-5 years	
Unoccupied Onlooker Solitary Parallel Group behaviours	Occupied Constructive Exploratory Functional Dramatic Games	Rubin et al. (1978)	Combined cognitive and social from Smilansky and Parten	Rubin: preschoolers age 4 years.
Innate Intersubjectivity Theory: Intersubjectivity Games of person/person-person-object games Secondary intersubjectivity	Trevarthen (1998)	Social	Infants and preschoolers	
Functional play with pretence Substitution with objects Assigning absent attributes Imagining absent attributes	Barton & Wolery (2008)	Pretend Play taxonomy	Children birth to 12 years with disabilities	
Exploration vs. play behaviour: Epistemic play Ludic play Games with rules	Hutt (C Hutt, 1979)	Cognitive	Preschoolers aged 3-5 years	
Exploratory play Relational use of objects Functional (conventional use of objects) Symbolic play	Belsky & Most (1981)	Object play taxonomy	Infants from 7 ½ to 21 months of age	
Gaze and visual play Mapping and ranging home space Stationary object play Mobile object play	D. Pierce (1996)	Developmental levels of play & the physical environment outlined	Infants: birth to 18 months	
Rhythmic stereotypies Exercise play Rough-and-tumble play	Pellegrini & Smith (1998)	Physical play	Infancy to middle childhood	
Brief blows/contact Grab at Restrain Grappling	Boulton & Smith (1989)	Rough-and-tumble play:		

Boxing Kung-fu Colliding Spinning and swinging Hit and run Chasing Runs past			
Creative play Games with rules Language Physical Pretend	Aistear Irish early learning curriculum (2009)	Whole child	Birth to 6 years

APPENDIX C: INTERVIEW GUIDE:

To explore the meaning of what the child was doing (member checking): the following questions may be asked:

- Was this playtime typical of what your child is doing each day? If not why not? If yes, why?
- What was he/she doing do you think?
- Why do you think he/she plays like this?

To identify changes in patterns of engagement in the physical environment since the previous visit, the following questions may be asked:

- On a typical day, can you tell me where in the house does your child play? Rooms? Places within rooms? What position? (e.g. sitting lying,) favourite places?
- Are there any areas in the house where your child is not allowed to play? Why?
- Can you tell me about what you do to prevent your child from playing there?
- What types of toys/objects/ things does your child play with?
- What do you think he/she likes about them?
- How do you organise the room/ play area so he/she can play with these things?
(e.g. clear away other items? Keep a play room ready for play? Bring toys to him/her)

Indirect prompts

- Can you tell me more about this?
- What other things do you think are important?
- Can you describe that in more detail?

APPENDIX D: TOPIC GUIDE

TOPICS FOR QUESTIONS- RELATED TO RESEARCH QUESTION:

CULTURE:

Values, aspirations, expectations, practices, competition versus co-operation, beliefs, religious values, parents' expectations, goals for the children

Values governing different approaches to discipline, gender roles, ideas and beliefs about health, learning, play, development

'Scripts' of sleeping, feeding, playing, Individualism versus interdependence (reflects a specific moral and social order) - serves as a route I which children come to know and participate in a culture

PHYSICAL ENVIRONMENT:

How spaces are used and how they are liked to be used, what kind of limits are put on space use, what is important to you in the use of space, in the use of toys

How is he different this month, what is he doing differently, what are you doing differently to help this or limit this? Do you change?

How is the house used differently this month if at all?

SOCIAL ENVIRONMENT:

What routines do you get involved I with the baby each day, week. Celebrations, etc –how do you celebrate? Role of the baby in this? What is the custom of visiting?

How do you interact with the baby? What are your ideas about learning, play, development, space, toys, interaction?

PERSONAL CHARACTERISTICS:

How does his personality affect his play and use of space?

What is he doing differently, how did you notice it, what was the moment, how did he learn it? What helped him learn it? How often has he done it since? How does his personality impact on his play?

How is he responding to the world- negatively or positively, what appeals to him, does he approach things or watch, show caution , persistence, self-soothing, how does he respond to novel things? Is he prone to distress?

What is his favourite thing to do?

Tell me about meal times, bath times, pets, dressing and undressing, walks, chores, bedtime stories, play group, playing with brothers and sisters,

Was there anything you thought of since we last met?

APPENDIX E: PARTICIPANT FAMILY PROFILES

Child & age at entry to study	Family	Extended family-who is regularly involved in their lives?	Community, social, cultural links
Karen 1 month Youngest of 3 children. Has an older sister and brother	Mother: Maria (in her 30's) Part-time hairdresser School: Leaving certificate level Father: Dinny (in his 30's) Full-time farmer School: leaving cert level Erin: aged 5, Tadgh: aged 3 Live in dormer bungalow on farm in rural west-cork	Live beside grandparents- Dinny's family farm Live 10 miles from where Maria grew up-her father died 2 years ago and she visits her mother every week in town nearby	Local national school for Erin Church- each Sunday? Irish dancing classes Swimming classes
Hannah 1 year 1st child. Has 1 new baby brother	Mother: Clare (in her late 20's) Special education teacher- in city school School: 3 rd level degree Father: Kevin Live in terraced house along busy road, old part of Cork city	Both sets of grandparents live in Cork city area Hannah visits with her cousins in her nana's house every week.	Hannah goes to the Crèche each day
Sarah 1 month Second child. Has 1 older brother	Mother: Vicky (in her early 30's) Auctioneer School: 3 rd level degree Father: Michéal Shop-keeper-men's outfitters Michael: aged 2and half Both work in the town nearby Live in 2 storey, semi-detached house in outskirts of large town in Kerry – small housing estate	Both sets of grandparents live in same town See both of them every weekend	Michael goes to crèche nearby Meet with friends for coffee every week (with babies) Local playground also popular
Joe 1 year Second child. Has 1 older brother	Mother: Aisling (in early 30s) Personal assistant- semi-state body School: post graduate certificates (post 2 nd level) Father: Sean Works in same semi-state company on shift work Martin: aged 3 Live in detached 2-storey house in large housing estate in small town within commuter distance of city in Cork	Grandmother on mothers side died the year Aisling got married- she is close to her father who regularly helps with childminding Sean's parents live in next county but visit them often Close to siblings	Boys both go to a local childminder who also minds their cousins so they get to play with their cousins every week Visit local children's playground regularly Local soft-play indoor area also
Amy 1 year 1 st child	Mother: Aileen (early 30's) Occupational Therapist School: college degree Father: Muiris Butcher working in town supermarket School: leaving cert Live in dormer house about 6 miles from Tralee town-built it themselves Both work in large town in Kerry	Both sets of grandparents live nearby Aileen's mum helps with childminding Aileen's father sings sessions and loves to sing to Amy- she does percussion!	Amy goes to childminder and to nana for childcare. Goes for walks everyday to walk the dogs and the baby. Walk on beach, down the lane and go to coffee shops in town that are welcoming for families Gets advice and help from colleagues at work

APPENDIX F: Examples of interview and video transcripts, initial and focused coding, and summary of categories

KAREN AGE 3 MONTHS

Meaning unit	Initial code	Focused code or category	theme
<p>m: we christened her last week- Sunday H: ooh, did ye have a bit of a celebration? M: well we had just the family kinda- mind that now Eric cos we don't want that to fall. We just had em-don't touch it- we just had em... a buffet. H: did ye have it in the house? M: noooo, no, sure where would I put them! If it was the summer or something like that</p> <p>H: so how was she on the christening then? M: oh she was great. She slept all day really.</p>	<ul style="list-style-type: none"> • Having a christening • Family celebration for the christening in a local restaurant • Enjoying the christening because the baby slept all day and was 'great' p.3 • Busy trying to fit everything in- christening was the day after Halloween • Having a christening on a Sunday was special when everyone isn't working- this happens in country churches but maybe not cities. • Rituals= christenings, 6 week check up, Halloween (going along with family) 	<p>RITUALS, CUSTOMS & CULTURE</p>	<p>Socio-cultural setting/context</p>
<p>M: oh, we had to go out trick or treating H: did ye go trick or treating around here? M: no we went to (local village)- H: what was that like? M: great. H: have ye done that each year now, is that. M; just in the last few years. My mother would have lots visitors</p>	<ul style="list-style-type: none"> • Not going trick or treating from home for Halloween • Going instead to visit nana in local village- and trick/treat in nanas house (not calling to other families homes) 		
<p>Fieldnotes: Sarah Both parents from same town so both sets of grandparents live nearby and form part of the family routine at weekends: making sure both families are visited.</p>	<ul style="list-style-type: none"> • Nearness to family members • Visiting grandparents each week • Family routines 	<p>VALUING FAMILY CONNECTIONS</p>	

