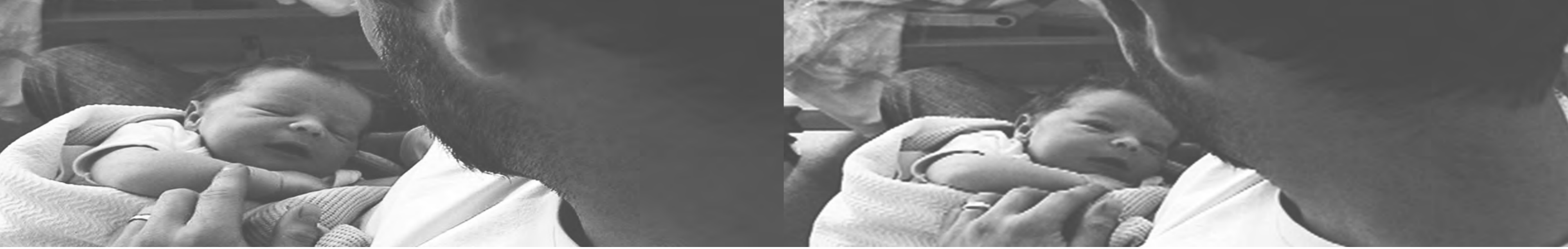




Contents

Aims of film & its use.....	4
Contents & timings of film.....	5
Introducing Orson (0-3 months).....	6
Reaching Out (4-7 months).....	13
Exploring from a Safe Base (8-12 months).....	16
Questions & discussion topics.....	18
Film Commentary.....	19
Glossary & useful terms.....	28
References & further reading.....	32



Aims of the film

The way that human development occurs is a complex interaction between what we bring into the world - our genetic inheritance - and the experiences we encounter as we live within it. It is not a question of nature or nurture but rather nature *and* nurture combined together. All learning takes place from the beginning by a combining of all the sensory information received from all our experiences.

The developmental change and learning that takes place in the first year is huge for babies and this film highlights just how important these changes are by travelling with Orson on his journey throughout his first year. We watch him as he makes his first great transition from life in the womb to life outside with his family. We see how every aspect of development links and influences every other part and this 'holistic' nature of development is illustrated clearly. We discover how he begins to find out about the very special people around him - his Mum and Dad and his brother. We see how he begins to find out about the world around him and, very importantly, how Orson starts to learn about himself as a unique and special child.

Throughout the film, links are made to how Orson's brain is growing and being shaped by all of his experiences. It shows how his understanding of himself as an individual begins to emerge by the end of this magical year.

The film looks in detail at some of Orson's experiences. In particular it shows how incredibly important his close relationships are in helping him feel safe and secure. You see how feeling safe gives him the confidence to explore his environment and the more secure he feels, the more he is able to explore. His relationship with his Mum and Dad are fundamental to his well-being and this film also shows how a particular type of relationship known as 'attachment' - which is closely bound up with these feelings of security - is built up over time.

In this film Orson is with his parents, but all the information about the importance of early relationships, how Orson learns to feel safe and secure, applies just as much to anyone who is involved in the care of young babies. Positive relationships are built up by adults being responsive, caring and sensitive to their needs.

In order to help highlight the important changes that occur in this first year, Orson's journey has been divided into sections 0-3 months, 4-7 months and then 8 months to a year. However, it must be emphasised that each baby will develop at their own particular rate. But at the same time there is a remarkable similarity in human babies as to when they usually begin to achieve certain skills and abilities. To help you examine particular aspects of development the three sections are further divided into smaller sections.

Interspersed with the documentary are brief interviews with Maria Robinson, adviser, author and lecturer in early care and development, and these highlight, discuss or explain a particular topic a little further.

Using the Film

The film has been made to:

- Identify the main shifts in skills and abilities that are common to babies during the first year
- Highlight the importance of relationships and the making of attachments
- Support and enhance understanding of the needs of a baby during this time
- Illustrate that development is holistic
- Emphasise that brain development and experience are closely linked
- Illustrate that early development provides the framework for the quality of later emerging skills and abilities, including that of forming other relationships, communication, learning and play.

