# Autism and Understanding

The Waldon Approach to Child Development

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with

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# The Waldon Theory of Child Development and the Waldon Approach

*'All understanding has its origin in movement' (Jonas Torrance)*[1]

This chapter summarizes the Waldon Theory of child development. The Waldon Approach (sometimes called Functional Learning), utilizes a very particular form of lesson based on this philosophy. Robert and the other children[2] in the case studies in Chapters 7 and 8 all had lessons based on the Waldon Theory of child development. So what follows is not a 'recipe' for the use of his method but an explanation of the theory. Parents and practitioners need to understand the philosophy and work out the best way to implement it in each individual case.

## The Waldon Theory

Geoffrey Waldon developed, directly from his own observation, an original theory of the growth of understanding. Although he sometimes suggested that his work be compared and contrasted with that of Piaget or Gesell, the ideas are neither derived from nor a continuation of their work. A study of the Waldon Theory and its place in the literature of child development would be a fruitful area for further research.

   Geoffrey Waldon resolved in about 1960 to learn something about the development of young children and spent several years in 'casual but careful' observation of children in public and private places, on buses and trains, in parks and waiting rooms, in nursery and infant schools and in the houses of friends. During his everyday work as a neurologist he was also able to work with 200 or so developmentally delayed and 'brain damaged' children in whom variations on the more usual pattern of developments could be studied.

   By observing both typical and atypical behaviour, and by speculating on possible behavioural growth mechanisms, Waldon began to build and test hypotheses about atypical development.[3]

## Meaning from movement

'Meaning from movement' is an expression Waldon used constantly; it is foundational to his theory of learning. Waldon believed that movement is the most consistent and regular source of experience and provides the structure of understanding, which develops alongside the movements. Objects, or the environment, are said to 'inherit' interest from movement; without bodily integration and organized movement patterns, children will not be able to develop the usual capacity for action and subsequently for more abstract thinking.

The Waldon Approach was developed in the 1970s but many of Waldon's ideas have since been validated with increased appreciation of the role that movement plays in development. Researchers like Stern (2010), Gallese and Lakoff (2005) and Sheets-Johnstone (1999), among others, confirm this. Even Einstein said that, for him, thinking in mathematics involved sensations of bodily movement (quoted in Stern, 2010: 20).

Stern continued: 'Movement is our most primitive and fundamental experience. Many thinkers have long argued that besides the fact that movement comes first in animate evolution and in development, it has a primacy in experience throughout life' (2010: 20).

Professor Maxine Sheets-Johnstone (2009: 168) writes: 'Though we may have forgotten what we first learnt of the world through movement and touch, there is no doubt but that we came to know it first by moving and touching our way through it, in a word, through our tactile-kinesthetic bodies'.[4]

Jonas Torrance, a dance and movement psychotherapist in the Oxfordshire Service for Autism, said:

'although I did not meet Geoffrey Waldon I have read various things he has written and agree with him that movement is the foundation of understanding and that all understanding has its origin in movement. I put Waldon's teachings within that context of movement analysis which was originally pioneered by Rudolf Laban'.[5]

## Bodily integration

Waldon hypothesized that understanding is derived from effortful movement and that the earliest learning is derived from the infant's earliest movements. He calls the fundamental drive to move 'motivation' and infers that this 'motivation' is in some way self-reinforcing, possibly from the pleasure children experience in performing the movements. These rhythmical early movements generate regular patterns of activity from which new patterns, that is, new experience, may be developed, leading to the development of what he called General Understanding (1980).

From birth, and probably even before birth, babies explore and make sense of their environment, by moving their bodies. Soon they are able to move their

heads and limbs. In the early weeks babies get bigger, stronger and heavier and are changing shape as their limbs get longer in proportion to their trunk. They move more during their waking time which is also getting longer. As they grow larger and gain more control, their movements expand to fill the available space. As they grow, the effort required to move against gravity increases so the amount of motive power required gets progressively greater day by day. Waldon suggests that the movements themselves provide reinforcement which in turn leads to an increased supply of motivation. The larger and more effortful the movement, the more feedback or reinforcement it provides, and the better it is for this purpose.

By six months babies are capable of focusing interest through their head, eyes, ears, arms and hands into one direction. At about this time they start to put their hands on things in a very deliberate way, guided by head and eye movements. By the end of the first year babies can both sustain and vary the focus of interest at will. They can easily shift attention from the area of space on one side of the body to the other, or from near to further space and back again. Their bodies are becoming integrated.

## Spontaneity

Babies move spontaneously and for the evident pleasure that they derive from the activity. They move effortfully and the effort forms a part of the pleasure. Babies will start to act on objects in the environment as a by-product of their repeated and rhythmical patterns of movement.

They can grasp things dangling or lying on surfaces around them; they learn to roll over and then to crawl, all the time expanding the space available for exploration. As they explore, objects are encountered and pleasure is found in picking them up and putting them down.

They may by chance find that a distant object can be manipulated by some other nearby object and so find that an object can act as a limb extension. They repeat the action. They bang something on another object and enjoy the noise, or the feeling, or the movement, or the result. Perhaps they reproduce the movement for pure pleasure. They may place one object on top of another. It may stay or it may fall off. Later they pile up many objects. All the time they learn, especially through actions which do not have quite the expected result, and as they notice the discrepancies they continue to learn. The limbs reach across the midline discovering the regions of space normally inhabited by the contralateral limb as they explore the available space using both sides of their body on both sides of their environment.

## Early child development

Gradually they will develop the rhythmic and ongoing repetitive behaviours which are crucial to later development. They will learn to combine the use of different body parts, for example head and eyes with head and ears, arm with

hand, eye with hand, etc., and to develop the ability to shift the focus of attention from one area of their reachable space to another.

In a rhythmic manner babies reach things, get hold of things, then transfer attention away from the hand doing the holding so that that hand releases the object, and so on. Over the second six months children will learn to reach into the whole region of their own space, discover more about that space while fixing on and, both manually and optically, 'acquiring' different objects. Children reach for objects, lose interest in them and release them, picking a second thing up, and so on. At around six to eight months children are able to hold on to two objects and a bit later are able to transfer an object from one hand to the other; not in a very deliberate way, but rather one hand reaching for the object beside the other hand and the object very often getting transferred across.

There is reaching and picking up, but not putting down or deliberate dropping at this stage; but a great deal of picking up and translating with the object often released in a different place from where it was first picked up. As children's capabilities in holding on to objects increase they will frequently reach for an object without previously releasing an object already held by the hand, as if they had forgotten this first object. So the first object drops against the second object.

## Beginnings of tool use

Before long we actually find children experimentally pushing and pulling, tapping and scraping other objects with a held object. Waldon saw this as being the beginning of all hand tool usage.

Children actually handle a variety of objects, which stick out of the hand, may have heavy ends, and so on. By the time they are about nine months they can hold a projecting object and touch other objects with it as if it has become an extension of the hand. At this time the tool use is generalized and one can see it as knocking on objects or banging and holding one object firmly against other items.

During this time the objects are generally in the children's hand, within their grasp, and this occurs in many different ways. Children learn to vary the hand pressures and to use different parts of the hand in accordance with the shape of the object and the direction in which it happens to be held. They have to get used to a very wide range of grips and uses of fingers and fingertips. All this is going on in the second half of the first year and by the end of the first year children will typically have an enormous capacity to use both hands separately and to use an object held in both hands together.