AMY SAMPLE TRANSCRIPT AND INITIAL ANALYSIS OF OBSERVATIONS: AGE 14 MONTHS

TRANSCRIPT SAMPLE WITH VIDEO CODES:

In family room beside table with Amy and her mum Aileen. Dad is at work at table

§<11153>Mum pulls over cake for her to look at

§<27013>reaches to get off lap

§<32619>a view of her drinking cup with easy to grip handles

§<38014>Amy reaches back to take cup from me and smiles when mum asks if she wants a drink- she seems to know language really well this time and understand what is being said to her

§<60345>mum shows her the pen for writing

§<64381>holds her cup in her hand while she looks about

§<65100>grunts and smiles as if trying to join in the chat and then she urges her mum to let her off the lap

§<120590>the dog is up on the window sill just outside the window where Amy can see her

§<127934>up in her mum's arms talking about the dog and looking at sally and looking at us to share the looking together!

§<167749>Mum pulls her up on the lap to look at the book together as Amy wants to show her the pictures

§<176181>gives me the book saying tata- I take the book and she talks /grunts etc

§<200518>the baby food book that Amy likes to look at!

§<210573> a shot of the high-chair

§<244070>Amy on mums lap looking at the pictures again

§<255448>reaches to get off the lap

§<274932>Amy is at the wall and reaches for the window sill to pull herself up to standing

§<281329>holds onto the window sill and reaches for the card that is there with her right hand

§<291584>begins to cruise along the window sill towards where the dogs are outside the window

§<316819>Amy points to things she sees outside and says bababa and aaaah (trying to get the message across)

§<329580>reaches for the small ball on top of a bowl and says bababa

§<349814>mum gives Amy the ball

§<363691>she holds it and carefully goes down on the floor while holding it to play with it

§<374337>crawls over to mum and goes uhhh, uhhh to hand it to mum and reaches out to give it to mum- she has a book again in front of her which seems to have caught her attention

§<401217>back up on mums lap

§<436636>now at coffee table as mum has gone over to make coffee- Amy takes block box and goes eeh eeh for me to help her throw them out..

§<447713>Amy pushes box towards me and looks at me requesting help. Mum says tip them out but Amy still waits for help- mum then takes the box and places it on its side so Amy can tip it out herself the rest of the way . Amy tries to lift the box and with mums help both tip out the blocks.

TRANSCRIPT CONVERTED INTO INITIAL CODING

CHILD	ACTIVITY	SOCIAL/MOTHER/BROTHER
<ul style="list-style-type: none"> • Reaches to get drinking cup to drink • Smiling in response to mum asking if she wants a drink • Grunting noises, gestures, words now that she can say • Points to where the dogs are • Points to ball on window sill • Holds ball and carefully sits down with it in her hand • Crawls to mum and hands it to her • Waits for help to tip out blocks-looks at me and waits! • Crawls over to play mat on floor- gets block and brings it back • Watches mum stack block but takes a block instead and hands it to me • Looks for something to eat- points to biscuit tin • Reaches for crayons • Crawls over to toy train and presses buttons to make music play • Looking out of window saying moo at the cows • Standing at high chair to push about • Looks back and waves bye-bye • Crawling around kitchen island and laughs-hides-laugh-peeks • Stops along corridor upstairs to look at socket-night light • Points to teddies in bedroom (asking for them) • Toy horse and ball pool-she climbs in to ball pool and takes out balls 1 by 1 to carry over to car • Places 1 on car and says vroom-vroom 	<ul style="list-style-type: none"> • Eating with us • Pushes herself off the lap • Cruises along low window sill to look out at the dogs • At coffee table playing with blocks • Tumbles them out of box • Banging blocks together drops them on floor and watches them fall grunting as she does it! • Wants to play giving me the bricks instead of stacking them • Falls down and cries • Crawls over to mat and gets cow toy and crawls back to give it to me • Points to picture of herself on side table and looks back at me to show me • Gives me the picture and moves to get another one • Taking hats form radiator game- take 1 by 1 and give to mum and herself to put on- takes it off saying Tata and gives it to mum saying Tata-laughing at it all • Hiding and playing peek-a-boo round kitchen • Finds crumb and says num-num • Climbs stairs • Hug teddies given to her • Hears dogs barking and says bow-wow looking over at window • Carries balls across room to car • Carries toy horse across room pushing it along form place to place • Jigs about to say horsey-horsey • Stands at low table to play 	<ul style="list-style-type: none"> • Mum gives her cake at the table as we sit and talk • Mum gives her the ball she points to on the window sill • Takes ball form her and sit her up on her lap to look at a book again • Puts her down again • Mum shows her how to stack blocks but she doesn't want to do it • Mum picks her up to comfort her straight away-kiss better • Sitting on lap at table drawing • Mum asks her if she want to eat-asks where is it- Amy points to biscuit tin and mum gets it for her • Gets crayons for her that she reaches for • Carries her over to window in arms to point to cows • Mum asks what do horsey's do etc and she jigs • Sitting on lap having drink looking at book • Mum asks will I chase you and she laughs and heads off • Asks will I show Helen stairs and she heads off to stairs • Stands behind Amy who climbs stairs • Mum pulls teddies off shelf to give to Amy • Mum carries her over to high window to look out at dogs barking • Carries her back down stairs • T o front room and ball pool

<ul style="list-style-type: none"> • Puts toy horse on car and says vroom as well • Takes out toy animals form tin at low table • Sits on table playing 		
<p>TOYS/OBJECTS:</p> <ul style="list-style-type: none"> • Drinking cup • Pen • Magna doodle • Crayons • paper • Dogs outside the window! • Books-recipe books/ baby books • Building blocks • Play mat on floor • Drawing on paper using pen at table • Toy box with toys on floor • Toy train exploratory electronic toy with buttons to press • Hats on radiator and gloves for dressing • Teddies upstairs in bedroom • Toy rattle/squeezy toy from Chinese Restaurant! • Books of nursery rhymes • Toy horse on wheels • Little ride along car • Magna doodle • Toy animals-horse, cow, sheep • Balls form ball pool 		
<p>EQUIPMENT:</p> <ul style="list-style-type: none"> • Cot • Ball pool • High chair to push around • Buggy to sleep in during the day • Night light in wall socket 		
<p>SPACE:</p> <p>Use of space all around the kitchen- from the floor mat mostly by the couch to the trolley-to the kitchen central island and all around it- to the high chair and kitchen table-to mums lap</p>		

FIELD-NOTES:

FAVOURITE THINGS TO DO:

- Climbing on couches
- Squeezing through places to hide
- Hide and seek-peek-a-boo
- Giving things to adults and saying Tata
- Knowing she likes to practice new things like climbing up the stairs
- This month full of gestures and communication

ROUTINES:

- Sleeping really well through the night despite being sick
- Being a better baby for self settling now
- Using buggy even indoors when the day is too wet to go out

RITUALS/EVENTS:

- Missing having her shots due to being sick
- Christmas for her 2nd time- having some rituals around Santa but not much
- Meeting new baby cousin hopefully over Christmas

VALUES:

- Not being too fussed over Christmas for such a small child
- Different views between both parents-dad likes the fuss
- Not liking going out to work when baby is sick
- Wanting to teach her to be safe climbing down the couch and down the stairs

WORRIES AND CONCERNS:

- Health concerns- Amy being sick results in Aileen being extra cautious due to her own history of asthma
- For her safety in climbing- not to stop her but to make it safer by teaching her to climb safely and to always be with her when she is moving about

