Laboratoire PsyEf

Project Report

PART 2

INTERACTION STUDY

JANUARY to DECEMBER 2012

Céline Chabot, Anaïs Fer, Régine Michel,
Véronique Morra, Marie-Paule Thollon-Behar

TRANSLATION by James FLESHER

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INTRODUCTION

This report constitutes part of the research mission of the CTRDV (Regional Technical Centre for the Visually Impaired – Rhone Alpes). It covers research carried out in 2012 with visually impaired children.

The observations within are the result of the work of the five participating researchers:

Véronique Morra, Psychologist, creator and coordinator of the research project, writer of this report and in charge of processing and developing the results.

Anaïs Fer, Speech therapist, carried out the part of the report concerning the lexical contribution of the workshops and carried out a full proofread of the report. She has continued her research work having created a presentation in September 2012's *Ortho Magazine*.

Régine Michel, in charge of the FAF (French Federation for the Blind and the Visually Impaired) project, Pre-Reading/Language/Images, contributed to proofreading the report and wrote the conclusion highlighting the role of this collaboration in the development of her own project.

Marie-Paule Thollon Behar, Doctor of Developmental Psychology, organised and structured the work sessions. She verified and validated the entirety of the report.

Finally we would like to thank Jean Marie Besse, Professor of Developmental Psychology and Director of the Psyef Lab, for welcoming us twice, into his team.

This report presents the results of our study and our investigations which were carried out through days of sessions with users of learning kits, organised by the FAF. It will be available to read on the site of the FAF's Pre-Reading/Language/Images project. It will be complemented by a further internal document which is focused on the contribution of the project on our organisations, and the original version of the report in French.

We would also like to thank Mr Bachon, the President of the association, the Director General Mr Lapierre, the Administrative Council of the PEP and our contact Mr Gurgo, and the directors of our organisations Mr Eglin, Mrs Malet and Mrs Cornillon, for the means they put at our disposal and for the trust they put in us.

PART 1: INTRODUCTION TO THE PROJECT

I – THE FAF PROJECT

The FAF, through **Régine Michel**, has created adaptations of works of children's literature, in collaboration with organisations specialised in the care of visually impaired children: **L'arc en ciel** (Rainbow) in Marseille, and **INJA** in Paris.

These 'learning kits', each one focused on an existing picture-book, are enriched with a number of additional resources: a soundtrack, an audio CD, adaptations of the book in large print and in braille, with tactile illustrations, and an educational booklet. This booklet is a guide to the activities to run during workshops and encourages the children to carry out various sensory explorations. http://pre-lecture.faf.asso.fr/

The objectives of the FAF in using the learning kits are: to allow visually impaired children to have access to high quality children's literature which is fun to read; to develop their knowledge, concepts and mental images; and to share methods put in place for professionals by sharing the learning kits and by training personnel to use them while following specific protocols.

The creators of the project also want to organise research on the process of rolling out the workshops and learning kits. Mrs Nathalie Lewi-Dumont, lecturer and researcher, conferences director for linguistic sciences at INS HEA (the Higher National Institute of Research and Training for Young Handicapped People and Adapted Teaching Methods), carried out over the course of two years a direct observation of the first three series of workshops. Some initial observations were also carried out from 2008 to 2011 thanks to the support of Mrs Maya Hickmann, Director of Research for the CNRS (National Centre for Scientific Research) at the Combined Research Unit (UMR) 7023 at the University of Paris 8. She carried out a pilot study

on the development of certain skills during the workshops (narration, categorisation, naming) and contributed to the exploration of new directions for research.

The FAF project generated a European programme, **Comenius Eveil**, bringing together six countries (Germany, France, EIRE, Romania, Slovakia, Czech Republic), overseen and coordinated by **Céline Chabot**.
http://www.comenius-eveil.eu

Our participation in this European project has been of great benefit and allowed us to gain understanding of the education policies of other countires, and also of the activities, practices, tools and opinions of others.

II – THE SHARED INTERESTS OF CTRDV/SAMS/FAF

The desire of the creators of the project to share the experience of professionals in the field and to question learning tools and their use fulfilled the needs of the two organisations in which we work.

In order to have a clear view of the means necessary for the ‘research’ mission of the CTRDV, the resource centre in the Rhone Alpes region, we carried out an initial study. The objectives of this first study were to define the problematic issues in the field, and to highlight the needs of children and professionals so as to offer original training methods.

Moreover, we want, as organisations at the heart of the Medico-Social Action Service (SAMS) of the PEP6, dedicated to children educated at the René Pellet School Complex, question our professional methods and especially interdisciplinary work.

Given our limited means, both in terms of manpower and finances, we opted for a research project taking place at SAMS. We used for our project the 1986 definition by the INRP (National Institute of Educational Research) of a 'research action': "*research in which there is a deliberate effort to change the status quo – research with a double objective: to change the status quo and to aid understanding of these changes"*.

For this initial research/action study, the support of university academics seemed indispensable. We contacted a Laboratory at the University of Lyon 2, the team researching Cognitive Psychology for Education and Schooling (PsyEF) led by Professor **Jean-Marie Besse.**

Marie-Paule Thollon-Behar, doctor of psychology, member of the lab, who regularly leads research projects in the sector of early childhood, led the organisation of the working group, a methodological collaboration to which she brought her scientific knowledge

III – STRUCTURE OF THE WORK PROJECT

1 – THE GENERAL OBJECTIVE

The population of visually impaired children is entirely heterogeneous. There is a great variety in how the issues manifest; the type of impairment (total blindness or not); the age at which the impairment manifests; if there are any associated issues; and if the child and his/her family have been assigned help early on. Every child is unique in this respect, and has an individual situation and skills.