From the accidental holding of an object that may turn into a tool for more distant exploration they start to hold objects in a sustained way and deliberately use them to produce specific effects. So a rake may be used to bring distant objects closer or a spoon used to create a banging sound against a metal object.

All this leads on to general use of hand tools. We might imagine that we have taught a child to use a spoon, for example. But that is not really the case. All we do is to allow children to play with a spoon: they soon use the spoon in the same way that they have been using tools for the past five or six months and are soon able to tip the contents onto the floor and move things around not just into the mouth but increasingly around their own personal space.

## Acquiring and disposing

By the end of the first year children have capacity to pick things up and to release them into vessels of various kinds and during the early part of the second year to put objects back onto or into specified places.

Towards the end of the first year children can usually acquire and dispose in what Waldon describes as 'a kind of rhythmic non progressive' way. They drop something into a vessel; see something in the vessel to take out; take it out; look at it and put it back; then see another object to take out and so on. The pleasure is not so much in the objects themselves but in the taking out and putting in. Waldon also described this as 'Eeyore behaviour'. In A. A. Milne's story, Pooh takes a jar of honey to Eeyore for a birthday present but eats it on the way, while Piglet bursts the balloon that he intends to give Eeyore. However, Eeyore combines the empty jar and the burst balloon into the perfect toy: enjoying placing the balloon in and out of the jar in a deliberate and repetitive manner.[6]

This is pre-continuant behaviour which soon changes into continuous or ongoing behaviour where children pick up an object, dispose of it in a certain place and are able to go back and get another object and dispose of that and then go back again, and so on. This behaviour is rarely seen until early in the second year.

## Continuant behaviour

Continuant behaviour arises early in the second year when children gain, by 'haphazard but effective experimentation', the preparedness necessary to develop their understanding.

Waldon describes continuant behaviour as: 'one of the most fascinating tendencies in development – it arises early in the second year and together with striking and scraping provides the main source of the experience which founds the learning-how-to-learn-tools during the third year'.

Continuant behaviour is related to children orienting themselves in relation to their environment and being able to go back to a particular place at will. It is characterized by the continuant transfer of objects from place to place, or 'picking up and putting in'. This is well demonstrated at Pennyhooks,[7] a care farm for young autistic adults which has been influenced by the Waldon Approach. There, amongst a whole range of farm activities designed to help the student workers to develop their continuant behaviour and their General

Understanding, they move wood from a woodpile on wheelbarrows to where the wood is needed. The wheelbarrows are placed some distance from the woodpile to encourage the rhythm in the movements.

## The learning-how-to-learn-tools

These tools and their precursors are fundamental to the sequence of learning that Waldon observed. Fundamental Understanding, he hypothesized, is a sequential process starting with movement, and leading on to bodily integration, continuant behaviour and the development of the learning-how-to-learn-tools. The learning-how-to-learn-tools are seriation, sorting, matching, drawing, brick-building and coding. Ultimately these are abstract mental operations which underlie our capacity for logic and reason.

Each tool evolves from a simpler precursor version which emerges within continuant behaviour and depends on a developing interest in objects as traces of movement.

Rhythmical placing of objects with slight changes in location, leads to sequencing, the precursor of seriation. Other early sequences include banging with increasing force or scraping in larger or smaller movements. Happening to put things on top of other things leads to piling and thence to more complex brick-building which involves making hypotheses about three-dimensional relationships. Putting something with something which happens to resemble it leads to separating objects into sets and eventually to mature sorting, where incoming information is scanned for its resemblance to existing sets or categories. Trying to find something leads to pairing and eventually matching, where attention is given to differences. Early scraping gives rise to scribbling and then to drawing which leads to understanding of two-dimensional space. At the same time, tool use becomes ever more refined and pervasive. Coding develops differently from the other learning-how-to-learn-tools in that it is an applied version of simple association which starts at a pre-continuant level. Mature coding which is essential to speech and reasoning depends on the development of the other learning-how-to-learn-tools.

All of these developmental steps are necessary for all children and how they can be restarted or strengthened where they have appeared only patchily in a child's development is the foundation of the Waldon Approach. More detail on the learning-how-to-learn-tools is available in the description of the Waldon Approach later in this chapter.

## Atypical development

From his observation of the development of typical children Waldon developed his approach to the teaching of children who have failed for whatever reason to produce these typical movements and behaviours. Where this happens the children can become locked into a series of problems with a vicious circle of reduced motivation leading to reduced movement. This can

lead to failure of bodily integration and an inability to develop a sufficiently unified bodily space. This in turn produces problems in focusing attention through the body and in shifting attention between areas of space. The child's space will be more sparsely structured, leading to a reduced ability to scan the environment and to notice things. During the second year this can also lead to a reduced ability to orient oneself in the wider environment, and thus to difficulties in developing continuant behaviour. Where the problems are less extreme, more stereotyped behaviours may arise with a failure to generate a normal level of variety due to the reduced level of motivation.

# Primary and secondary impediments

Waldon distinguishes between the primary impediment which is the intrinsic problem affecting development, and secondary impediments which are described as learned problems or learned behaviours arising as a result of the primary problem.[8]

## Primary impediments

Primary impediments can be thought of as anything which interferes with the system of motivation and reinforcement and secondary impediments are behaviours which try to compensate for this.

The human body develops in such a way that typically the increase in body size and weight is matched by an appropriate increase in General Understanding. Where this is not the case a disharmony can develop which can lead to further problems. Those actions that would naturally lead to later developmental stages very often do not do so under these circumstances. Or individually learned skills may not come together in a typical manner because they have not been learned in synchronization with each other.

## Secondary impediments

These are the child's learned behaviours which interfere with the growth of General Understanding. They are described as anxiety-avoiding (or as Waldon called them self-handicapping), behaviours and as effort-saving behaviours.

*Anxiety-avoiding or self-handicapping behaviours*
Anxiety-avoiding behaviours may start as a reaction to a perceived sense of over-demand and are designed to avoid the stress and anxiety derived from expectations placed on children which are often beyond their level of understanding. They can become addictive habits which cocoon the children in a familiar and predictable world of their own making and prevent their engaging with the world around them. There are many variants of these anxiety-avoiding behaviours, for example having a tantrum, stiffening the body, averting the

gaze, indulging in annoyingly inappropriate social behaviour or in appealingly inappropriate social behaviour.

### Self-delighting behaviours

Anxiety-avoiding behaviours also include 'self-delighting' behaviours, such as rocking, spinning and hand flapping which are typically seen briefly in early childhood, and which give the child the greatest feedback for the least amount of effort. They fill time with repetitive activity which does not lead to any gain of experience.

Where there is a primary impediment affecting motivation, the failure to develop typical movement patterns leads to the proliferation of those patterns which do develop. Those movements become habitual, through the cycle of reinforcement and motivation described above. As they are among the child's most familiar behaviours and generate much familiar feedback, they are engaged in at the expense of the development of less known movement patterns, and fall into the class of self-handicapping behaviours. They cocoon children in familiar experience and lead to stereotyped repetition. They are defensive, anxiety-avoiding behaviours and this anxiety is not purely evoked by the pressure of others but also by the relative unfamiliarity of other activity where the child has an awareness of the possibility of a less familiar pattern emerging and a consequent sense of potential over-demand.