COMBINED CODES FROM INTERVIEW AND VIDEO TRANSCRIPTS AND CODING:

LIST OF CORE CATEGORIES AND SUBCATEGORIES FROM ALL FIVE FAMILIES FOR THE 12 MONTHS OF THE STUDY

TO DO WITH SOCIAL/CULTURAL/COMMUNITY/WORK SETTINGS

- EXPERIENCES OF RITUALS, CUSTOMS & CULTURE
- NATURE OF EXTENDED FAMILY AND COMMUNITY TRANSACTIONS
- WORK INFLUENCING HOME

TO DO WITH THE ENVIRONMENT:

- EXPERIENCES OF PLACES OUTSIDE THE HOME
- HOW PLACES ARE USED IN THE HOME:
- HOW OUTSIDE PLACES ARE USED AT HOME (garden etc)
- MATERIAL CULTURE OF CHILDHOOD
- NATURE OF TOYS/OBJECTS- CONSIDERATIONS AND CHARACTERISTICS- that invite attention, exploration, manipulation, elaboration, imagination/ affordances
- ORCHESTRATING THE ENVIRONMENT
- PLACES TO SUPPORT CARE ROUTINES:
- PLACES TO SIT, LIE OR SLEEP
- PLACES TO SUPPORT PLAY/ INTERACTION

TO DO WITH THE FAMILY-

- VALUES AND INFLUENCES REGARDING FAMILY LIFE AND PARENTING
- BELIEFS ABOUT PLAY, LEARNING AND BEHAVIOUR
- ORCHESTRATING FAMILY ROUTINES
- COPING WITH PARENTING
- PLAY CHARACTERISTICS OF FAMILY

TO DO WITH MOTHERING: MOTHERING OCCUPATIONS

- ANTICIPATING THE FUTURE CHILD
- BEING VIGILANT IN OBSERVING, INTERPRETING & ANTICIPATING BABY'S NEEDS
- BEING RESPONSIVE & ADAPTING TO THE CHILD'S NEEDS
- BECOMING A MOTHER
- COPING WITH PREGNANCY AND PHYSICAL DEMANDS POST PREGNANCY
- COPING WITH CHILD HEALTH ISSUES (added Jan11)
- DEVELOPING MOTHERING OCCUPATIONS
- DISCOVERING THE NEW PERSON

- IDENTITY WORK FOR MOTHERS
- ORCHESTRATING PLAY IN THE HOME
- SUPPORTING DEVELOPMENT OF CARE ROUTINES (MOTHER):

TO DO WITH THE CHILD: FROM BEING TO BECOMING TO DOING

- EMERGING BABY CHARACTERISTICS
- CHARACTERISTICS OF THE CHILD- disposition, resources & demand characteristics/attention/persistence, task-directed behaviour
- ACTING ON PHYSICAL, SENSORY, EMOTIONAL NEEDS
- BEING ABLE TO MAKE NEEDS KNOWN TO CARER
- DEVELOPING CARE ROUTINES (BABY/CHILD)
- ENGAGING IN FAMILY CARE ROUTINES
- BEING IN THE ENVIRONMENT
- No active object use
- FROM BEING TO BECOMING IN THE ENVIRONMENT
- BEING ACTIVE IN THE ENVIRONMENT
- BEING ABLE TO FOCUS ATTENTION
- BEGINNING TO RESPOND TO PHYSICAL AND SOCIAL ENVIRONMENT
- RESPONDING TO PHYSICAL AND SOCIAL ENVIRONMENT
- BEGINNING TO BE ACTIVE IN ENVIRONMENT
- EXPERIENCING NEW EVENTS (BABY/CHILD)
- FAVOURITE PLAY ACTIVITIES
- MOVEMENT IN PLAY
- NEW BEHAVIOURS- PLAY/LEARNING

TO DO WITH THE BABY/CHILD-TRANSACTIONS WITH PHYSICAL AND SOCIAL ENVIRONMENTS

- NATURE OF TRANSACTIONS BETWEEN BABY/CHILD AND PHYSICAL ENVIRONMENT- activity and units of analysis/ Henderson's framework of spatial engagement & action/object engagement and affordances/space affordances and space use
- NATURE OF FAMILY TRANSACTIONS-RELATIONSHIPS- RECIPROCAL PROCESSES OF SOCIAL INTERACTIONS (ALSO TRANSACTIONS WITH EXTENDED FAMILY-LISTED FIRST SECTION)- task-supporting behaviours
- NATURE OF PLAY- agency, purposefulness, intentionality/ play type, play behaviour, playfulness

APPENDIX G: RECRUITMENT INFORMATION LEAFLETS:

Dear parent/carer

INVITATION TO PARTICIPATE IN A RESEARCH STUDY:

You and your child are invited to take part in a research study. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. This process is known as informed consent. This form gives detailed information about the research study. Once you understand the study, you will be asked to sign this form if you wish to participate

Please take time to read the following information carefully.

RESEARCH STUDY:

Infant places, spaces and objects within: exploring the home as a learning environment for infants

WHAT IS THE PURPOSE OF THE STUDY?

The objective of this study is to explore, identify and record the typical activities of Cork children aged between birth and 2 years in 2009-2010. The study will help parents, child-care workers and therapists better understand what children do in their own homes. Children have very different play experiences than in the past. Researchers have found that children now spend less time at home playing and more time in child-care settings. This makes it difficult for child-care educators to know what is typical for children, and what is important for children from their home experiences. This study aims to help identify what young children do in their homes in Ireland in 2009.

WHY HAVE I BEEN INVITED TO PARTICIPATE?

You and your child have been asked to participate in order to be part of a group of families who take part. There will be ten families involved of children who are just born and children who are just reaching 1 year of age.

DO I HAVE TO TAKE PART?

It is your choice to take part or not, but your agreement to do so would be greatly appreciated. If you consent to participate, you are free to withdraw at any time.

WHAT WILL HAPPEN IF I TAKE PART?

The researcher will visit with you and your child each month for 1 year to observe your child at play. For small babies this may only be a half-hour each visit; for older toddlers it may be up to 2 hours. A video will be used to record what your child is doing, where he/she is and what he or she likes to play with or explore. As children develop and grow quickly, a visit will take place once a month to record the different play skills he or she is developing. You will be asked to share your ideas each visit about how you think he/she has changed or what you think he/she is learning since the previous month.

WILL WHAT I SAY BE KEPT CONFIDENTIAL?

All information regarding you and your child's personal details is confidential and any information

collected will be protected by an identity number. All names will be changed and pseudonyms used on any written material in reporting the study.

All information collected will be kept in a locked cabinet, which will only be accessed by me.

WHAT WILL HAPPEN TO THE RESULTS OF THE RESEARCH STUDY?

The study will be written up and presented to the Dublin Institute of Technology, Department of Applied Arts. The results may also be used for educational purposes at conferences for example or published in professional journals. The videos will be used for analysis. However, if you are happy to consent, some sample pieces of video may be used for presentations. This will not be done without your agreement and is not important if you do not agree with it.

WHAT ARE THE BENEFITS FROM TAKING PART?

Your help with this work will be important to the development of curriculum programmes for early childcare and education. There is no payment for being part of this study. People who agree to take part will be given a gift at the end of the study to say thanks: the monthly records of your child's development will be put together into a baby book for you to keep.

WHAT ARE THE POSSIBLE DISADVANTAGES OF TAKING PART?

You will need to be able to commit to having the researcher visit with you and your child once a month for 1 year. These sessions will not interfere with your holidays and other important times- visits times will be agreed between yourself and the researcher.

WHO IS ORGANISING THE RESEARCH?

The research study is being organised through the Dublin Institute of Technology and is being supervised by Dr. Noirin Hayes, Centre for Social and Educational Research (DIT).

WHO HAS REVIEWED THE STUDY?

It has been approved and reviewed by the DIT Ethics Board who has given permission to proceed with the study.

CONTACT FOR FURTHER INFORMATION:

You are invited to discuss any issues you wish with me.