We constantly perceive our environment using multiple senses. Signals are processed, associated, and developed, and allow us to identify and locate objects, people and events, and to give them a meaning. Different signals can give us the same information. We can identify or locate an object or event by the noise it gives out, the smell it emits, its position in the environment. A child with a sensory impairment therefore has knowledge, original mental images, which are his/her own just like anyone else, and are perfectly efficient.

However, in a place created and adapted by and for people in full possession of their senses, a visual impairment creates problems when trying to access information quickly. Of all our senses, only vision allows for instant and total perception of one's environment. Moreover, most teaching tools and ways of transmitting information are audiovisual.

The problem that faces us as professionals is trying to make the environment and the tools we use accessible to allow children to enhance their knowledge.

Even though the FAF kit is an adapted tool, we observed that the members of the group still find difficulty in making the full range of activities accessible to all children.

We therefore decided to observe and analyse interactions between adults/children, children/other children and adults and other adults in workshops so as to identify the elements and situations which impede information exchange.

2 – LITERATURE REVIEW

By interactions, we mean verbal and non-verbal information exchanges, actions which allow us to communicate and interact with members of the group. These interactions have a didactic aim.

Our methodology in workshops is based on the interaction models of the Constructivist and Socioconstructivist schools, which largely dominate educational practice today.

Jérôme Bruner relied on the works of L. Vygotski (the role of language and social relations, the Zone of Proximal Development,) and of J. Piaget (Categorisation, the clinico-critical method). The work of J. Bruner describes the methods through which an expert can guide a novice through a task. The tutor supports the activity undertaken by the child through a number of approaches which allow the latter to resolve a problem with which he is confronted. The process of support is comprised of six interactive functions:

- Engagement: The adult must engage the interest and attention of the child
- Reducing the margin of error: the adult simplifies the task and reduces the number of steps necessary to achieve its goal
- Keeping focused: The adult must avoid the child losing focus and miss the aim of the task
- Signage defining characteristics : the help understand the differences
- Minimising frustration: Avoid errors making the child feel like a failure
- Demonstration and use of models: The tutor carries out the task in the hope that the child will imitate

We aim to apply these principles in our sessions.

Language and communication have been the focus of numerous studies concerning visually impaired children. Nowadays it is accepted that for most visually impaired children who aren't affected by any associated issues and who have had help from an early age, blindness has little impact on language acquisition at school age.
The idea of 'verbalism', i.e. words being acquired without a basis of perception, has little impact on the acquisition of knowledge, so long as there are more opportunities for perceptive experiences. (Y. Hatwell 2003).

Clara M. Linders (1995) in *Floating Language* makes the same observation and redefines the idea of 'verbalism'. She locates the specific risks for visually impaired

children not in the construction of conceptual thought but in the difficulty of translating abstract knowledge into concrete knowledge.

Children acquire their first words in direct contact with their environment, objects, and situations. Direct sensory experience with these different references allows the child to develop some initial concepts and to acquire a basic vocabulary. Words thus acquired create a link between the body and the environment, and fix actions in mental images.

As his/her brain develops, thanks to the child's family and through various experiences, the child's vocabulary develops and is organised. The child is then able to acquire words and concepts through language alone. But he/she can only pass from an abstract understanding built by language to a concrete action if he/she possesses a basic vocabulary well fixed in experience with real life. It is then important to make sure that a visually impaired child possesses a basic vocabulary which is sufficiently evocative in terms of experience and action to allow the child to move from a concept to a realisation of that concept in a natural and automatic way.

3 – OPERATIONAL OBJECTIVES

1 – Film the sessions to observe interactions

2 – Classify verbal and non-verbal interactions in grid-tables

3 – Have multiple people deal with the information so as to limit the subjectivity of the observations.

4 – DEFINITION OF HYPOTHESES

We have defined some explanatory and empirical hypotheses to qualify difficulties of interaction and to guide our observations. We believe that difficulties in interaction are more contextual in origin than verbal or non-verbal.

Hypothesis 1:
The adult often intervenes too quickly by way of verbal or physical help, which stops the child from being autonomous in his/her exploration and sensory discovery.
Why? What are the causes? How often?

Hypothesis 2:
Interactions of visually impaired children who have visual access to the surrounding area with blind children are similar to the interactions of sighted adults with blind children.

5 – METHODOLOGICAL APPROACH

A – The children in the group

We set up a group of four children (three girls and one boy), aged 7 to 8 (born in 2004 and 2005), who were just beginning to read and who had been educated in the same classes at school. Three of the children use Braille (two beginners, one a competent reader), and one child works with large print text, having been flagged for having difficulty in reading.

Two of the children don't have visual access to their environment. The other two children have sufficient vision to perceive and visually identify people, objects, actions, and movements within a small area.

The project was explained to the children's parents and we sought their consent to film the sessions. The work carried out was shown to the parents after the workshops, and the book used to support the workshops was given to the families on this occasion.

The children were not chosen based on any criteria related to the research but because of their need for testing.

B – Carrying out the workshops

The learning kit chosen is focused on the picture-book *La très petite poupée* (*The very little doll*) by Marie-Hélène Delval (©Bayard Éditions 2009). We chose this kit according to the age of the children and due to the park adjacent to the school. The story takes place in a park and so this allowed for the development of the workshops.

We ran 8 workshops, each an hour long, from 12:30 to 13:30 from 27th February to 21st May 2012.