It can be watched as a whole but as it has also been divided into sections, this makes it versatile and flexible to meet your particular needs. Some suggestions are given below.

Tutors

The division into the three main sections, and then further smaller sections, will allow you to use the film dependent on your various student groups and their level of training and/or experience. You may wish to go through the whole film (time permitting) without comment and then ask the students what their main impression was about Orson's development. Each section could then be looked at in turn to show how development slowly builds on the baby's opportunities for repetition, imitation and familiar routines. The smaller sections could also be used individually as specific areas for further discussion and to extend knowledge and understanding in greater depth.

Early Years Practitioners, Childminders, Health Visitors, Social Workers, Teachers/Trainees – all those working in the early years field

You may be utilising this video as part of your own training or continuing professional development. For example if you are a teacher familiar with the Foundation Stage Curriculum (3-5 years) you may wish to enhance your knowledge to comply with the new Early Years Foundation Stage and find



out more about very early development. Again, the film can be viewed as a whole simply to 'get a picture' of development and linked with the notes and/or specific sections can be used to support understanding of individual children or to reflect on the precursors to any particular behaviours you may be encountering in your work.

About the accompanying notes

The notes have two functions – firstly to support what you can see on the film and also to provide you with more detailed information about some of the exciting and interesting topics you will encounter. The notes will include an overview of the development within the three main sections and then further information on some of those topics identified in the smaller sections. Some notes will have more general aspects such as 'communication' as this will link across all the sections. A summary of the development that can be seen in many babies during these phases will be given at the end of each main section.

Contents & timings of film

Introducing Orson

0 to 3 months

What can Orson do at birth?	1:45
How does experience help to shape the brain?	5:00
Early experiences, care routines & socialising	7:00
Communicating, babbling, smiling & copying	15:30
What have we seen so far	21:00

Reaching Out

4 to 7 months

22:40

Strength, co-ordination, space & movement	23:00
Interest in objects, reaching & grasping	26:00
Feeding, new tastes & textures	29:00
New noises, laughing, games & gestures	32:00
Attachment, feeling safe & secure	39:30
What have we seen so far	42:50

Exploring from a Safe Base

8 to 12 months

44:00

Myelination, emotions & learning	44:30
Communication, joint attention & gesturing	48:15
Object permanence & separation anxiety	51:45
Gestures, social referencing & empathy	56:45
Problem solving & schemas	61:30
What have we seen so far	64:15
End	67:00



Introducing Orson

0 to 3 months

This section welcomes Orson into his family, emphasising his complete dependence on his parents as well as letting us see that he enters the world equipped with a basic 'tool box' of skills. These provide him with a 'kick start' in making sure that he gets the care he needs.

What can Orson do at birth?

This 'tool box' includes vision, which although limited, permits seeing at just the right distance to examine a carer's face when held. Orson, like other babies, will not have much colour vision – they don't really need it in the womb. However, in the first three months, Orson's ability to see colours will gradually improve as the receptors in the eyes that deal with colour, migrate to the particular area in the eye where they need to be. Babies can hear and are already familiar with the sound of their mother's voices from having heard it in the womb. They are sensitive to touch, taste, heat, cold and pain. Touch is especially important and it is the first sense to develop.

In addition, Orson has a set of reflexes, which are responses not in his control but are simple reactions to some specific experiences. However, it is important to emphasise that Orson's reflexes have not arisen from nothing, but emerge from the experiences he has already had in the womb where babies have been found to also blink, suck their thumbs and show expression on their faces to various stimuli including reacting to loud noises. Sucking their thumbs in the womb helps a baby learn about the shape of their fingers and so the sucking 'reflex' has already been 'practiced' in the womb. Research has also indicated that in the womb, babies show regular patterns of spontaneous movement from 12-16 weeks emphasising that Orson's 'stepping reflex', where he lifts his feet alternately when held with his feet on a hard surface, may also have its roots in pre-birth activity. This and his other reflexes, such as sucking, 'rooting' and 'startle' (which are seen in the film) and grasping all ensure his survival as he clings to his mother and is able to find the breast and feed. All these interactions ensure that Orson and his mother get to know one another. Orson is already familiar with her voice and soon becomes familiar with her smell and possibly taste. Babies have been shown to recognise the smell of their mother's breast milk from that of other mothers, even if they are bottle fed. It is also suggested that the same processes that 'flavour' breast milk, 'flavour' amniotic fluid too, so breast milk itself may have a familiar taste!