My contact details are:

Helen Lynch

Department of Occupational Therapy

Brookfield Health Sciences Complex

University College Cork

College Road

Cork

E-mail: h.lynch@ucc.ie Phone: 021-4501535

Thank You,

Date:

APPENDIX H ETHICS APPROVAL

Helen Lynch
The Occupational Therapy Department
Brookfield Health Sciences Complex
University College Cork
College Rd,
Cork

Re: Assessment of your Declaration of Research Ethics Ref. 06/09

Dear Helen,

Thank you for submitting a Declaration of Research Ethics in relation to your research project "*Infant Places, Spaces and Objects within: Exploring the Home as a Learning Environment for Infants*" (Ref. 06/09).

Your application was received on 18th December 2008 and assessed by the DIT Research Ethics Committee by Chair's action on 13th February 2009.

Your application was deemed very detailed and comprehensive and ethical approval was granted to this research.

For further enquiries, please do not hesitate to contact me at raffaella.salvante@dit.ie or at 01-4027529.

Kind regards,

Raffaella Salvante

Raffaella Salvante
Graduate Research School Office

APPENDIX I: A SAMPLE OF IMPORTANT EVENTS IN THE LIVES OF KAREN & JOE 2009-2010

baby	1 month	2 months	3 months	4 months	5 months	6 months	7 months	8 months	9 months	10 months	11 months	12 months
Karen	Being fed, changed, bathed, winded, cuddled, put to sleep-routines for caring initiation into family routines Finding out who she is	Bringing her for her shots At nanas for Halloween party Christening Nanas house overnight when parents away	Visiting Santa Claus First Christmas	Being in the snow Making a family snowman! Visiting the city to see the Christmas lights	Family outing to the cinema (first time)	On solid food now Had chicken pox St Patricks day parade Tadhg's birthday party Grown out of bouncer	Family outing to the mart last Saturday Mother back to work this month	Going for a walk along the roads in her buggy first time this spring	Using a baby walker Daddy's 40 th birthday and a family celebration Being to some family days at local town events (e.g. Fleadh Ceoil or Street Carnivals in West Cork)	Being at the beach and paddling for the first time	Having barbeques out the back Playing outside a lot	Going to watch her sister at swim class every week Her 1 st birthday in two weeks time-special family event for 40 people in the home

toddler	13 months	4 months	15 months	16 months	17 months	18 months	19 months	20 months	21 months	22 months	23 months	24 months
Joe	Goes to childminder Crawling and cruising Loves balloons	Walking! Gets new chair for himself Teething	Visiting Santa Claus New shoes! Going to be at mass for Christmas day Christmas tree is up	Begins his climbing habits!	First time outside since last year to play in garden	New baby sister arrives! Been sick with chest infection this month	Easter in Nana's house in the country Wildlife park to see the animals	Garden playing every day due to fine weather Getting sandals for holidays	Has been sick again this month Went on holidays to the beach in west cork Rock-pool fishing for first time	Christening for new baby To Puc Fàda event in dad's home place	Going to Dublin to the zoo Visiting nana's grave as it is her anniversary	Mother going back to work this week Martin's; birthday next week (age 4).

APPENDIX J: MATERIAL CULTURE OF CHILDHOOD- ARTEFACTS FOUND IN THE HOME

Equipment for care and comfort routines, safety and supporting play:

- **Moses basket, cradle, cot, buggy insert**-all are used by these families at different times for their babies to sleep in.
- **Dodos** (baby soothers) are used to help settle to sleep (Hannah, Sarah, Joe)
- **Sleeping bag**- used for Sarah (baby) now that she has moved to a cradle to sleep (Dec 09)
- **High chair**- used by Joe for meals and also Amy (1 year old). Hannah uses a chair that screws to a regular table. For Amy her high chair is also used as a **Push along toy**. She likes to stand behind it and push it along her kitchen, which is a large area of open space. She does not do this with the commercial Push along toy that she has which is interesting- the high chair provides a more stable base for her to lean on and push at the same time so perhaps gives her this affordance for movement that the toy does not offer.
- **Use of PLAY PENS**: not seen in these houses but Sarah Killarney's mum has seen their use in the childminders where it is used to keep the active children away from the babies who cannot move about safely. Vicky has now gone back to work and knows Sarah is placed in the playpen at the childminders. They have toys tied to the sides of the playpen for children to play with. IN March, Maria has the playpen out now and it is where she lays K-A down to kick away. It is a travel cot and is abit small but gives her scope to kick about safely.
- Large equipment such as **buggies** seem to be difficult to store-being under the stairs (Maria's and Vicky's house), in the play room (Aisling), in the hallway (Aileen) not seen (Clare's).
- **Floor mat**- used by Hannah's mum for her to play with play dough (Dec 09). Hannah has begun to enjoy using play dough and her mum wanted a play solution that was manageable so she got a blue plastic 3 foot square table cover (like for picnics) and placed it on the floor in the corner for Hannah to work on. This worked well for Hannah as a place where she had permission to make a mess.
- **Toddler Raingear**- one of the issues that have come up for families is how to include outdoor activities in their children's play experiences. Hannah's mum and Amy's mum (both 1 year olds) both have bought them rain gear from Puddle Ducks which makes rain gear similar in design to snow gear- Clare (Hannah's mum) showed me the salopettes she bought for Hannah which covers her legs completely and gives her the protection from the weather that she needs yet allows her to sit outside on the ground or in the flower beds should she wish.
- **Bum-Bum seat**- Aileen names it this; it's the soft, foam, moulded seat that Maria showed me and is for babies who are about 4-5 months old and cannot yet sit on their own. Her friend gave it to her as she had found it useful for sitting the baby in on the kitchen counter so she could see. Maria put Karen in it but she threw up –perhaps being too upright for her as yet (5 months).
- **Standing-frame**: this was the first time I have seen such a piece of equipment. It was in Vicky's house in March and Sarah is placed in it to stand her up –it has a counter or tray around it and the seat that holds her in standing swivels so she can turn about to see what is going on behind her and also to reach the toys that are attached to the frame. It gives Sarah an alternative from lying, rolling and sitting and is something that Vicky really likes to use for her. Sarah seemed very happy in it and was enabled in lots of ways to move within her capacity and repertoire.
- **Baby walker**- used by one family but strongly opposed by another, due to different levels of concern about the negative impact on walking and other skills.

- **Baby-sling:** Aileen has been using a baby sling for Amy to go on walks sometimes but finds she is getting too big for it now (March). She has not yet tried a backpack sling but might consider one, as it would enable them to go hill walking, which they like to do. The other mums of babies have not chosen to use a baby sling, as they are concerned about the safety aspects if they fell.
- **Child sized chairs-** introduced in Amy's and Hannah's house by 15 months for playing at low tables now they are walking and independently mobile, and the floor is no longer the preferred place to play.
- **Stair gates-** introduced in Amy Tralee's house at 13 months when she began to crawl and explore around the house in earnest. It was just put at the bottom of the stairs, as this is where it is needed. When she is upstairs she is always with an adult so a stair gate at the top is not needed yet. Joe's family already have stair gates top and bottom as they put these in place for their older child and so the environment is already prepared for this eventuality. Hannah's family do not believe in using stair gates at the bottom, as they want their daughter to learn how to manage the stairs herself and give her the chance to practice this skill. In December however, Hannah's mum had just put up a stair gate as she found that despite Hannah's skill in managing the steps, when she got distracted, she forgot to take care and had lost her step a few times and tumbled down. As a result, her parents decided a stair gate was needed after all to allow her freedom but knowing she would be safe without the need for constant supervision. By March, Aisling is telling me how Joe has begun to climb up the stair gates and they are not doing the job of keeping him away from the stairs- he needs constant supervision. Equally, by March Clare tells me how she cannot go up the stairs so easily because Hannah wants to be opening and closing the stair gate herself all the time.
- **Kitchen-cupboards-** While Aisling has some cupboards out of bounds by using child locks; by February Joe has figured out how to open them so they are not so effective. Aileen allows Amy to pull out cupboards, which she does regularly, to play with the pots and pans when her mother is cooking. Similarly, Hannah pulls out cupboards to play with saucepans for cooking with mum. These cupboards take on a new identity then as the place for play when cooking is taking place.
- **Car-seats-** facing back initially and then forward-facing ones as the infant grows, which mothers find an easier stage as they can now see each other more easily in the car.
- **Toy boxes** live in the corner of each sitting room/family room: Maria, Clare, Vicky, Aileen, but in Aisling's case toys are kept in the playroom where the children are free to roam about and pull out toys as they need. None of the other houses have a specific designated toy room and so the toy box seems to be the answer for this.
- **Parenting books-** each of the mothers talked about the need for books to learn more about parenting and child development. They also chose books for their children that were recommended for them-even though the children might not have chosen them in their play as favourites. Aisling spoke of Joe saving Christmas books.