The same plan was used for each session so as to define a clear and structured framework for the children. However, the activities organised within this framework offer great freedom of action and of expression. The session begins with taking a register and putting on name badges. Then we ask the children to go over the story and activities from the previous session, then we ask them to read aloud with the soundtrack CD. We included reading aloud in the first six workshops. The varied content of each workshop followed. The session ends by returning to the group at the playground before going back to the classroom. The last two workshops were dedicated to looking at the book and the tactile illustrations. There is an opportunity for recurring interactions and new situations in each workshop.

C - Development

In order to analyse more closely, the sessions were filmed zoomed out and were zoomed in later, then transcribed, so as to be more easily analysed. Group thought and analysis of the films took place during eleven sessions each of three hours between January and December 2012. The group consisted of 5 professionals.

- The organisers of the workshops (A. Fer, V. Morra)
- The creators of the project (C. Chabot, R. Michel)
- A researcher of Developmental Psychology (M.P. Thollon Behar)

Maud Cuzin, a psychology intern, filmed the sessions, participated in the majority of the sessions, and transcribed a video-session. At the time of writing she is compiling an additional part of the report on adult/adult interactions. Moreover, a personal report of each participant took place between each meeting. All the sessions filmed were transcribed in their entirety.

IV – RESULTS AND POINTS FOR DISCUSSION

We transcribed the videos in their entirety and were hoping to formalise our observations in grids allowing us to classify the different types of interaction. Despite the written transcriptions, classifying the interactions meant we needed the audio-visual material all the same. We didn't have the necessary software to process the data.

The hypotheses were not sufficiently precise and we very quickly realised that they did not sufficiently explain what they should. The aim of concretising these interactions is interesting but requires more driven preparation beforehand, i.e. a more precise definition of the problem, more detailed hypotheses, and the creation of

a pre-conceived analysis grid-table for quantative and qualitative treatment of the information. We had not allowed enough time to carry out such a project.

But to simply concretise verbal interactions did not suffice to fulfil our professional needs. Very quickly questions about the skills of the children in relation to their age forced us to widen our field of investigation. We did not possess a precise awareness of the skills of each child in the group.

Moreover, the video allows an initial analysis which allowed us to improve our work, to adapt our behaviour without having to wait for the formalised data. It is often the aim of a research project such as ours to encourage immediate change in workplace behaviour which seems ill-suited, without waiting for the complete collection and analysis of the data.

Our project report is thus a formalised setting out of our way of thinking. It is a collection of observations and reflections which we have illustrated with examples that have been chosen for their representative value. We have clarified them and analysed them using professional references. We have also formulated different questions which could lead to new, more specifically targeted research.

PART 2: FEEDBACK FOLLOWING THE INTERACTIONS

For this initial test-out of the kit, we offered workshops both in the classroom and outside. The first workshop in the classroom allowed the children to understand the framework and objective of the workshops, the story, and the large and small teaching aids. The two following workshops took place outside. We went to a nearby park to bring certain parts of the story to life, but also to help the children gain a concrete understanding of the different parts of a play-park, their physical properties accessible by the different senses, and their physical location. The three following workshops allowed us to explore certain parts of the story more deeply, by setting up different situations, developing the exchanges between the children, putting different semantic fields to use, all while making use of multi-sensory activities. The last two workshops were dedicated to reading, tactile exploration of the illustrations, and drawing illustrations based on real-life objects.

The team organising the workshops was composed of a speech therapist and a psychologist. Our objectives were thus orientated around the development of written and spoken language, reasoning and concepts, by way of a sensory/locomotive approach. The multidisciplinary approach with a group of four children allows us to pursue several objectives:

- **To bring to life perception and movement-based experiences for the children, while linking them with the appropriate vocabulary for the situation, to enrich concepts and mental images.** The activities in the workshops allow children to pinpoint the sensory characteristics of different objects and situations, to classify them, categorise them and associate them with other things they know. The objects and situations offered allow for various sensory explorations and experience-oriented activities, while alternating between time for discovery and time for language-focused work. The adult acts as a mediator, allowing for experiences to be developed and associated with appropriate vocabulary.

- **Use skills to find information by using different senses.** The workshops allow the children to experience their environment in safety and so to test out strategies, and use their senses and different methods of perception together or separately. At the same time we make use of the semantic fields of the different senses. The children are encouraged to think about the different methods to use to communicate well and to make themselves understood better.

- **Use their reading skills and tactile images**. The book we used during the workshops was selected by the creators of the project for its literary quality. It offers organised and structured language, a classic narrative scheme, and a specifically written syntax. Repeated reading at each session allows the children to memorise the text and its makeup. Memorising the text facilitates reading in the last two sessions. The workshops allow for support of exchanges of language, questioning, expressing oneself, making a point, and exchanging within pairs or with an adult. Working using tactile illustrations is also offered allowing for tactile exploration techniques to be worked on.

- **Developing self-confidence and interactional skills by indulging their curiosity**. Throughout the sessions, each child is encouraged to express his/her

opinion. Through the adult's questions he/she is encouraged to anticipate his/her actions and their consequences, and to compare his expectations with what actually happens. Thus he/she uses his/her judgement, and engages it with that of others. The workshops allow to focus on verbal and non-verbal interactions. Each child has the time to express him/herself, to ask others to specify what they do or do not understand, and so better understand how other people work.

The analysis of the videos using an observational camera angle focused on these interactions allowed us to question our practices.

I –REFLECTIONS ON OBSERVATIONS OF ADULT/CHILD INTERACTIONS

1 – ENCOURAGING THE CHILD TO SPEAK

A – Placing a framework and stating the objectives

So that the children benefit from the workshops and can express themselves freely, it is important to define a framework and to state our expectations to the children before each session. When they start an activity, they should have a goal. We saw in the videos that even if the objective is clear for the adults, that doesn't necessarily mean it is clear for or understood by the children.