When babies are held closely by both mothers and fathers, it has been found that their heart rates 'synchronise' in their rhythm. This means that the baby's heart rate gradually is calmer. If you notice, babies are often instinctively held on the left side of the adults body allowing easier access to this 'heart to heart' connection. Mother's voice too supports the 'calming' of the baby's heart rate. Mother's voice helps the baby in another way too. When they listen to her voice, babies start to

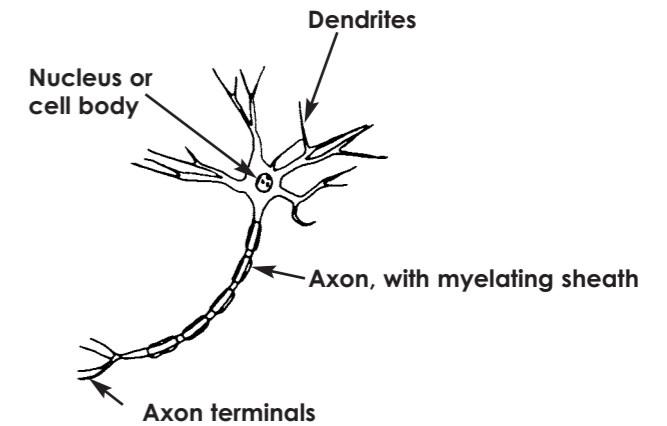
move their limbs in a more co-ordinated way and so, over time, this allows bodily movements to become more purposeful and smoother. All in all, talking to babies encourages a 'bath' of good feelings. Orson is also soothed by the voice of Dad who also adjusts his pitch and tempo (how loud/soft and speed of speaking) to match how Mum speaks. No-one tells him to – it is just instinctive! See infant directed speech below.

New faces

Babies like faces and research strongly indicates that even new born babies prefer to look at faces or objects that resemble faces from the very beginning of life. There seems to be magic in the fact that the baby's vision is just right to see a face when held in their carer's arms - while everything else is rather blurry! There is a finding that in the first 3 months of life, babies have difficulty in turning attention to a stimulus on the periphery of their vision and this is termed 'sticky fixation'. A particularly interesting aspect of this difficulty is that it may actually support the child's ability to familiarise its self with another's face, by minimising any surrounding visual distractions.

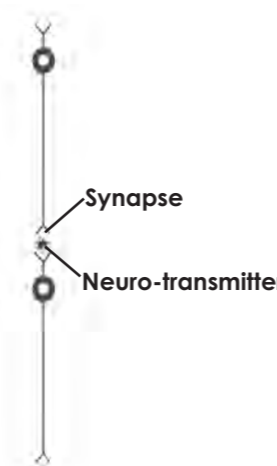
How does experience help to shape the brain?

Our brains, at birth, are really a 'brain in waiting'. Although we are born with all the neurons (the special cells in the brain that communicate with each other) that we will need, it is our experiences which influence the way in which our brains grow and develop. There are two types of cells, the ones you will hear most about are the neurons and these are the ones that 'talk' to each other. We have about 100 billion of these and nearly all of them are present at birth. These neurons are special in that