There are also many children who are 'over-social' in moulding themselves to please or to elicit social responses from the surrounding adults, while their understanding lags behind. Social behaviour is one of the most potent generators of social reward, and external rewards for behaviour give children the wrong messages. In the case of the overly social child the over-social behaviour is rewarded and is thereby encouraged to the child's disadvantage. Their internal motivation is neglected and the real learning suffers.

### Effort-saving behaviours

These arise from a cycle of inadequate motivation and reinforcement and interfere with the typical behaviours which encourage the growth of experience. Adults will generally find short cuts and easy ways of doing things but these are against the interest of developing children who need effortful activity to maintain their motivation. Short cuts save on effort but prevent the child from creating variety or from fully exploring space. They compound the initial problems of inadequate motivation or lack of reinforcement of the pleasure derived from the performance of an effortful activity. Typical effort-saving behaviours will be the use of one side of the body only, or the use of smaller and fewer movements. Sticking to familiar activity, which is characteristic of anxiety-avoidance, also saves on effort.

Effort-saving and anxiety-avoiding behaviours are therefore those which are adopted by a child with any primary disability to guard against or distract an expectation to perform tasks which are perceived as over-demanding.

Waldon believed that learning can only be derived from exploring the outer edges of what is already understood, which is achieved through doing what is

already understood in a more effortful way. This allows more variations to develop more frequently, with a virtuous circle of reinforcement. He thought that the anxiety-avoiding and effort-saving behaviours are often more harmful to the child's progress than the original problem. The Waldon Lesson is designed to minimize these behaviours by reducing the child's need for them whilst enabling their understanding to increase, through the repeated use of the learning-how-to-learn-tools and their precursors.

With time, patience and perseverance there is a real possibility of achieving a positive outcome through the Waldon Lesson. In Robert's case it took five years of daily lessons to reach the stage of his going to a mainstream primary school. Earlier chapters have described his problems even after that. But the results in our case and in the cases of virtually all of the parents I have interviewed for this book which are included in Chapters 7 and 8, have far outweighed the time, effort and energy that were expended.

## General Understanding

Waldon regarded spontaneous, effortful, undirected activity as universal to all babies and infants irrespective of their race or culture. It is simply how the human child learns. He called this learning the acquisition of General Understanding. According to Waldon, General Understanding does not change according to the social environment, country, climate or relative social position of the family in which the child is growing up, but is basic to all human beings. General Understanding is not taught but is acquired internally by children as they play and explore the environment on their own. Waldon's hypothesis is that General Understanding is gradually acquired in the typical child but that it levels off as competition with cultural rituals and social demands distract the older child. General Understanding can continue to develop during the whole of a person's lifetime, whatever their starting point. Whenever individuals move away from their usual routines their General Understanding will tend to be enhanced. Waldon used to say: 'The businessman who goes rock climbing in his holidays is reinforcing his General Understanding – his learning about the world through movement'.[9]

## Particular Understanding

General Understanding is the necessary foundation for the acquisition of what Waldon called Particular Understanding. This is acquisition of particular skills and behaviours taught by adults around children in order to help them fit into the particular culture into which they happen to be born – be they Roman, Sioux, Japanese or British children, living in a high-rise apartment, a mud hut or a palace. In order to take their place in society children need to learn the particular norms of that society. So Particular Understanding is moulded by external requirements and changes enormously according to circumstance. It varies according to country or region, between social classes within the country

or region and will be affected by the gender of the child. It is meant to prepare children to fit into the society in which they are growing up. It is actively taught to children by the people around and supporting them. Table manners are an example of Particular Understanding, as is arithmetic and potty training.

Some examples of the differences between General and Particular Understanding are:

| General Understanding | Particular Understanding |
| --- | --- |
| No right or wrong | Lots of rights and wrongs |
| There are no rules | Rules must be followed |
| No adult teaching | Adult directed |
| Full of experimentation | Full of directed learning |
| The long effortful way is best for the gain of maximum experience | The shortest route is best for maximum efficiency |
| Powered by child's own 'motivation' | Powered by adult direction |
| Reinforced by pleasure | Reinforced by adult approval |
| Adult approval not required or requested | Adult approval unrelated to effort but to socially acceptable behaviour |

Of course both types of understanding are necessary for survival and success in life; but Waldon believed that the later the rules of Particular Understanding are applied, the less they are applied during the first few years of life and the more children are allowed just to play on their own without direction or correction, the more solid will be their foundation of General Understanding and the more easily they will later be able to successfully integrate and manage the rules of their particular culture.

## The Waldon Approach

### Not only for autism

Although the early chapters of this book are about the history, treatment and ultimately the recovery of an autistic child it is important to recognize that the Waldon Approach is appropriate to people with all kinds of learning and physical challenges, and of whatever age. Although the case studies in Chapter 7 are of young people on the autistic spectrum, those featured in Chapter 8 have had a range of different problems so that the potential of the students described is immensely varied. Success is not defined, but I see it simply as exceeding expectations – sometimes marginally but often dramatically!

### The assessment

The Waldon facilitator will assess developmental levels in the first meeting. The chronological age is irrelevant; what matters is the assessment of the child's

developmental age in terms of bodily integration, range and type of movement, continuant behaviour and the learning-how-to-learn-tools. The assessment will consider the student's level of motivation and how broadly based the General Understanding is, how the student manages frustration, how tolerant and adaptive the student is to imposed movement and the constraints of the lesson and how easy or difficult it is to introduce new activities. Crucially, the assessment will try to identify the secondary impediments or learned habits that are likely now or in the future to obstruct the satisfactory creation of necessary experience.

## The Waldon Lesson

The Waldon Lesson seeks to recreate, albeit in a somewhat concentrated form, the conditions encountered by typical infants as their own motivation takes them through the learning processes, and they naturally and without external direction develop and apply the learning-how-to-learn-tools and their precursors discussed above. For the developmentally delayed children all of these indispensable developmental steps are introduced at the appropriate time in the lesson which becomes the vehicle or framework for them to encounter and practise all the development stages which they have missed.

The lesson is designed to create the natural environment of the infant as closely as possible. The student's motivation is the pleasure derived from the action. The teacher/facilitator sits or stands behind or to the side of the student and does not give any facial or verbal clues of approval or disapproval of the child's actions. There is no success or failure. There is simply doing. The facilitator will often place a hand over the student's hand as a guide. This is used as an aid and will be used sometimes when unnecessary so the student never feels the guiding hand as a correction. There are no rights or wrongs. Frequently items will be removed before a task is completed to remove the possibility of an endpoint being falsely interpreted as success and to discourage dependence on that endpoint.

Ideally a lesson of about one hour will be given to the students each morning, and as they become used to and accepting of the routine so the activities practised in the lesson will begin to spill over into their spontaneous activities during the rest of the day. The Waldon Approach does not depend on a team of willing helpers to occupy the child throughout the day. On the contrary it will be most productive if the child has long periods of time when he is left to play alone and hopefully to rediscover some movements or activities introduced in the earlier lesson.

For this to occur it is essential within the lesson to reduce the anxiety-avoiding behaviours and to help the child to get used to acting effortfully and to tolerate frustration. Students learn that their avoidance behaviours are unnecessary in the lesson because nothing is asked of them that they cannot perform and there is no right or wrong endpoint. They also find that effort generates pleasure and that frustration can be tolerated. This increases what

Waldon calls their 'competence' or ability to use their General Understanding outside the lesson.