For example, during the activities at the park, it is necessary to remind the children regularly what we have come to do and why. If not, the play-based form that the activity offered may take (skipping, looking for objects etc.) may quickly become a purely playful activity which it will be difficult to adapt to the following activity or session. The activity becomes more careless and the children may become less interested in the consequences of their actions, and focus instead on what interests them in the game or activity. They may develop some skills in this way, but not necessarily those we expect of them.

B – Recording the children's impressions

In the workshops the children experience moments from the story. To guide them in their discoveries we ask them questions. These questions have two aims: recording the children's impressions / mental images; and supporting the activity.
The first objective is to record their impressions. It is therefore important to make it clear to the children that we are interested in 'What you think', not a right or wrong answer.



It is important to specify our expectations. Indeed, teachers at school will frequently ask questions, and children answer questions trying to satisfy the expectations of adults. They have developed behaviour and strategies to help them answer questions, coming from implicit and explicit knowledge taken from classroom situations.

O. Maulini (2005) and J.P. Astolfi (2008) have studied the status of asking questions at school which is 'the heart of the pedagogic activity'. Asking questions is used to achieve various objectives: As a simple introduction before inputting one's own ideas; before an exercise to facilitate understanding; and especially to evaluate. Asking questions is 'a paradoxical situation in the classroom, where the person who knows asks the person who doesn't' and 'is one of the rare places where it is he who knows the answers who asks the questions'. The pupils have an implicit understanding that the teacher isn't trying to gain understanding for him/herself, but to evaluate. To satisfy the demands of adults, the child tries to anticipate their expectations, and doesn't simply rely on verbal communication. These authors thus advise the use of asking questions, to show pupils what we expect of them, and to clarify the aims of asking questions.

When we watched the films we noticed this type of behaviour on the part of both the adults and the children. We hadn't become aware of these implicitly didactic situations during our sessions, but in fact they occur in multiple situations during the videos.

For example, a child changes his answer when we reformulate our question, when we simply expected him to be more precise.

Examples of exchanges about tactile images in the book:

A – What is shown in this picture?

C – It's the ground.

A – Is it the ground?

C – No!

A – What's that up there?

C – An open gate!

A – An open gate…?

C – No, a closed gate.

Repeating the child's response is interpreted by the child as 'My answer is incorrect', when the adult was just trying to encourage the child to give more information or to formulate his answer more clearly: 'You see the open gate and do you see anything else as well?'

Thus the adult should be careful about how he/she phrases questions and not hesitate to remind the child that we're interested in how they are think. This behaviour is not unique to visually impaired children, but we accompany our questions with gestures and behaviour that specify the meaning of the verbalised question. This non-verbal information is often missed by visually impaired children, so the need to be clear verbally is even more important.

2 – QUESTIONING THE ADULT'S VERBAL INVOLVEMENT

The second objective of asking questions is to accompany the child in his/her exploration and encourage him/her to complete an activity or experience. This support isn't only achieved through questions but also by describing temporal and spatial information to which the child doesn't have direct access.

But precisely describing a gesture or action is not habitual. Spatial vocabulary in particular is very referential and we usually use many demonstrative terms. Gestures and speech do not always take place in the same time frame. We have often observed this in workshops, for example while explaining skipping (jump rope).

"First the rope needs to be behind you, I'll pass it behind you if you want. Hold it well in both hands. Hold the handles well. That's great. Now you swing it so it moves in front of you, make a movement like that, make it move in front of you, yes, excellent… it's in front of your feet now, (but the child raises the rope and the rope gets caught on his/her shoulders)

Wait, wait… now you need to jump over it with your feet. Let the rope touch the ground, wait (the child moves the cord forward in front of him/her and behind) *… let's start again … feel with the front of your shoes, can you feel the rope with the front of your shoes? … let the rope touch the ground, and jump forward …* (the child jumps over the rope) *that's it yes, you have already got one food over, you just need to move the other over too…"*

It is difficult to verbalise an action. It is hard even for sighted people who have good motor abilities.

B. Thon is interested in the role of cognition in movement, especially in terms of verbalising actions and sportsmen/women of a high level. He highlights the difficulty of 'speaking' about movement. He has shown the ambiguous role of instructions which break down a movement to teach a gesture. "Thus, the verbal expression of a

motor skill or the translation of verbal instructions into a physical action often present great difficulties".

Extract from the 2012 lesson of Bernard Thon - Master 1 – Sports and Human Movement Sciences UE SC1 – Learning and adaptation of motor skills: The difficulty of thinking movement: pedalling backwards.

"The legs work alternately, and move inwards in a circular movement. The right leg moves back towards the buttocks, while the left leg moves inwards and down. The right leg moves out and down. Then, it is essential that the feet be level (at the moment of pushing down, for a maximal motor efficiency…" "Pedalling backwards" (« Le rétropédalage ») Madelenat G. (1995) Revue EP.S, 251, 46-47

The execution of a motor action requires a great number of processes. These processes require two types of brain function and correspond to distinct areas of the brain. 'They are required differently according to the level of expertise of the person carrying out the action and the purpose of doing the action.' 'The sensorimotor function deals with the automatic aspect of a movement (the body as a machine) and the cognitive function is the conscious control of the action (the mind guides the body). Even though there are links between the two circuits, there are two distinct networks. Dealing with verbal instructions generates a cognitive overload which can degrade physical performance.

Our objective in the workshops is not to develop motor abilities but for the child to make a link between words and action patterns by way of motor actions, and for motor actions to encourage memorisation. We must allow children to act within their environment while giving verbal instructions to guide their movements, while respecting the spatial and temporal process of the action, and while using as a reference point only that which is easily accessible by touch.