Individual processes: making the home individual to reflect interests and family traditions

- **Drawings on the walls** brought home from childminding or preschool
- **Photos of the babies/children** to celebrate the new arrival or birthday celebration of each birthday, or when they have new holiday pictures.
- **Photos of friends and family-** in every home, there are also pictures of close friends and family, which are frequently used as an activity with the infants to go through each person naming them together.
- **Masks** from Halloween

- **Christmas trees** up in the homes with lights and decorations on the tree- stair decorations and lights also. There are Santa figures in Maria's house- with lights and sleighs on the mantel piece and on the floor- she tells the children they all come alive and dance on Christmas Eve when they are sleep. The 6 year-old Erin is scared of this and is also afraid of the tooth fairy coming unknownst to her during the night. In Maria's house, there are Santa stockings hanging by the fireplace and a crib in the fireplace also. They love Christmas and have brought their children to see Santa already and will bring them again. For Maria Christmas starts on 8th December and this is traditionally when the tree goes up. For Aileen, they are both working and this is their first child so the tree is yet to be put up- they plan to do it on Sunday 13th when both parents are off work. In the December visits, Aileen still had no tree up; as life had been so busy with both working- they hoped to put it up the Sunday before!
- **Christmas cribs:** mothers as being important in their homes discussed cribs: Joe's mother and Sarah's (Vicky) specifically talked of the importance of telling the children the Christmas story. In Joe's family there is a tradition of visiting the cribs in some of the churches about the city over the Christmas holidays- it was something Aisling's grandfather used to do with them as children. She would like to continue the tradition.
- **Valentine's day:** cards made for mum at school and brought home (Maria)
- **St Patricks Day-** for March, in Tralee, Killarney, Cork and Dunmanway the children were brought to parades for St Patrick's Day-this would be routine but for Dunmanway the baby was sick so couldn't go. Maria would dress the children in green though to celebrate the day and go to mass.
- **Easter-** Easter cards made at school and brought home. Easter eggs for the older children. An Easter egg hunt for children and cousins in Kerry but not this year as the cousins are getting older so family customs is changing.
- **Books** on shelves in front room in Hannah's home with no TV, to reflect the family's desire to not get into watching TV as a habit. Instead Hannah's books are lined up and available for her to pick and choose during the day.

Objects and toys:

- **Bathing inserts and toys-** the infants have bathing routines that support play through the use of pouring toys and objects, alongside sponge inserts or baby baths to facilitate safe play and care routines for the carers.
- **Baby cots as places for play-** cots for the babies typically have bumpers of foam cushioning on them, and some overhead mobiles or teddies and other soft toys placed with them
- **Baby gym-** both babies had a floor mat with a baby gym placed over it which was a favourite for Sarah but not for Karen
- **Reading books-** Hannah and Amy, both 1 year olds enjoy books. In comparison Joe, the other 1 year old loves more to run and move around. While it could be that he is a boy and this might be more in his nature developmentally, he also is the only one of the three who has an older brother or sister to play with. It may be that this social interaction is more of interest to him than looking at books. Hannah loves to look at animals in books and take turns: mum asks where is... and Hannah points to the animal; or vice versa, Hannah points to a picture and mum names the animal. Amy loves to turn pages also and point to pictures specially photos of real life things but this is not her preference according to mum-she just likes pictures. By the time Joe is 18 months old he has begun to enjoy books also.
- **Exploratory toys-** Amy plays with a range of exploratory toys during the second six months of the study where she likes to press buttons and hits keys that result in music or bells (cause and effect toys).

- **Real objects: mobile phones, remote controls for TV and radio, and purses-** each of these items were identified as common items for play in Hannah's and Amy's homes, and not pretend items but real ones. Clothes **for dressing up** were also popular with Amy (hats and scarves during the winter specially).
- **Boxes and lids-** from ten months to two-years old, each of the infants were seen to play with common objects such as lunch boxes and bags, lids and containers, which afforded them play opportunities of putting things in and out.
- **Stacking-cups:** Hannah had these in her home since before Christmas but did not enjoy playing with them much. She would take them apart and then move on really. IN December and January she took them out on video and just pulled them apart and moved onto other things- seeming to not find much enjoyment form them. In February, her mother reported that she now loves them as she has figured out how they work and can do them without frustration. Having them in the home meant she had some experience of them but did not necessarily enjoy them until she was able for them?
- **Baby doll-** Hannah had a baby doll in the house and did not play with it until in February her mother suggested she put her doll to bed and gave her a blanket for it- since then Hannah has been 'obsessed' with putting the doll to bed-placing the blanket over it and off it etc. Is this because her mother suggested the 'just-right' play activity for her? Amy moves from playing with dolls at random to having a favourite teddy by the age of two, which she loves to use for changing nappies, and dressing up and bringing for a walk in her buggy.
- **Construction toys- Lego-** Hannah's grandmother gave her the present of Lego for 1 ½ years old when she was only 1 and she took to them very well-being able to put pieces together at November when she was only gone 1 year. Having them in the home meant Hannah got to experience them earlier than expected. Joe had access to **Stickle bricks** but did not enjoy them.
- **Play dough-** in December Hannah was very fond of play dough and wanted to play with it a lot. In February, mum remarked that she either has forgotten about it or just doesn't enjoy playing with it so much anymore. It is in the cupboard where she can get it easily for herself but she chooses not to.
- **Sand play and water play-** by April, the older three infants are all beginning to take part frequently in water play at the sink with spoons and cups etc, or with sand play outdoors. Water play for all of them is commonly a feature of bathing which is as much about play as it is about cleanliness.
- **Toy trucks, engines and tractors-** in Joe's house he and his brother Martin have many varieties of cars and trucks to lay with, including two garages that he uses to place cars into and roll them down the track.
- **Miniature toys-** Amy, Hannah and Joe all seek out miniature people and animals to play with consistently. Specifically, Amy seems to always want to have animals to play with and this seems to reflect her daily experiences in the real world with animals.
- While there are many more **commercial type toys** in Aisling's home, she reflects that these have mostly come into the home as presents and parents did not chose them for the child. However, in Hannah's case, she played very successfully with Lego which was considered advanced for her age according to the packaging- it was because her granny had given it to her that she has access to this toy- equally, she currently loves a caterpillar book which is a commercial type that has buttons to press and lights that flash, but Hannah will sit for a prolonged period of time pressing the buttons, making the songs play and turning the pages. It has captured her attention even though it is not something her mother would have chosen for her.
- Hannah (M), Amy (E), Joe (D) all have **wooden toys** that their mothers value and have chosen for the as good toys to have- they are simple, solid and promote building or construction of some sort.