Within the lesson, praise, approval or disapproval are never given. The pleasure in performing an action is the only reward. In this environment praise could give the wrong message and confuse the child. The children perform actions for their intrinsic pleasure, and they experience the activity at the level appropriate to their own understanding. They must not become dependent on praise or rewards from the facilitator for two key reasons. Firstly, there is a risk of increasing the potential for anxiety as children try to get praise though a correct performance and become aware of the possibility of failure. Secondly, it is essential that the children become independent and active within the context, and at the level, of their own General Understanding – not the adult's judgement. Children will then be able to produce and respond to variations and move forward spontaneously.

Typically developing children will have performed all the actions which take place in the lesson spontaneously and without assistance and direction from an adult. The atypical child may not. So in the lesson the facilitator causes the child to perform the actions. Until the expectation is understood and is within the child's current level of understanding, the teacher will gently but firmly move the child's arms and hands from behind to perform the required movements or actions. The teacher will ignore any anxiety-avoiding behaviours the child might utilize as an escape mechanism, calmly working on with the child as if the behaviours were not present.

When the instructions are carefully, sensitively, but firmly applied, the child will develop a sense of security in the Waldon Chair,[10] and the avoidance behaviours will gradually cease. The child will slowly become less anxious and finally feel completely secure in the environment. Teachers and parents have described to me their own anxiety as the child resists the early lessons and their sense of relief and accomplishment when the child spontaneously sits down in the Waldon Chair with the anticipation of an effortful and pleasurable lesson about to begin.

Once used to the lesson, children adapt to the position, happily engrossed in the performance of the activities, and for the most part they ignore the facilitator behind or at their side. This is exactly what is needed – the teacher becomes a neutral part of the environment. The lesson is therefore sometimes named the 'asocial lesson' to emphasize the importance of the position and attitude of the facilitators. They stand or sit behind or to one side and have an asocial attitude – neither criticizing nor praising, by voice, gesture or expression. The children will have no expectation of being able to influence the facilitator and will focus all their concentration on the lesson activities.

The aim of the lesson is not to 'teach' anything, but rather to encourage/enable the child to play/learn more effectively by him- or herself during the rest of the day. Many parents and teachers find the asocial atmosphere of the lesson very difficult. It is natural to want to shower praise on the under-responsive child for any sign of improvement or development. It is unnatural

and counter-intuitive not to praise when the child does 'well'. However, the lesson is for an intensive period of about one hour, ideally repeated every day. It has its own rules outside of common practice or normal behaviour. That is what makes it special. Both teacher and child grow to understand that this is an environment where conventional rules of behaviour do not apply.

Of course the parent can praise the child outside the lesson; of course the parent must show love and approval. The receipt of love has been shown to positively affect the shape of the brain (Gerhardt, 2004); and there is plenty of time outside the lesson for love and praise and for the important social relationship and bonding between parent and child.

### Learning through self-directed activity

Waldon emphasizes that against a background of stability and emotional security, babies and children develop in ways which are physiologically driven and that for significant amounts of their time their play and movements do not need to be acknowledged by the adults around them. He sees this as a mechanism which prevents early interruptions to infant learning.

## The Waldon Lesson

### A mother's-eye view

It was the morning of Dr Geoffrey Waldon's recent visit to Oxford. In total silence, in an atmosphere of tension that mounted until it was almost palpable, a roomful of adults sat watching as a small boy tried to build an elaborate construction out of blocks. He was attempting to match a model that had been built by Dr Waldon, about one hour into a demonstration of the asocial lesson. The structure kept collapsing on him, and each time he calmly and patiently started again, reworking previous strategies and exploring new possibilities. The tension came entirely from the adult audience. As became clear in the discussion which followed, many (perhaps most), of us were having to stifle a strong desire to intervene and help the child complete the task. To see him trying and failing repeatedly was almost intolerable. But the child, Dan, was oblivious to the atmosphere, completely absorbed in his manipulation of the blocks. His interest seemed to be held by the nature of the activity itself, and he evinced no frustration at his repeated 'failure' to achieve a likeness of the model. The contrast between the adults' and the child's view of the situation was stark and revealing.[11]

I was there because as Dan's parent I was interested in finding out more about Waldon's approach. I had watched Dan 'work' as he puts it once before with Richard Brooks at the Oxford Resource Unit, where he is a pupil. I had also attended a series of evening workshops organized by

Richard on the Waldon Approach, and so my observation of this particular session was informed by some prior knowledge of the principles that lay behind it. I was already persuaded of the value of the approach, but I was unprepared for the impact this session had on me. I say 'impact' advisedly – for it captures the shock of the transition from knowledge to (partial), understanding.

In the earlier part of the session, Dr Waldon was deliberately setting tasks for Dan which exposed and demonstrated his underlying problems. Dan was not entirely relaxed – he played to the audience, became distracted, occasionally he became alienated from the task at hand, and he exhibited a desire to escape through handicap behaviour. It was quite painful, but also fascinating for me to watch this; as a parent it is all too easy to be encouraged by your child's progress (Dan had made great strides since joining the Unit), and to fail to pay attention in a systematic way to problem areas. As Dr Waldon worked with Dan those areas became impossible to ignore. It was glaringly obvious that he had great difficulty in transferring his attention from one area of space to another, that his body does not yet function as an integrated whole and that his perception of the space around him is correspondingly fragmented. These are things which I knew in an intuitive, unstructured way, but was now being forced to pay attention to. My admiration for the asocial lesson as a *diagnostic* tool grew apace, but so did my dismay at the enormity of the problem that Dan still faced in the struggle to make sense of the world. At this stage I found myself thinking: 'okay, this method can pinpoint the problem, but can it really do anything to ameliorate it?'

The episode with the bricks convinced me that it could. Dan, under 'normal' circumstances is a highly anxious child who seeks reassurance from the repetition of familiar, restricted sets of actions and who usually has great difficulty in exploring the world through play. Yet here he was, anxiety set aside, relaxed, absorbed in an activity for its own sake. With great skill and patience, an environment had been structured for him which was allowing him, simply, to play. He was now in a position to amass essential experience which he would never have gained unaided. Our desire, as adults, to step in and 'help' was understandable – but misplaced. It merely showed that we were still having difficulty in absorbing, or perhaps accepting, the underlying principles of the Waldon Approach. Dan did not need our help just then. Encapsulated in the asocial lesson, he was doing just fine on his own.

## The early activities – banging

If a child has failed to make the basic movements which a typical infant makes spontaneously these need to be introduced early on in the Waldon Lesson. Banging encompasses many of the arm movements which are fundamental to

the development of understanding, including the use of the hand and arm as a single unit operating on the environment. It is the precursor of important carrier movements which in turn are crucial to the development of continuant behaviour.

In the lesson, variation is important and as the child becomes more comfortable more variations are introduced. In the early stage the action will be close to the body, in front and not very high, because the child might resist an unfamiliar position and become anxious. Later, bigger bangs at a further distance can be used and the amount of space is extended to the space away from the child; the space above the child; on the chair, the floor, under the table, to the right and to the left. Crossing over the body, which many children find difficult, is very important for bodily integration.