In the workshops the children move, play out the situations met by the characters of the story, discover and explore objects. All the events which take place around them are not directly accessible to them. We must explain the activities to them orally.

This complementary set of information which we must convey is not intuitive and requires adults to see from the point of view of the different children in the group. It relies on the use of a precise spatial vocabulary without a visual referent, which takes various dynamic situations into account. To describe or guide an action, movement and speech must correspond, as actions often happen more quickly than verbal statements.

Moreover, interactional behaviour relies on automatic verbal and non-verbal processes (pointing, spatial pronouns [here, there etc.]). It is not easy to control and modify our habits in this respect.

The limits of verbalisation in guiding a child who cannot imitate a movement or action often lead sighted people to guide the child physically.

3 – QUESTIONING THE ADULT'S PHYSICAL INVOLVEMENT/GUIDANCE

Physical guidance consists of directing the movements of the children. The adult draws the attention of the child onto the elements of an object that he/she wants the child to discover by guiding the child's hands. The adult is thus sure that the child is accessing the information intended and shares the same understanding. The adult can complement this tactile information with verbal information.

This physical guidance can also be useful for other reasons. Not all children have benefitted from early assistance, and a desire to touch things is greater in some children than others. While some visually impaired children develop effective skills for discovering their environment early on, others can be apprehensive and sometimes refuse to touch things. Visual often has a reassuring role in allowing a child to identify objects from a distance. Vision thus allows a child to prepare their hands and/or body for contact with a strange object, and to adapt their approach to it. Guiding the child's movement allows the adult to reassure the child and overcome their apprehensions.

Movements used to explore an object like following contours or lifting the item are complex gestures which need to be practised. Physical guidance of the hands allows adults to explain how to discover the physical properties and different functional elements of objects by guiding the child's movements precisely.

Procedures of manual exploration (Lederman and Klatzky - 1987).

The sense of touch plays an essential role in the perceptive and cognitive development (Y. HATWELL, E. GENTAZ) of visually impaired children.

Physical guidance plays to an extent the role of visual imitation. It allows the child to actually carry out the action, rather than listening to a complicated description of a motor skill or to carry out a complex action with only verbal instructions. Most professionals make use of it.

Finally, physical guidance can also be useful when the visually impaired child has difficulties with movement and motor skills. We know that hand-eye coordination and motor-perceptive development is more difficult for visually impaired children. The processing of visual streams by the peripheral vision is involved in the tonic regulation, regulation of movements, postural child development and displacement. (A. Bullinger, D. Mellier 1988 2002 2004). Moreover, the construction of spatial images follows postural development and movements within a space.

A blind or highly visually impaired child tends to move less than sighted children. Their movements are slower and more careful. There is a risk of psychomotor instability, of twitches, tics and synkinesis, and as such a blind child needs specific help. (Portalier and Vital-Durand 1989). Fine movements without visual assistance are more complicated.

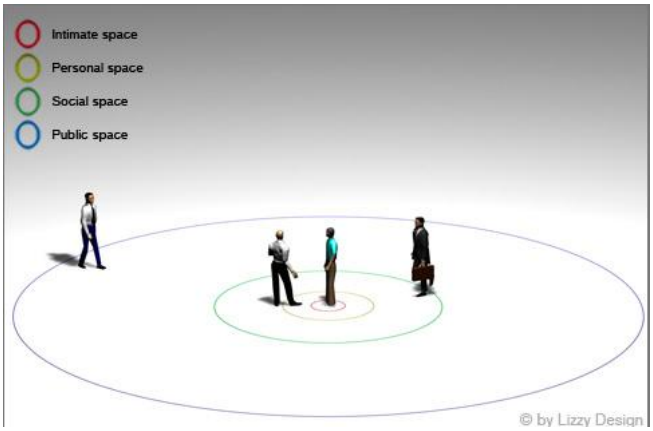
However, this procedure brings up two questions:

- Is this direct intervention within the personal space of the child too intrusive?

- Does the child really acquire a new skill if thus accompanied?

Physical Guidance and Proxemics

To answer the first of these questions we looked towards the School of Palo Alto, California, U.S.A. and once again the role of non-verbal communication in interactions. The anthropologist E.T. Hall (1963), showed the role played by physical space in communication between people. For adults the distance between people is important and marks the type of relationships which are at play.



These distances vary according to culture and personal preference, and tend to be more important in ‘Western’ countries than ‘Eastern’ countries. Hall defined four zones of proximity:

- Intimate space – two people between 15 and 45cm from each other, can touch each other, whisper etc.
- Personal space – for friends and close acquaintances, from 45cm to 120cm.
- Social space – for other relationships (professional and strangers), from 1.2m to 3.6m
- Public space – from 3.60m to 7.50m

This proxemic space is constructed progressively with age.
At birth, bodily contact, skin to skin, is a fundamental need (Attachment Theory: J. Bolwby; concept of Holding of Handling: D. Winnicott). The somatosensory system is the main sensory system. A child can be happy and blossom when deprived of an exteroceptive sense, but the absence of somatosensory stimulations causes great issues. This need lessens with age, thanks to sensory-motor development and the support of the family. The child begins to establish a distance between its body and that of others. With language and distance enforced by the movement of others, the child changes his/her approach. Interaction with others takes place further apart based on language and sight. Bodily contact is thus codified. Between 3 and 5 years of age, the child internalises the notion of decency and reserve, and of privacy.