- In Joe's play room there are many **characters from toy land**: Winnie the Pooh tree and press button songs; Tigger; Peppa Pig books/ TV; Hannah likes Jungle Book characters from the book and likes to sing the songs.
- **Old family items: Amy's Dog-** in Amy's home, they had an old dog pyjama case which she did not take any notice of until at Christmas, mum put it in the Christmas tree and Amy suddenly took to it and began to play with it a lot. It gives her a place to hide things and carry things about which is what she likes to do. It is also a dog which she is fond of as she has 2 pet dogs in her family.
- **Ride-along toys-** Joe and Karen both used ride-along toys frequently, with Karen moving onto them by the time she was ten/eleven months while Joe played with Martin on them in the hall and playroom.
- **Puppets-** in both Amy's and Hannah's home, puppets were introduced to Amy at 12 months but didn't come into real use until April, at 18 months, when both seemed to really find puppets fascinating.
- **Insert jigsaws-** by March, these were in evidence in the toddlers homes with Amy specially enjoying them
- **Mr Potato Head-** a favourite from March onwards in Amy's play.
- **Magna Doodle-** both Amy and Hannah enjoy making marks with Magna Doodle from 13 months onwards.
- **Markers and crayons-** present in all homes with varied use. Very popular with Amy and with Hannah by 20 months onwards.
- **Toy tea-sets-** on both Amy's and Hannah's home a toy tea set was a favourite by the time they both were reaching 24 months.
- **Places for climbing, exploring and playing-** each home had its own range of places, including natural places such as stairs, underneath chairs and tables. More planned places included **a tent** that Amy's family put up in the family room for her to play in. In the garden, Joe had the use of a **climbing frame and hiding house**, and a **trampoline**.
- **Ball-pool-** Amy has a ball-pool set up in a corner of her living room where she sits and plays with other objects and enjoys climbing in and out throughout the year.
- **Outdoor toys-** rakes and buckets for the sand; bubble-making lawnmower; water guns;
- **Unused-** in Joe's house, he is so into movement that toys do not seem to factor in. he enjoys climbing and will climb on the outdoor tree house they have and slide down and also rides the big car the boys have for pushing along with your feet along the hall. So though they have a lot of small toys and construction things to play with-these are not his favourites and he does not engage in them much (March).
- **Absent toys-** In Maria's home, there are few baby toys in evidence. She has a baby gym and baby car that Karen sits in and lies under. Both have a few small items that crinkle or make a noise but each month when I visit, she does not seem to play with such things much and her mother does not report on her use of such things in any major way. Her play is focused therefore on social play and engaging with her brother and sister.

APPENDIX K: Taxonomy of affordances for spaces and objects in the home from birth to 24 months for five infants

Being in the atmosphere of doing: first few weeks after birth

Environmental qualities that support certain affordances (spaces & objects)	Observed in relation to	Physical (sensory) affordance	Social affordance
Flat, relatively firm surface	Moses basket Changing mat/ bed/ floor mat Couch to lie on Baby buggy	Affords lying Affords watching Affords sleeping Affords changing routines Affords movement	Affords social interactions with carer Affords watching Affords being included in social events Affords being excluded from social events (for resting)
Moulded, curved object	Baby car-seat	Affords transportation	Affords being included in social events.
Flat, relatively firm, reclining surface (sloped)	Baby bouncer	Affords watching Affords sleeping	Affords being included in social events. Affords interactions from others
Adaptable holding (carer)	Being held by a carer	Affords full postural support for <ul style="list-style-type: none"> • being fed • watching 	Affords being included in social events Affords interactions from others Affords calming & comforting Affords massaging, rocking, hugging, cuddling

Note: graspable means hand-sized for babies and often also soft and malleable for ease of grip

Body space and body play: spaces 1 to 4 months

Environmental qualities that support certain affordances (spaces)	Observed in relation to	Physical (sensory) affordance	Social affordance
Flat, relatively firm surface	Baby bouncer Moses basket/ cot Changing mat / bed/ floor Couch/ arm chair	Affords lying Affords looking from Affords sleeping Affords changing routines Affords kicking, stretching and moving	Affords looking from Affords social interactions with carer Affords being included in social events Affords being excluded from social events (for resting)
Moulded, curved object	Baby car-seat Baby buggy	Affords transportation Affords sleep	Affords being included in social events.
Flat, relatively firm, reclining surface (sloped)	Baby bouncer	Affords supported sitting Affords looking and noticing Affords looking at objects and people and events Affords kicking, stretching and moving	Affords being included in social events. Affords social interactions
Adaptable holding (carer)	Being held by a carer (infant)	Affords trunk postural support for being fed/ watching/ supported sitting/ sleeping Affords looking at objects Affords touching objects	Affords being included in social events Affords interactions from others Affords calming & comforting Affords massaging, rocking, hugging, cuddling

Body space and body play: objects 1 to 4 months

Environmental qualities that support certain affordances/affordances: (Objects)	Observed in relation to	Physical (sensory) affordance	Social affordance
Flat, relatively soft surface (detachable with moving parts)	Play mat on floor	Affords kicking, stretching and moving Affords looking, watching, noticing	Affords shared interactions on baby gym (with siblings)
Dangling, small object with moving parts (attached object with moving parts)	Clipped onto a baby bouncer frame, baby gym or mobile attachment on cot	Affords touching, connecting with the object with hand or foot Affords hitting/striking at the object Affords looking, watching, noticing	
Musical soft toy (attached object that plays music when activated)	Clipped onto a baby bouncer frame, baby gym or mobile attachment on cot	Affords listening Affords looking at (specially if it has moving parts)	
Textured materials (graspable detached object)	Bibs	Affords grasping	

with varied textures)	Cloth for wiping dribbling	Affords mouthing	
Parts of the body (hands and fingers)	Infant's behaviours	Affords sucking and mouthing	
Detached objects with varied colours, shapes, sounds (graspable detached object)	Being presented to infant (Held up for infant to see)	Affords looking, watching, noticing Affords connecting with object if placed near hand Affords grasping Affords mouthing	Affords interactions from others

Near space and sitting play: spaces 4 to 8 months

Environmental qualities that support certain affordances (SPACES)	Observed in relation to	Physical affordance	Social affordance
Flat, relatively firm surface	Baby bouncer Cot Changing mat / bed/ floor mat Couch/ arm chair	Affords lying Affords looking from Affords sleeping Affords changing routines Affords kicking, lying, rolling, sitting	Affords looking from Affords social interactions with carer Affords being included in social events Affords being excluded from social events (for resting)
Moulded, curved object	Baby car-seat (Baby buggy)	Affords transportation Affords sleep/ object interactions/ feeding	Affords being included in social events.
Relatively firm, upright surface (sloped)	Baby bouncer	Affords supported sitting Affords looking and noticing Affords looking at objects/ people/ events Affords kicking, stretching and moving	Affords being included in social events. Affords social interactions
Adaptable holding and positioning and supporting play (carer)	Being held by a carer (infant) Being used to support infant in floor sitting (mother) Being held by carer to support interactions in space play	Affords trunk support for being fed/ watching/ supported sitting Affords looking at objects Affords interacting with objects Affords throwing up in air in carers arms Affords bending backwards and being upside-down in carers arms (moving through space)	Affords being included in social events Affords interactions from others Affords calming & comforting Affords massaging, rocking, hugging, cuddling Affords shared object play
Moulded frame (detached object) with attached graspable objects	Baby stander	Affords supported standing Affords object interaction	Affords social interactions through shared object play

Near space and sitting play: object 4 to 8 months

Environmental qualities that support certain affordances (OBJECTS)	Observed in relation to	Physical affordance	Social affordance
Flat, relatively soft surface (detachable with moving parts)	Play mat on floor	Affords lying, rolling, sitting Affords object interactions Affords reaching and releasing	Affords shared interactions (with siblings)
Dangling, small object with moving parts (attached object with moving parts)	Clipped onto a baby bouncer frame, baby gym or mobile attachment on cot	Affords touching, connecting & grasping the object Affords hitting/striking at the object with hand or foot Affords looking, watching, noticing	

		Affords pulling on object	
Textured materials (graspable detached object with varied textures)	Bibs/ Cloth for wiping dribbling Baby blanket/ textured hand-sized toys Hand and foot rattles	Affords grasping and releasing Affords two-handed interactions Affords shaking Affords examining Affords mouthing	Affords interactions from others (bringing and retrieving objects for infant)
Parts of the body (hands and fingers)	Infant's behaviours	Affords sucking and mouthing	
Detached objects with varied colours, shapes, sounds (graspable detached object)	Being presented to infant (Held up for infant to see) Infant being able to reach objects nearby	Affords looking, watching, noticing Affords grasping Affords lifting (not heavy) Affords mouthing Affords examining/turning over Affords poking with fingers Affords pressing Affords hitting Affords dropping /releasing Affords banging	Affords interactions from others (bringing and retrieving objects for infant)
Detached objects with inbuilt working parts	Commercial exploratory toy keyboard/ activity centre	Affords looking, watching, noticing Affords poking with fingers Affords pressing Affords hitting/ patting	Affords interactions from others (holding toy steady for infant to play)