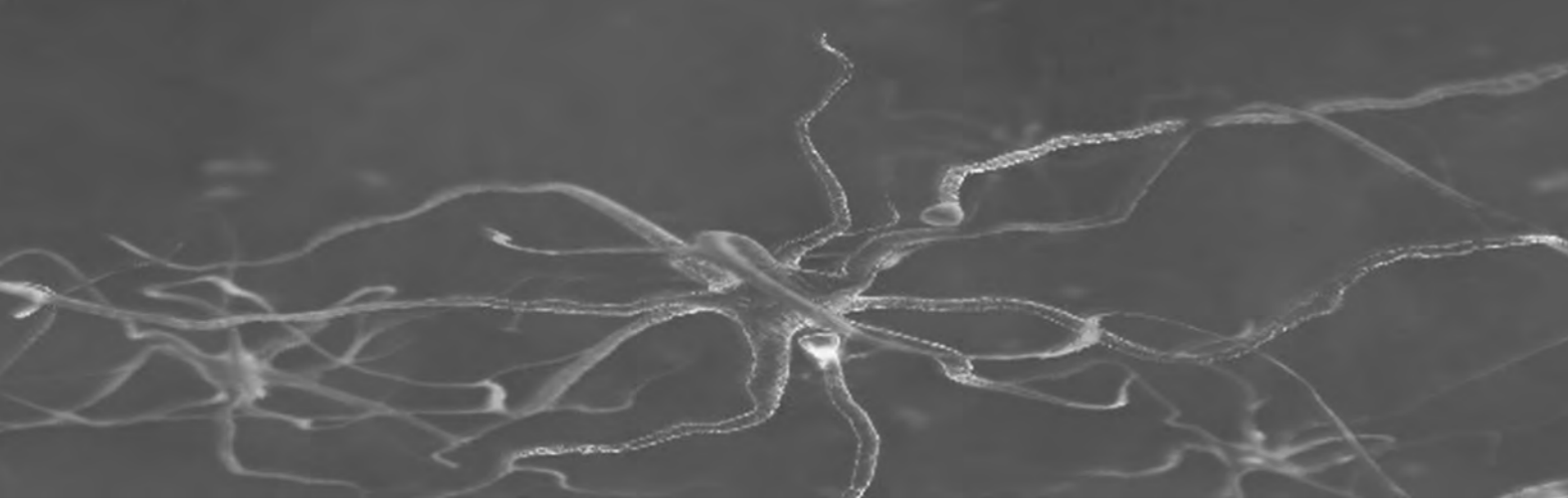


A neuron

they both receive and send information. The parts of the cell that receive information are called dendrites and the cell also has an extension or 'tail' called the axon, which is the sender of information. While there can be lots of dendrites and neurons can have different shapes, they each only have one axon. Information received enters the cell via the dendrites and then is passed down the axon to its 'end feet' where sit little sacs of chemicals – neurotransmitters. All sensory information is transformed into an electrical impulse and when this reaches the end of the axon, it is the neurotransmitters that carry the message across a tiny space, called a synapse, to the dendrites of the next axon.



Two neurons, one sending, the other receiving information



Glia cells & myelination

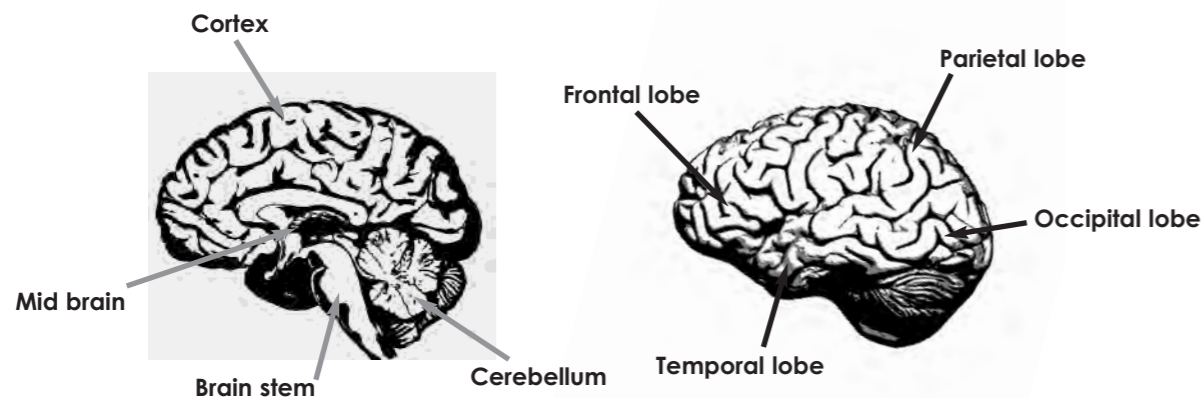
The other type of cells are called 'glia' and there are even more of these than there are neurons. A particular type of glial cell plays a very important function in that, over time, they produce a fatty sheath called 'myelin' which covers the axon and this allows the information to pass along the axon much quicker. The important thing to remember is that this process starts at birth but takes many years. Infants process information about 16 times less efficiently than adults. This is why, for example, a baby takes some moments to respond when they are in a 'conversation' with you or why children can seem to take so long to answer a question.