In France, at school, after kindergarten there is little physical contact between teachers and pupils (M. Raveaud 2004). 'The distance that the teacher maintains with his students remains between a social distance and a personal distance, which the teacher will be able to change in varying contexts: to get closer to a pupil he wants to speak to individually or to get closer to a group of talkative pupils.'

With visually impaired children bodily physical contact continues longer and is much more frequent. In the family we know that the detachment of mother and child Is often more complicated due to the vulnerability and fragility of the child (P. Ben Soussan, S. Korff Sausse 2007). In places of education and schooling, bodily contact remains because as we have previously seen, they are necessary to help the development of motor skills. The child doesn't visually perceive physical space between adult individuals, and is not necessarily conscious that this physical guidance is not systematic. It therefore seems necessary to speak very early of this 'silent language' with children. This allows for developing the need for independence and autonomy, to encourage self-affirmation and authorise the child to show their unease and disagreement when unknown people engage in physical contact while thinking they are helping. This is also an important element for them to master as adults in communication with sighted people. Respect of these distances makes communication easier.

Physical guidance and learning
The benefits of physical guidance to gain a locomotive skill are also worth considering. Through physical guidance, we wish to help the child gain a skill. We implicitly require the child's predisposition to imitate.

However, contrary to the situation of visual imitation, when we physically guide the child we are placing them in a passive role. The child is no longer initiating the action, cannot anticipate how the action will take place and when it will finish. It seems necessary to place the initiative in the hands of the child.
In order to achieve this:
- Should we stop guiding before the end of the action?
- Should we allow the child to anticipate how the movement or gestures will take place?
- Should we place the child's hands on top of or under the hands of the person showing them the action?

It would be ideal to carry out a study focused on this skill so as to establish a frame of reference.
It also seems necessary to accompany this physical guidance with precise verbal instructions.

One must also reflect on one's physical positioning in relation to the child, according to whether the relationship is one of cooperation, teaching etc., we position ourselves differently in relation to others – side by side, behind, opposite etc.

This is a theme which merits development and could lend focus to further research.

4 – LANGUAGE IN INTERACTIONS

In a learning situation verbal interaction does not just aim to establish communication, to hold attention and exchange information and impressions, but also aims to transmit new knowledge which the child must take on board to further his/her thought.

J. Bruner (1998) recalls that speech is a multi-function action which has 'a double aspect: a representative function and a communicative function.' These properties 'allow [speech] to play an essential role in the development of awareness'. The relationships between words and their uses 'are established by the people speaking in the context in which they are used.'

In the workshops the children rely on precision and quality of language to construct mental images and link their new knowledge with existing concepts. We have observed in the workshops that we were not always sufficiently vigilant in terms of the

precision of our use of vocabulary. To illustrate this there follows an extract from the eighth workshop.

During this session, the children make two illustrations of items from the book:
Pendant cette séance les enfants fabriquent deux illustrations du livre :

- an umbrella with a sweet-wrapper and a matchstick

- a broom with a bundle of twigs and a small stick

The four objects necessary to make these items are in an envelope placed at the end of the book. The children open the envelope and take the four small objects. We see the objects that the children take. We asked a blind child:

A: *What do you have in your hand?*

C: *An elastic band and a stick.*

By asking these questions we seek to make sure that the child has recognised the objects. A sighted child know that we have seen what he/she has in his/her hand. For him/her the question is not ambiguous, it is a question asked in order to evaluate. The adult wants to know if he/she has identified the objects and knows their names.

A blind child does not know if we have seen the objects. He/she may assume so out of habit, but would not be certain. When we ask, he/she doesn't know if we want to know what he/she has in his/her hand because we ourselves do not know, or if we want to test if he/she has identified the objects and knows their name. In the above situation the answer given answers all three potential questions. But a question phrased in such a way may cause confusion. Before asking it is therefore necessary to explain the situation clearly so the question is explicit:
- I have seen the objects in your hand, but have you *identified them?*

In order for communication to work, it is necessary that those communicating share the same understanding. We must make sure that the child shares the same points of reference as us, i.e. that he/she perceives what we perceive. Therefore, with blind and highly visually impaired children, the adult must convey those elements which the child may otherwise miss.

After having made sure that we share the same understanding of the situation, we must make sure that the words used fit into the same conceptual understanding. Mishearing and misunderstanding, even with sighted people, often occurs because of a gap between the use of a word and its definition or conceptual representation.

In workshops, when we work on sensory perceptions, we must be attentive to the use of certain terms, especially the word 'see'. 'See' is often used to mean 'perceive' or 'show me'. We absolutely should not prevent the use of visual terms. Blind children use these terms in day-to-day communication and this causes no problem for them. But it can cause problems in workshops when the idea is to present an image of reality and to know what information the child has access to. When working directly on a sensory capacity it is important to be careful with one's use of vocabulary.

It is important to be precise and use an evocative vocabulary, to try to imagine what the child understands from our explanations and make sure that the exchange allows for an effective mental image. To illustrate this point we have chosen two extracts from previous works.

P. Claudet (2000) cites the example of a blind person to explain the difficulties of using a language-based mental image:

I get lost describing things, and the effort required becomes impossible for me. They make a book tedious, it isn't relaxing any more. I had to abandon 'The Hunchback of Notre-Dame'. I read it in Braille, I will choose a passage at random and you will understand, listen: "It is the moment when the sun, already declining towards the west, looks the cathedral almost full in the face. Its rays, growing more and more horizontal, withdraw slowly from the pavement of the square, and mount up the perpendicular facade, whose thousand bosses in high relief they cause to start out from the shadows, while the great central rose window flames like the eye of a cyclops, inflamed with the reflections of the forge." (Translation used by Isabel F. Hapgood). *You who can see impose your vision of things on us, but we cannot use your vocabulary to its fullest extent, too many words have too strong a relationship with your visual world to be used by us.*

However, Pierre Villey recalls the necessity for blind people of appropriating this language*:*

The blind person lives in the society of sighted people and speaks their language. He inevitably needs to think and feel like them so as to communicate with them as fully as possible. Also, even when the sensory content of their language escapes him, i.e. when they use specifically visual vocabulary, he allows himself the luxury of extracting the essential effect of the words.