Middle space and reaching play: spaces 8 to 12 months

Environmental qualities that support certain affordances (spaces)	Observed in relation to	Physical affordance	Social affordance
Flat, relatively firm surface	Cot Changing mat / bed/ floor mat Floor/ground	Affords lying/ sleeping Affords changing routines Affords sitting Affords creeping, crawling, standing, cruising Affords locomoting through on ride-along toy/ baby walker	Affords social interactions with carer Affords being excluded from social events (for resting)
Moulded, curved object	car-seat (buggy)	Affords transportation Affords sleep/ object interactions/ feeding	Affords being included in social events.
Firm, flat surface, with a back , raised off the floor	High-chair	Affords supported sitting Affords looking at objects/ people/ events Affords eating/drinking/object play	Affords being included in social events. Affords social interactions
Adaptable holding and positioning and supporting play (carer)	Being held by a carer (infant) Being used to support infant in floor sitting/ standing (mother) Being held by carer to support interactions in space play	Affords sitting Affords looking at objects Affords interacting with objects Affords throwing up in air in carers arms (moving through space) Affords standing	Affords being included in social events Affords interactions from others Affords calming & comforting Affords massaging, rocking, hugging, cuddling Affords shared object play
Large sturdy (detached) objects with firm edges and sides	House sitting furniture	Affords sitting on	Affords social interaction-
Moulded frame (detached object) with attached graspable objects	Baby stander	Affords supported standing Affords object interaction	Affords social interactions through shared object play
Moulded frame (detached object) on castors	Baby walker	Affords supported walking Affords object interaction	Affords social interaction
Large sturdy (detached) objects with firm edges and sides	House furniture	Affords holding onto, for standing Affords climbing on and off	Affords social interaction

Middle space and reaching play: objects 8 to 12 months

Environmental qualities that support certain affordances/ affordances	Observed in relation to	Physical affordance	Social affordance
Flat, relatively firm surface	Floor/floor mat for play	Affords rolling, cruising, crawling, sitting Affords object interactions Affords reaching and releasing	Affords shared interactions (with siblings)
Parts of the body (hands and fingers)	Infant's behaviours specially at teething	Affords sucking/mouthing	

Detached objects with varied colours, shapes, sounds (when shaken) (graspable detached object)	Play with balls, boxes, containers, lids, books, paper, building blocks, spoons, cups, socks, slippers, plastic plates, rings, Balloons, skittles, rattles, bottles, Food such as breakfast cereal, crusts, yoghurt, biscuits	Affords looking, watching, noticing Affords grasping Affords lifting (not heavy) Affords mouthing Affords examining/turning over Affords poking with fingers Affords pressing Affords hitting Affords releasing/ throwing Affords banging Affords reaching for retrieving thrown object	Affords interactions from others (bringing and retrieving objects for infant) Affords interaction with others (turn-taking giving or rolling ball to each other)
Detached objects with inbuilt working parts	Commercial exploratory toy keyboard/ activity centre	Affords looking, watching, noticing Affords poking with fingers Affords pressing Affords hitting/ patting	Affords interactions from others (holding toy steady for infant to play)
Detachable hand-sized objects that can be dismantled/ constructed	Play with containers and their lids, boxes of building blocks Simple shape sorter	Affords pulling apart Affords taking out and putting in to boxes Affords placing object into shape sorter	
Child-sized detached rigid object on wheels with a handle at waist height	Push along trolley toy/ Upright exploratory toy on wheels	Affords supported standing and walking Affords pushing along while walking	
Child-sized detached rigid object on wheels with a low bench and wheel	Ridelaong toy car with steering wheel	Affords sitting on Affords pushing along while sitting on it.	

Home space and mobile play: spaces: 12 to 18 months

Environmental qualities that support certain affordances (spaces)	Observed in relation to	Physical affordance	Social affordance
Flat, relatively firm surface (lie, sit and stand-on-able feature)	Cot Changing mat / bed/ floor mat Floor/ ground	Affords lying/ sleeping Affords changing routines Affords sitting Affords crawling, cruising, squatting & walking Affords locomoting through on ride-along toy/ with Push along trolley	Affords social interactions with carer Affords being excluded from social events (for resting)
Moulded, curved object (sit-able feature)	car-seat (buggy)	Affords transportation	Affords being included in social events.
Firm, flat surface, with a back, raised off the floor	High-chair, with tray	Affords supported sitting Affords looking at objects/ people/ events Affords eating/drinking/object play	Affords being included in social events. Affords social interactions
Adaptable holding and positioning and supporting play (carer)	Being held by a carer (infant) Being used to support infant in standing (mother)	Affords interacting with objects Affords throwing up in air in carers arms (moving through space) Affords standing	Affords being included in social events Affords interactions from others Affords calming, comforting, rocking, hugging, cuddling Affords shared object play
Large sturdy (detached) objects with firm edges and sides (climbable feature/ hide-behindable, crawl-underneathable)	House furniture	Affords holding onto for cruising Affords climbing on and off Affords sliding on (shiny leather couch) Affords crawling underneath Affords hiding behind Affords sitting on	Affords social interaction- rough and tumble play
Platform- flat, firm surface (attached or detached)	Steps Coffee table/ foot stool Window ledge/window seat	Affords passage from one place to another (stairs) Affords sitting on for play Affords climbing on and off Affords standing and squatting at for play	
Shelter/retreat (hide behind-able feature)	Tent Under the table Behind the couch/curtains	Affords privacy Affords refuge Affords a place to hide Affords looking out from	Affords game playing (e.g. hide and seek)
Open spaces	Doors open so infant can move freely about the home	Affords multisite object interactions Affords transportation of objects	Affords spatial tie to carer
Detached container	For holding toys (toy-box)	Affords play interaction in specific locations in the home	Affords play interactions near the social events in the home

Home space and mobile play: objects: 12 to 18 months continued

Environmental qualities that support certain affordances (objects)	Observed in relation to	Physical (sensory) affordance	Social affordance
Flat, relatively firm surface	Floor/floor mat for play	Affords sitting, crawling, standing, cruising, walking Affords object interactions Affords locomoting through on ride-along toy/ with Push along trolley	Affords shared interactions (with siblings)
Relatively smooth slope	Outdoor play in gardens	Affords running up and down	
Detached objects with varied colours, shapes, sounds, purposes (graspable detached object)	Play with balls, books, paper, building blocks, stacking rings/ cups, toy garages/farms/trucks, miniature animals, balloons, skittles, rattles, bottles, Food such as breakfast cereal, crusts, yoghurt, biscuits Objects such as remote controls, phones, purses, money, pots and pans, hats, necklaces, pens, spoons, cloths, tins, boxes, containers, lids	Affords lifting different sizes and weights Affords pressing buttons to activate toy/ object (e.g. electronic book) Affords hitting/ banging Affords controlled releasing into containers/simple shape sorters Affords putting in and taking out Affords throwing Affords putting on and off (e.g. hats, necklaces) Affords writing, drawing, making marks Affords stirring, mixing, wiping, cleaning	Affords interactions with others, e.g.: <ul style="list-style-type: none"> • Affords looking at pictures and pointing • Affords listening to stories
Detached objects with inbuilt working parts	Commercial exploratory toy keyboard/ activity centre	Affords looking, watching, noticing Affords poking with fingers Affords pressing Affords hitting/ patting	Affords interactions from others (holding toy steady for infant to play)
Detachable hand-sized objects that can be dismantled/ constructed	Play with containers and their lids, boxes of building blocks/ stacking rings/cups, Simple shape sorter Lego/ stickle bricks	Affords pulling apart Affords taking out and putting in to boxes Affords placing object into shape sorter Affords matching parts (e.g. lids to containers) Affords putting together (e.g. making Lego)	
Moving surfaces within an enclosure	Ball-pool	Affords moving in varied ways Affords throwing	
Child-sized detached rigid object on wheels with a handle at waist height	Push along trolley toy/ Upright exploratory toy on wheels	Affords supported standing and walking Affords pushing along while walking	
Child-sized detached rigid object on wheels with a low bench and wheel	Ridelaong toy car with steering wheel	Affords sitting on Affords pushing along while sitting on it.	
Control switches for the environment	Switches for turning on and off lights, TV, washing machines	Affords pressing buttons to activate the object	