Lessons very often start with banging and this is a good way to relieve tension and to relax children. As they get more accustomed to the actions and the noise, it can get quite vigorous. The rhythms are changed so that it is never monotonous. Banging can be done on a variety of surfaces – the table, a drum, a cushion and as always in every possible direction.

When young children are banging they do not bang flexibly with a series of pivots as an adult does but they use their arms and hands more stiffly. We want to help bigger children to do the same things that they would typically have learnt as a small child, but for whatever reason have failed to so do. So where it is apparent that the infant stage has been missed because the hand/arm movements are poorly coordinated and there is perhaps not sufficient effortful limb activity being employed, we need to have those large students behave as if they were younger and have their arms and hands working together in a stiffer manner.

## Scraping

Scraping is also developmentally important and while banging is usually an away from the body movement, scraping is a multi-directional movement. Unlike banging it involves sustained contact between the hand or held tool and surfaces. Once a tool is used, scraping incidentally encourages an adaptive grasp in order to maintain contact, and results in the production of a great variety of movement traces, vibrational, auditory and visual. In the lesson children will scrape things into containers or push them off the table into boxes to increase their range of movement. There will, as always, be alternate hand use including movements across the midline. Scraping, like banging, starts with paddle-type movements and develops into a fully articulated activity. It can start as a simple hand scrape and develop with tools and different types of objects. Scraping through a tray of pine cones will be different from scraping through a tray of bricks, or beanbags or corrugated iron.

Once the student's grasp is more adaptive and sustained, scraping can be developed into stirring, brushing, digging, scooping, raking and pushing, using a great variety of tools. It later develops into mark making and drawing.

## Picking up and putting in

Picking up and putting in is the characteristic activity of the continuant phase of development, during which children become secure in their ability to repeat a movement in a particular direction relative to themselves and to the environment. The continuant phase leads to an increasing interest in the traces of movements in the environment, particularly in different ways of arranging objects, and this in turn leads on to the learning-how-to-learn-tools.

The Waldon Lesson aims to recapitulate the normal sequence of development of continuant behaviour and the increasing space in which the child can operate.

Movements of objects from place to place become more automatic and develop their own rhythm. Children pick an object up, move some distance either with their arms over the table or, as their understanding develops, with the whole body around the room, and then place the object in the position indicated by the facilitator. Then the whole process is repeated with variations over and over again. Appropriate objects are used as tools for children to produce patterns of movement and, as Waldon and others have hypothesized, all early learning is derived from movement (Waldon, 1980; Stern, 2010: 20).

## The precursors of the learning-how-to-learn-tools

By the beginning of the third year, through their activity in banging, scraping and placing, together with the acquisition of continuant behaviour, typically developing children will have acquired the following precursors which represent the emergent stage of the learning-how-to-learn-tools. They learn to do an activity deliberately after it starts to arise incidentally from continuant behaviour. Children apply each tool, or each way of organizing experience, in an increasingly refined and systematic manner.

**Separating** (the precursor of sorting), is the bringing together of objects which are similar to each other. The teacher will have prepared a box of disparate articles – perhaps four each of buttons, corks, pencils, marbles, cars and animals. There will be a separate container for each category of items. The student, guided or assisted by the teacher whenever necessary, separates each category into one of the containers. It might start with two perceptually distinct sets (Figure 5.1) fir cones on the left, bricks on the right, requiring large movement to either side of the trunk. The student comes to notice the distinct categories and begins to anticipate and to participate more actively. Sets may also be functionally distinct – for example rings can be put on a stem but bricks are difficult to put on a stem and have to go somewhere else. At this stage the emphasis is on large bilateral rhythmic movement. Later there may be more sets in more areas of space.

**Pairing** (the precursor of matching), is the process by which through a process of elimination of differences, with few pairs available, students are prompted to bring them together within a rhythmical series of movements. This is repeated until the students begin to notice and anticipate the pair, at
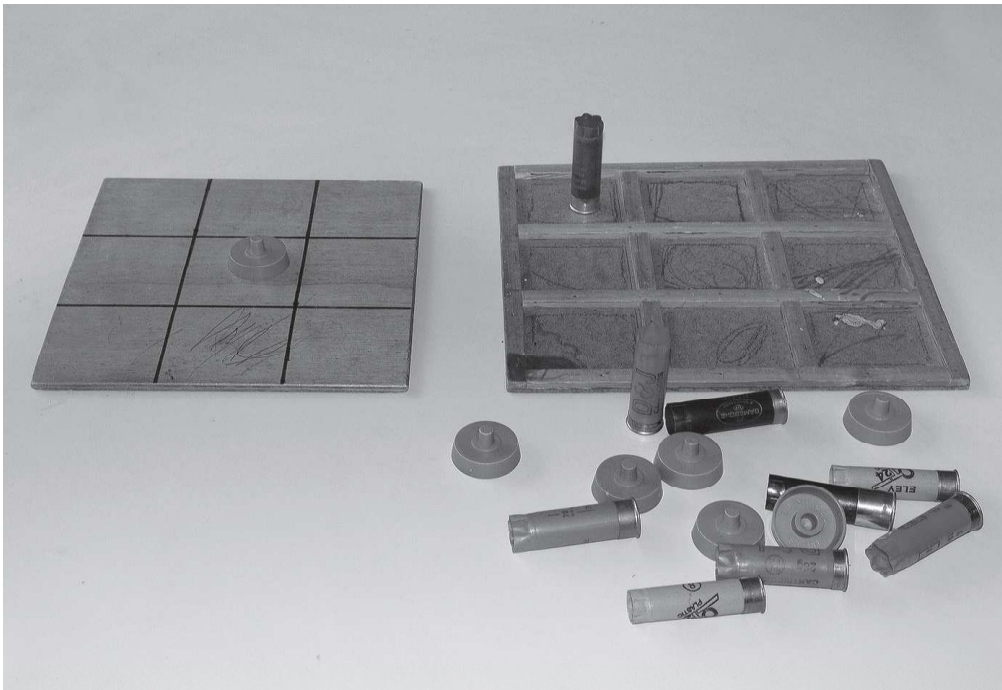
Figure 5.1    Separating using two small H-Boards.

which time they take over the finding part of the activity. Once this level of engagement is attained the space might be gradually increased so that the students may be wandering round the room looking for something. At this stage students have to bear something in mind. As with all progression within the Waldon Lesson, motivation has to be built up through the effortful practice of the earlier activities to become available for activities which are less familiar.

**Sequencing**, defined as 'the placing of things in order'[12] (the precursor of seriation which is defined as 'the action or result of arranging items in a sequence according to prescribed criteria'),[13] is the process of putting things or doing things in a rationally discernible order. This may be done in a multitude of different ways, perhaps with differently sized bricks or containers. It emerges and follows on from continuant behaviour. Sequencing, or rhythmical arrangement of objects or of perceptual experiences in space or time, is therefore dependent on continuant activity and on the space structuring which precedes it. An example of sequencing often used in the Waldon Lesson uses two wooden boats, one of which contains ten men (Figure 5.2). The child can be prompted and assisted by the facilitator until he understands and becomes able to extrapolate and continue independently as he moves the men one at a time, using alternately his left and right hand, to fill the empty boat. As the student develops different patterns will be used, such as one man, one space, one man, one space; and then ever more complex patterns will be introduced.