Children often find that a part of what is said to them escapes their understanding, but they do not always bring our attention to their lack of understanding. It is our job to make sure that the children have well understood all the information, allowing them to understand a situation.

When we speak to the child we should describe the situation objectively, and identify where we are getting the information from, and specify our personal aim or intention. It is thanks to the mental image generated by language that a visually impaired child will be able to form a concrete idea of the situation or a new notion.

Language thus is used both for communicating, i.e. transmitting and exchanging information, and for developing one's thought-process.

Communication between visually impaired and sighted people is therefore of a high quality provided that the sighted people use a verbal language which is not based on contextual references inaccessible to visually impaired people. On a communicational level, N. Baltenek and A.Galiano (2007) have shown that, for visually impaired adults, communication is of a high quality because 'understanding between individuals occurs above all through verbal language', and that 'a communication relationship between a blind person and a sighted person is more destabilising for the sighted person than the blind person.

Avoiding referential language or using an appropriate vocabulary is a skill which professionals develop through regular contact with visually impaired people. But this skill is acquired empirically. Even with experience, depending on the aim of the exchange, the place where it occurs, avoiding the use of references to the surrounding context can be very complicated, and this is particularly true in learning-

based situations. C. Schepens (2009) observes that in interaction situations, ‘adaptation generates difficulties from various angles … and it is necessary to help the child to develop skills in visual and visual *disrupt* communication’

It is also necessary for professionals to develop communication skills in these scenarios.

5 – COMMUNICATION USING ALL METHODS OF PERCEPTION

Our interactions with the environment are constantly multi-sensory, but vision often seems dominant over the other senses. However, no one individual learns in the same way. Many writers have shown that there are different ways to reach one’s goal, and the strategies are many and varied (M. Reuchlin 1989) and intelligence itself is varied (H. Gardner 1993). The concept of ‘mental management’ (A. de La Garanderie) and in neuropsychology of ‘cognitive styles’ (F. Lussier, J. Flessas) work in the same way. People could prefer a method of perception that is not necessarily sight. The advice given for teaching is ‘to present a single concept by using various methods rather than simply repeating oneself.’

A. Meltzoff (1977) has shown that babies exhibit inter-sensory connections at a very early age. The neurological basis which allows integration and mediation between two sense is not yet known, but the idea that of non-sensory perception has now been abandoned (Y. Hatwell, A. Streri, E. Gentaz). But experts have stressed that the fluctuations of this skill observed throughout the child’s development ‘suggest that it is through an eternal construction and exploration by the child’ that they can maintain or re-establish a relationship between the different methods of perception.

For the visually impaired, this impairment causes a preferred use of the other senses. Some children that we meet in our work show that they have developed effective strategies to access information: a highly functional and selective aural attention; an aural memory span which avoids recourse to vision; or a very fine tactile distinction.

Recent research has effectively shown an improvement of the perceptive capacities of the other senses. E. Gentaz mentions that ‘early blindness causes powerful modifications in the functional organisation of the brain’, and ‘modifies the activity of the brains visual zones’. Likewise, O. Pascalis has shown that ‘deaf people exhibit a visual ability more developed than that of hearing people’. Neural malleability allows the brain to organise itself based on the sensory signals that reach it.

A visually impaired or blind child often develops completely original adaptive procedures compared to normative models (S. Portalier 1996). However, to optimise one’s sensory capacities other than vision, the environment must encourage their use. The desire to use the other senses does not occur automatically, and sometimes children can refuse to use their other senses for cultural, social, interpersonal or emotional reasons. The child may have fear of touching things, of tasting new things, or have fear of noises, particularly when not possessing vision, which plays a reassuring role for children. One must therefore balance the need to encourage the child to use all his/her senses, and a respect for social prohibitions and the child’s apprehensions.

It is similarly important to remember that all perceptive activity has a locomotive dimension. Taking in information via different senses is active: oculomotor activity is indispensable to visual exploration and has an impact on perceptive judgement (E. Vurpillot 1974); touch is entirely associated with movements to help tactile manual exploration (Hatwell, Gentaz); movements of the head are necessary to make use of stereoscopic hearing and to pinpoint sounds and smells; and chewing and movement of the tongue are necessary to taste properly. We move to perceive things better.

In the workshops, we encourage movement, not to develop motor skills but to discover the environment. Vision allows for numerous natural experiences every day. For visually impaired children these experiences often have to be stimulated somewhat. As many studies have shown, motor activity allows for exploration and manipulation of the environment, encouraging assimilation by allowing the child to transform what is around him/her, to test, anticipate, and discover the consequences of actions, and to compare different actions and reactions.

When the child is an actor in an organised activity, his/her curiosity is active, and his/her attention is focused. Proprioception reinforces memory and helps the child to discover the content of the activity. Proprioceptive activity consists of perceiving and interpreting sensory signals to understand the world.

To better exploit the child's perceptive and locomotive potential in interactions, it is necessary to allow the child to test out all of his/her senses, but also to make him/her aware of the different information made available by each sense. This is the goal of the kits.