Home space and advanced infant play: spaces 18 to 24 months

Environmental qualities that support certain affordances (spaces)	Observed in relation to	Physical affordance	Social affordance
Flat, relatively firm surface (lie, sit and stand-on-able feature)	Cot Changing mat / bed/ floor mat Floor/ ground	Affords lying/ sleeping Affords changing routines Affords sitting Affords squatting, walking, running, chasing Affords locomoting through on ride-along toy/ with Push along trolley	Affords social interactions with carer Affords being excluded from social events (for resting)
Moulded, curved object (sit-able feature)	car-seat (buggy)	Affords transportation	Affords being included in social events.
Firm, flat surface, with a back, raised off the floor	High-chair, with tray	Affords supported sitting Affords looking at objects/ people/ events Affords eating/drinking/object play	Affords being included in social events. Affords social interactions
Adaptable holding and positioning and supporting play (carer)	Being held by a carer (infant)	Affords interacting with objects	Affords being included in social events Affords interactions from others Affords calming, comforting, rocking, hugging, cuddling Affords shared object play
Large sturdy (detached) objects with firm edges and sides (climbable feature/ hide-behind able, crawl-underneath able)	House furniture	Affords climbing on and off Affords sliding on (shiny leather couch) Affords crawling underneath Affords hiding behind Affords jumping on Affords sitting on	Affords social interaction- rough and tumble play
Large sturdy, non-rigid (attached) objects	Swings and slides	Affords sliding down Affords swinging	
Large, attached non-rigid surface on a stand	trampoline	Affords jumping/ bouncing	
Platform- flat, firm surface (attached or detached)	Steps Coffee table/ foot stool Window ledge/window seat	Affords sitting on for play Affords passage from one place to another (stairs) Affords climbing on and off Affords jumping off Affords standing at for play	
Shelter/retreat (hide behind-able feature)	Tent Under the table Behind the couch/curtains	Affords privacy Affords refuge Affords a place to hide Affords looking out from	Affords game playing (e.g. hide and seek)
Open spaces	Doors open so infant can	Affords multisite object interactions	Affords spatial tie to carer

	move freely about the home	Affords transportation of objects	
Detached container	For holding toys (toy-box)	Affords play interaction in specific locations in the home	Affords play interactions near the social events in the home

Home space and advanced infant play: objects 18 to 24 months

Environmental qualities that support certain affordances (OBJECTS)	Observed in relation to	Physical affordance	Social affordance
Flat, relatively firm surface	Floor/ground	Affords sitting, standing, walking, running Affords object interactions Affords locomoting through on ride-along toy/ with Push along trolley/tricycle	Affords shared interactions (with siblings)
Detached objects with varied colours, shapes, sounds, purposes (graspable detached object)	Play with balls, books, paper, building blocks, stacking rings/ cups, toy garages/farms/trucks, miniature animals, dolls, teddies, tea-sets, balloons, skittles, rattles, bottles, percussion instruments Food such as breakfast cereal, crusts, yoghurt, biscuits Objects such as remote controls, phones, purses, money, pots and pans, hats, necklaces, pens, spoons, cloths, tins, boxes, containers, lids	Affords pressing buttons to activate toy/ object (e.g. electronic book) Affords controlled releasing into containers/simple shape sorters Affords putting in and taking out Affords throwing Affords putting on and off (e.g. hats, necklaces) Affords writing, drawing, making marks Affords stirring, mixing, wiping, cleaning	Affords interactions with others, e.g.: <ul style="list-style-type: none"> • Affords looking at pictures and pointing • Affords listening to stories
Detached objects with inbuilt working parts		Affords poking with fingers Affords pressing Affords hitting	Affords interactions from others (holding toy steady for infant to play)
Detachable hand-sized objects that can be dismantled/ constructed	Play with containers and their lids, boxes of building blocks/ stacking rings/cups, Simple shape sorter Lego/ stickle bricks Insert boards/ jigsaws	Affords pulling apart Affords taking out and putting in to boxes Affords placing object into shape sorter Affords matching parts (e.g. lids to containers) Affords putting together (e.g. making Lego) Affords fitting shapes into correct slots	
Moving surfaces within an enclosure	Ball-pool	Affords moving in varied ways Affords throwing	
Child-sized detached rigid object on wheels with a handle at waist height	Push along trolley toy	Affords pushing along while walking Affords transportation of objects	

Child-sized detached rigid object on wheels with a low bench and wheel	Ridelaong toy car with steering wheel	Affords sitting on Affords pushing along while sitting on it.	
Control switches for the environment	Switches for turning on and off lights, TV, washing machines	Affords pressing buttons to activate the object	
Mouldable material (e.g. sand, earth)	Sand play Play doh	Affords shovelling/ scooping/ digging Affords pouring Affords moulding into shapes Affords rolling Affords playing with sand	
water	Water play	Affords pouring Affords splashing Affords scooping Affords playing with water	

LIST OF PUBLICATIONS OR PRESENTATIONS ARISING FROM THIS STUDY

Presentations:

- Researching with Children Conference, Galway, February 2009: Time use and researching with children, Lynch, H.
- Health and children conference Galway 2009-
 - paper presentation- Lynch, H.
 - poster presentation- Ni Bhriain, M. & Lynch, H.
- International Family Day Care Organisation conference, UCC Cork, July 2009: workshop on early learning environments for infants, Lynch, H.
- Southern Group of Occupational Therapists, September 2009: Use of Video with children in Research, Lynch, H.
- Southern Regional Group of Occupational Therapists April 2010: Natural Learning environments, Lynch, H.
- Association of Occupational Therapists of Ireland Conference May 2010: The power of the ordinary: play and infant learning environments, paper presentation, Lynch, H.
- SSO-CSOS conference, London, Ontario, Canada, October 2010: poster and paper presentation, and invited panel discussant, Lynch, H.
- European SI Conference, Mat 2011: Play and physical learning environments of infants, paper presentation, Lynch, H.
- National study day for Intellectual Disability, September 2011: Natural Learning Environments in Occupational Therapy, workshop, Anzalone, M. & Lynch, H.

Courses completed:

- Writing for publication (Kalmer) 2 day course UCC, Cork, Sept 2008
- Grounded Theory course- DCU School of Nursing, Dublin, June 2009
- TRANSANA training course-2 days Guildford, Surrey UK, Sept 2009
- Boosting your writing for PhD students, UCC, Cork, December 2010
- PG7003-Completing your PhD module, UCC, Cork Jan-March 2011
- Summer school on analysis and writing, for PhD students, UCC, Cork, July 2011

Publications:

- Buchorn, M; Lynch, H; (2010) 'Perspectives regarding Occupational Therapy practice with children and families'. *Journal of Occupational Therapy, Schools and Early Intervention* , 3 (1):105-112.
- Coughlan, M., & Lynch, H. (2011). Parents as environmental managers: the Irish home as a play space for toddlers. *Irish Journal of Occupational Therapy*, 39 (1), 34-41.
- Lynch, H. (2009). Patterns of activity of Irish children aged five to eight years: city living in Ireland today. *Journal of Occupational Science*, 16(1), 44-49.
- O'Brien, Mairead & Lynch, H.; (2011) 'Exploring the role of touch in the first year of life: mothers' perspectives of tactile interactions with their infants'. *British Journal of Occupational Therapy* , 74 (3):129-136.

Grants:

- HRB student grant- research assistant- June- August 2010