Practice in continuant behaviour, sequencing and later on in seriation will be included in all lessons. It leads to students' recognition of their own patterns of behaviour and eventually to the extrapolation of the behaviour of others.

**Piling** (the precursor of brick building), simply involves putting things on top of other things. It is vigorous and clumsy and has lots of accidents and no discernible endpoint. Gradually this gives way to more stable and deliberate construction. It is a type of basic sequencing which, as objects start to become more interesting, and the carrier movements more automatic, leads to more active attempts to place things on top of other things and hence to discoveries about what works and what doesn't.

**Scribbling** (the precursor of drawing and use of tools), is the process of making undifferentiated marks on a surface. A child will hold an object in apposition to a surface for a prolonged period of time and pushes, pulls, makes circular movements, in fact all the sort of arm and hand movements previously associated with banging and scraping, but now holding an object. Things in apposition tend to leave traces. A facilitator may start with simple scribbles and might develop over time to geometric shapes – circles, squares, triangles – whilst the child may be encouraged to make similar marks. These marks and traces are the beginnings of graphic productions, or drawing.

All of these precursors will be within the capability of typically developing 27-month-old children and will have been learnt by them through self-directed experimentation and play. It is of critical importance for children with difficulties that they are all practised in the Waldon Lesson and that continued and spontaneous practice is encouraged, by careful placing of objects in the play area, during the rest of the children's day so that they can continue to play and to learn on their own.
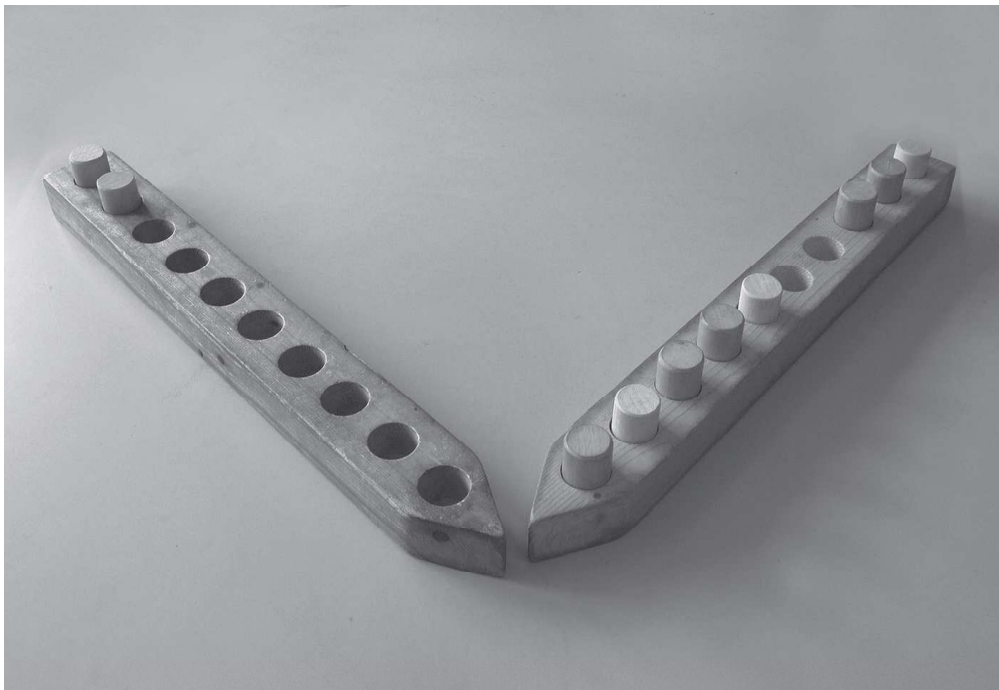


Figure 5.2   'Men in Boats'.

Used in many different ways to develop sequencing and seriation using alternating hands. They were made by Escor Toys, now sadly out of business. They are now available at www.autismand understanding.com

## The learning-how-to-learn-tools

With the precursor activities absorbed, typical children are ready to assimilate, on their own, the experiences derived from the use of the more advanced learning-how-to-learn-tools Their developing General Understanding leads them on to the developmental steps which Waldon calls the learning-how-to-learn-tools, which provide a framework for understanding both typical and atypical development. The learning-how-to-learn-tools grow spontaneously from activity. The child practises the activity, accidentally generates variation, starts to notice the new variant as it happens more often, and then deliberately reproduces it. Through their self-directed exploration of these tools children further develop their General Understanding and it is on this firm foundation that the remainder of their lifetime learning will be based. The lesson is designed to help atypical children absorb all of these tools as far as their potential will allow.

**Sorting** (which follows on from separating), is the process of putting things together in groups according to what they have in common. Similarities are registered so that sorting becomes the basis of classification and categorization. It is the process by which we group experiences and develop collections of things such as stamps or Chinese snuff bottles. Sorting is a straightforward development of separating and differs in the complexity of the attributes which the items to be sorted have in common. In playing sorting games the facilitator may have the containers in different parts of the room, at different levels, even hidden in cupboards or up ladders so that the child expends effort in finding the appropriate container – pre-seeded with one or two of the appropriate category or class of object being sorted. Remember, the more effort that is expended, the more fun is the activity, and the more fun there is, the more motivation is engendered.

As true sorting develops the student has to make decisions about which things go together and eventually how many sets are needed. Watching Mary Jo give Edward a lesson (see Chapter 7), he had a pile of disparate objects and she had a cupboard full of different containers. Each time Edward decided on a new sorting category he had to rummage in the cupboard for an appropriate container thus maximizing his independence in establishing categories – true sorting rather than separating, where objects were being allocated to a fixed number of containers.

**Matching** (which follows on from pairing), is the process of eliminating things which are different in order to find things which are the same as something else. Pairing can continue up to a fairly advanced level of perceptual discrimination as objects become less and less identical and it develops into true matching via the use of increased space, abstraction, consideration of multiple features and redundancy – an excess of similar possibilities – which forces both more effortful scanning and a sequential ordering of more and less likely matches, so that the eventual match is the best available rather than the only one. Matching and pairing are often carried out with the use of an H-Board (Figure 5.3).
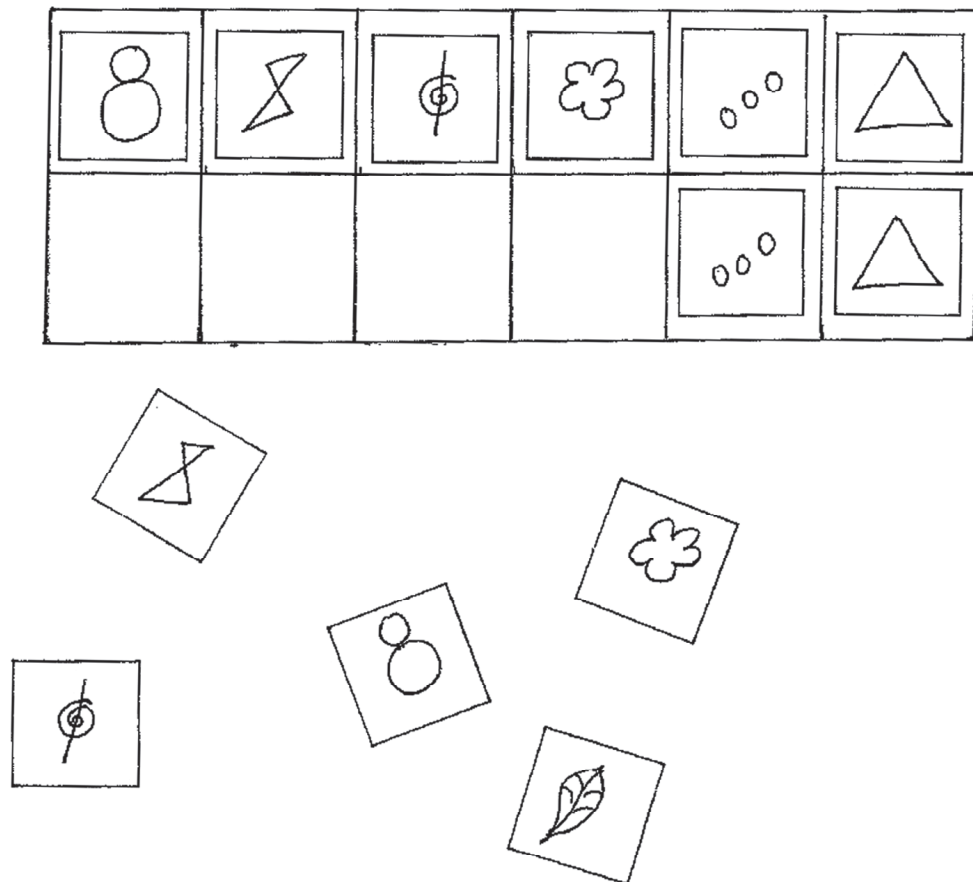
Figure 5.3 Matching cards on a short H-board. Simple monochrome outlines. The number of redundant cards and the space which needs to be searched can both be increased as the student becomes more comfortable with the level of matching involved.