The value of experience

Our brains will grow whatever our experiences are – but it is the type and quality of the experiences which establish what particular pathways are laid down. When sensory information (from outside our body through what we see, hear, touch, etc. and inside from heart rate, breathing, tummy rumbles etc which often alter in response to 'outside' information) reaches the brain, lots of connections are made between different groups of neurons. If the experience is repeated often enough, this makes a pattern between those connections that are most used. Other connections, which may have been made in the first place, but not used again or very rarely, wither away. You can imagine that when a baby is first born there is lots of information coming to the baby's brain and somehow he has to make sense of it. The connections which fire repeatedly are strengthened, allowing them to fire more quickly, while those that are not used get pruned away. This is why providing the baby with consistent responses and familiar routines allow these patterns to emerge. The baby needs familiarity and repetition to begin to sort out his world, organizing his brain.

The brain stem, the middle brain and the cortex

The oldest part of our brain, the brain stem (sometimes called the reptilian brain) has two main functions. It acts partly as a 'relay station' of information with outputs spread widely across the brain both to and from the two hemispheres and cerebellum.



Major parts of brain

lum. The brain stem contains the sites of vital bodily functions such as breathing, being awake and conscious, attention and the control of bodily temperature and although fragile, it is fully developed at birth. Other parts of Orson's brain are working well, like the structures that deal with his emotions, which are in the middle part of his brain. We share these structures with all other mammals such as dogs, dolphins and elephants etc. The 'newest' part of the brain, in evolutionary terms, the cerebral cortex is the outer surface of the brain and is the most complex part. It is made up of different areas which have overlapping functions and each area develops at different times. For example the frontal lobe, the 'thinking' part of the brain, develops much later than the occipital lobe, which deals with vision. All the parts of the brain are closely connected together but the oldest parts of the brain can be the strongest especially when we feel unsafe, physically or emotionally.

Some important points about our brains and our emotions:

During this first year, development of the emotional parts of the brain are fundamental as they determine how the baby acts - whether he goes towards things or goes away from them.

❖	the structures in our brain which process our emotions lie in the deeper, older areas
❖	the different parts of our brain develop at different rates with the 'older parts' being mature before the 'newer' areas of the cortex
❖	'control' of emotions comes through consistent, comforting interactions which help, over time - to develop the essential brain pathways between these deeper parts of the brain and the frontal cortex - areas of which act as a 'brake' on the strength of our emotions so that we may curb a response

Note – let us not forget the cerebellum! This structure is situated behind the brainstem at the back of the brain and will be very active during movement and also with balance, timing and learning familiar routines.

Early experiences, care routines & socialising

When Orson is with his parents, they are both beginning to get to know each other. In particular, his mother is beginning to understand what his facial expressions and body movements might mean and interprets them in order to try to meet his needs. Interpreting a baby's signals appropriately for most of the time is very important. No-one can get it right every time but so long as a baby's needs are met most of the time, then baby learns that someone is there and he will be cared for. In the film, Dad misinterprets Orson's signals and Orson gets distressed but Dad soon gets it right.

Crying is a baby's first signal and it is really important that babies learn that they will be quickly soothed and comforted. This doesn't mean that a slight delay is harmful – but a baby needs to learn with confidence that someone will come and that