Cards become more and more abstract as the card becomes a line drawing, then a pictogram and finally a symbol. All these progressions may take months or even years of patient work, very gently extending the child's comfort zone but without inducing anxiety. Whilst matching, children begin to notice differences in form, size, orientation, colour, number, etc. They will recognize one-to-one correspondence and be able to separate out items of different correspondence. Matching increases the number of things which are paired – there may be 10 kinds of animals, from photographs, to models, to different textures, etc. all kept in one group, whilst non-matching items are discarded or placed to one side.

Sorting and matching are reciprocal and largely functionally inseparable, but, counter-intuitively, matching is about noticing differences and sorting is about finding similarities. Matching is the process which helps us to find something specific we need. Sorting is how we organize incoming information and allows us to recognize the need for a new category, or combination of categories, of which an item may be part. Sorting is open ended because new categories or sub-categories can emerge at any time. Developmentally, sorting comes before matching so it will usually be introduced at an earlier stage.

**Seriation** follows on from sequencing and is at the heart of Waldon's theory. He refers to it as 'pervading'; that is, spread through or into every part of his theory. It is from seriation that we learn to extrapolate and predict. Waldon writes: 'seriation is the basis of inferential thinking, the origin of deductive reasoning' (1980). The development leads from 'motivation' (in the Waldon sense of the word), through rhythm to continuant behaviour, then via sequencing, to seriation, which is the lynchpin of the learning-how-to-learn-tools.

There is a prescribed sequence for almost all constructive activities, such as getting dressed or going to the toilet, or delivering the post or playing a team game or cooking. Poor memory of such sequences and disorientation or confusion during them implies lack of familiarity with and lack of understanding of the component parts of the patterns and connections within them. But without an understanding of sequencing daily tasks can take forever. Pamela remarked to a friend that helping Robert to get himself dressed could take all morning. [14]

It is interesting that two psychoanalysts at their first meeting managed to say, almost simultaneously, 'the difficulty for the autistic child is in sequencing'.[15] This difficulty is at the centre of the Waldon Lesson.

## Intersectional Sorting

The advanced student will be introduced to Intersectional Sorting which is a type of sorting game, played on a 12×12 H-Board (Figure 5.4), which requires looking at a card, then looking first at a vertical and then at a horizontal key and then deducing
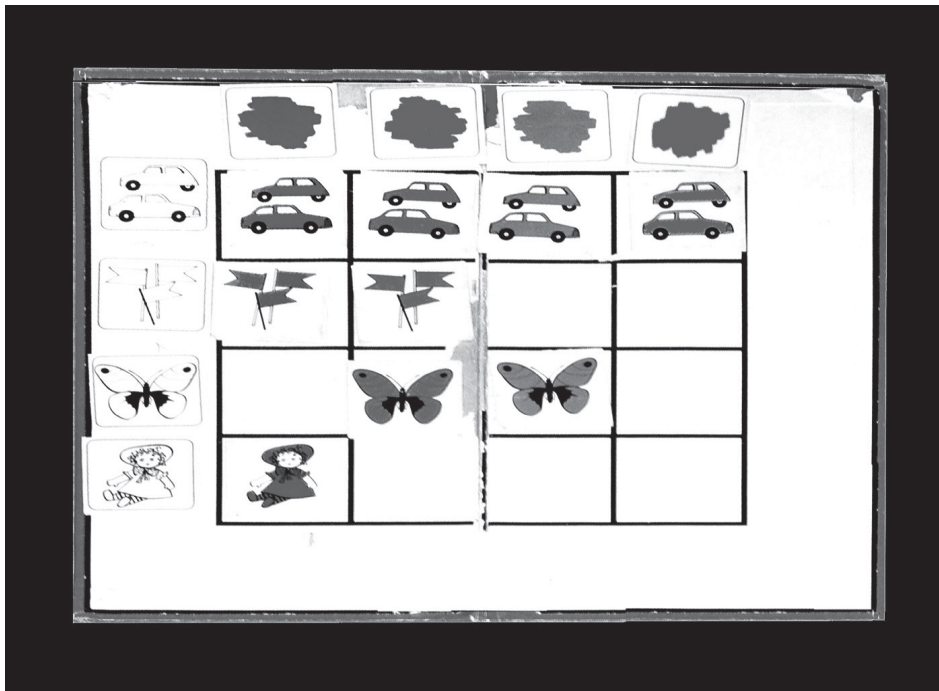


Figure 5.4  This is a simple example of Intersectional Sorting and in the original, each of the blobs on the top line and the various objects are in different colours.

the square in which the card belongs. This helps to develop the ability to consider multiple and variable criteria referring to two (or more) axes. In Intersectional Sorting, seriation, sorting and inferential thinking all come together.

**Brick building** (which follows on from piling), promotes the understanding of three-dimensional relationships and of necessary, but sometimes hidden, supports. It involves the discovery of direction and distance, of relative position and functional relationships. It leads to the ability to recognize, follow and interpret the changes of position, translocation, reorientation, deformation, which are the basic components of behaviour, both of materials and people.



Figure 5.5    Brick building at the Autism Base, St Nicholas School, Oxford.

Brick building has thus both a practical importance and an abstract application. In a practical way it enables understanding of how things are put together. In an abstract way it is an important basis of deductive thought, in calculating that: 'If I do this then that will probably happen'. Most importantly, Geoffrey Waldon suggested that brick building is the tool that develops understanding of the behaviour not just of inanimate materials, but also of human behaviour in terms of movement in space.

Typically, in a Waldon Lesson, the facilitator will build a model and with a second group of bricks the student will build a lookalike, copying the facilitator, movement by movement (Figure 5.5). As the students gain understanding from the movements they themselves have made, the complexity of the structure will increase and eventually students will be able to copy or construct more complex models without support. To successfully recreate the model, from further apart,

requires a fuller understanding of its structure because the students need to create a picture in his mind before physically reproducing the three-dimensional original.

**Drawing** (which follows on from scribbling), is a particular form of tool use which leads to the understanding of two-dimensional space. It is important because human beings make two-dimensional marks such as writing on paper or drawing in the sand and we have to be able to read and write them. In the lesson this is a natural development from scribbling.

**Coding** is essential for conventional language and is the process by which one thing can be allowed to stand for another. In Morse three dots are code for the letter S. Coding is based on the capacity for simple association but can only develop when the other learning-how-to-learn-tools are in place and interconnecting. It does not have a specific precursor but derives from the overarching pattern of development of General Understanding (Figure 5.6).

In terms of early speech, simple association can be seen to operate from a pre-continuant stage. For example, a 12-month-old baby may well associate several word sounds with people, objects or events. However, it is not until development occurs within the other learning-how-to-learn-tools that coding can start to be used systematically to fix or clarify notions. This is because true coding requires flexible sorting and matching. A practical example of coding is the acquisition of new words, where the child has to hold a word in mind, even in the absence of the object or activity, while also discovering its scope of reference.

Thus pairing games are initially played on the basis of perceptual similarities, but once the student understands that all objects must have a match, it becomes possible for the match to become more conceptual – to involve objects which have few perceptual similarities but have a related conventional function and may share a name. So two very different objects may both be called 'ball' and be related by being the least unlike of a set of pairs of objects.

## Expressive language or speech

Expressive language or speech generally lags behind receptive speech or comprehension. In their anxiety for the child to match conventional milestones parents may be anxious about their child not talking and it can be hard for them to accept that without understanding of receptive speech any expressive language is likely to be unintelligible and often echolalic. Pamela and I thought that if only Robert could speak all his problems would be resolved. Waldon continually counselled us to wait until his General Understanding had reached the appropriate level.

## Moving outdoors

Once the activities in the lesson have been well established and the student is secure in the Waldon Chair, it is both fun and valuable to use the outdoors as a large workshop. Here you can extend children's range of movements by using a climbing frame. Start with small apparatus and have them walk round the
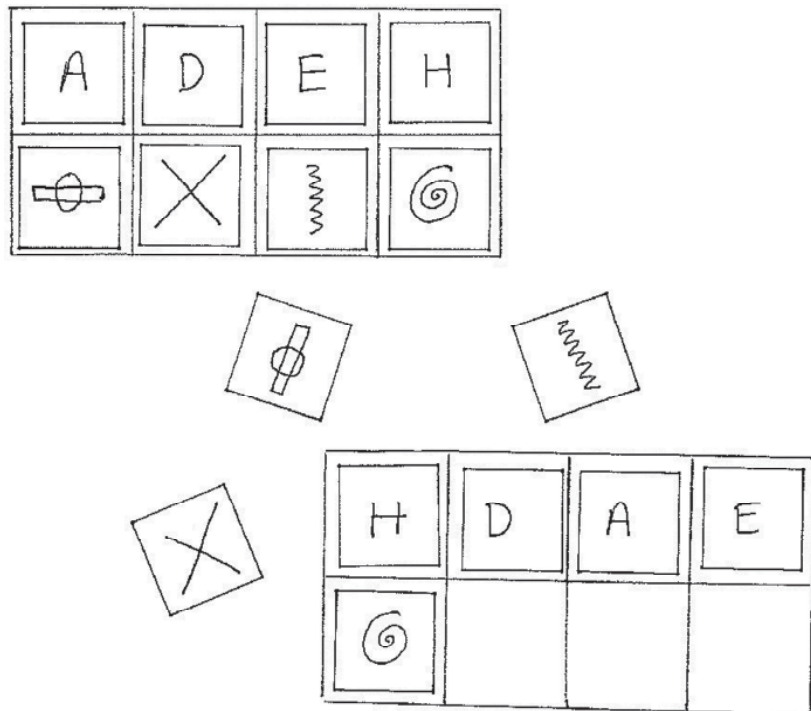
Simple coding utilizing letters and patterns. The first tray contains a key showing which letter goes with which pattern. The student refers to the key when placing the pattern cards on the second tray. Usually done on longer H-board.
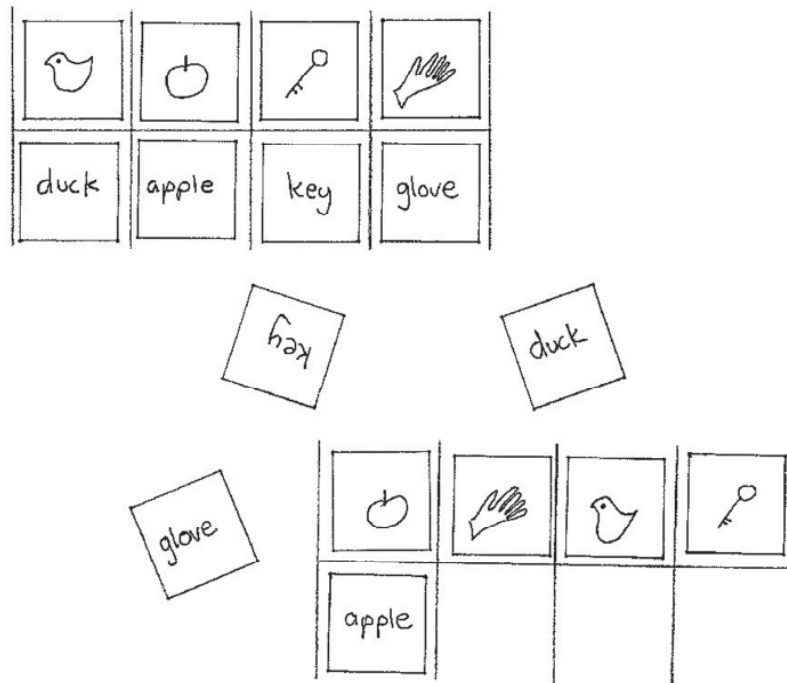


Coding using pictograms and words. The first tray contains a key showing which word 'goes with' which pictogram. The student refers to the key when placing the words on the second tray. Usually done on longer H-board.

Figure 5.6

garden without touching the grass. Use tables, chairs, stepping stones, small ladders, wooden boxes – whatever is at hand. Keep it at a low level and as their confidence increases introduce more challenging arrangements. Intersectional sorting can be fun with coded children (one a duck and one a teacup) coming together on squares. At Bishopswood School (see Chapters 6 and 8) these activities are called 'Walking Waldon'.

There is no upper age limit for using the Waldon Approach. The work of the Leeds Waldon Group exemplified by the story of Michael in Chapter 8 clearly demonstrates this. But the earlier the lessons are started the greater the possibility of progress. It is increasingly recognized that early intervention is extremely important, especially in reducing the impact of the avoidance and self-delighting behaviours (Lytel, 2008). Waldon was as helpful with 'hot housed' and stressed Manchester Grammar School students[16] as with those with cerebral palsy or with remote children.

   Parents and teachers who would like more structured and detailed information on the lessons are recommended to read *Every Child Can Learn* (Stroh et al., 2008). The authors of that book very successfully used this approach to help many children.[17] The book also includes an instructive DVD.