A – THE SENSE OF HEARING

The sense of hearing is frequently required in language and music-based activities. The learning kit allowed us to work on the sense of hearing in another way. The soundtrack CD allows us to introduce an audio atmosphere for the scenarios described at certain points in the story. Repeating the sounds at each reading allows the children to associate a mental sound-image to the text.

We then encourage the children to recognise the sounds and to identify what information they have access to about the object thanks to sounds. We then allow them to reproduce the sounds, then to discover the object producing the sound with

their other senses, to compare the objects and to understand that two similar objects can produce different sounds.

It seemed important to us to make the child produce the sounds during the sessions, and to use the sounds to engage in reflection on the properties of the objects making them. We very rarely use the sound to identify materials, as the sense of touch is the best way to identify textures. We just use the sound emitted by objects to clarify ambiguities, for example we may hit an object made of plastic which looks and feels as if it is made of glass.

It seemed necessary to us to make time in the workshops for a section focused on the sense of hearing. We recorded parts of the sessions to keep audio recordings from which we can reconstruct the activities.

Improving the work done on the sense of sound is a possible future research direction.

B – SENSE OF TOUCH



In the two final workshops, we worked specifically on the sense of touch with tactile images which illustrate the book given to the children. The children in the group have skills in touching. ‘Tactile-kinetic perception, active or ‘haptic’ perception (a term introduced into the field of psychology by Revesz, 1934, 1950 cf. also Gibson, 1962) results in the stimulation of the skin resulting from active movements of exploration via the hand entering into contact with objects’ (Y. Hatwell E. Gentaz 2013).

Hatwell and Gentaz have showed the richness of this sense to compensate for visual difficulties. However, the sense of touch has some limits for understanding space, and for accessing information on a longer term or more fragmented basis. Tactile or haptic perception constrains the child to memorising and forming a mental image.

The tactile illustrations in the book is appreciated by all the children, but it is certainly the text that gives meaning to the illustrations and not the other way round. In the kit, the tactile book has a particular role. It is a book which brings together the sensory and linguistic experiences engaged with earlier. We think that the tactile illustrations should reinforce perceptions which evoke the experiences previously enjoyed by the children.

It seems interesting to us to put into question the tactile illustrations presented by the books in the kit, while taking into account the comments of the children. An initial study will be carried out by Nathalie Isard, a Braille transcriber. This study will be available on the 'resource kits' section of the CTRDV website.

C – SENSES OF TASTE AND TOUCH

We didn't specifically focus on the senses of touch and smell in our workshops. The sense of smell is used a lot by young blind children, to recognise people but also to identify their clothes.

The set-up of workshops can also allow for work on these senses and perhaps the opportunity to cover briefly the rules of communication and social taboos relating to these two senses. They are often seen as instinctive and not very trustworthy senses.

In society as a whole and at school, the senses of sound and vision have an important place. New communication methods highlight this dominance further. It is important to have places where these senses can be used. J. Souriau (2007) mentions that the act of perception and culture interact 'in the case of genetically inherited deaf-blindness, one can observe an asymmetry and a great gulf between the experience of the deaf-blind subject (essentially tactile and kinaesthetic) and that of the dominant culture which has constructed semiotic frameworks almost totally based on sound and vision. The existence of this gap constitutes an obstacle which makes us aware of the existence of this semiotic effort, which in the majority of situations in daily life passes totally unperceived.' '…the brain, during the growth of the young child, 'loads' the software of culture, thus appropriating the semiotic framework which will allow him/her to understand the world… A simple example would be the noise of an object which falls in an empty house, a purely physical event. However, the same noise at a moment when someone is present to hear it immediately becomes the object of a semiotic process making the noise a 'clue' (the person who hears the noise as indicating the existence of an event which was not directly perceived, i.e. an object falling.'

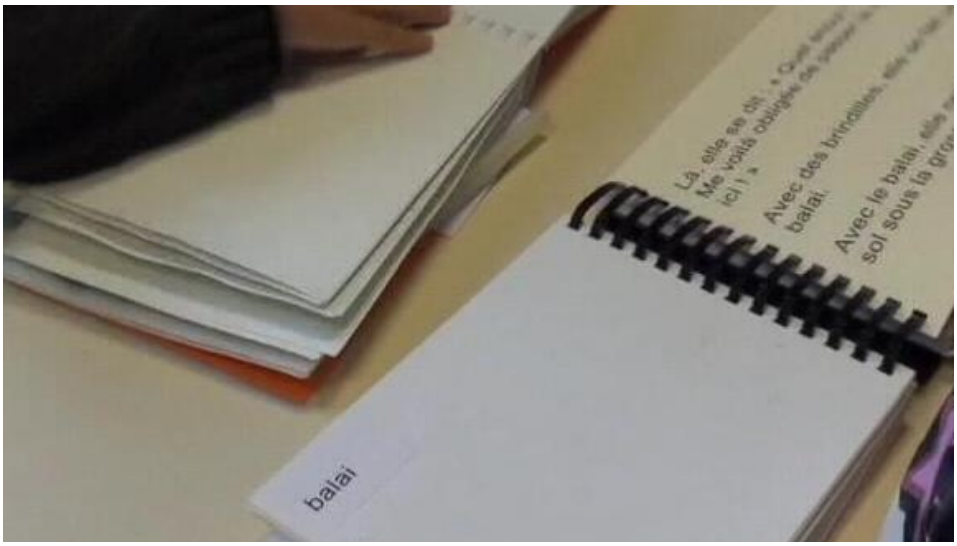
It would be interesting to work out a way of incorporating these two senses in the workshops.

D – SENSE OF SIGHT

The kit is a multi-sensory tool, so considering and reflecting on the sense of sight is also important. It is important to allow visually impaired children to get the most out of their visual potential, no matter how limited it may be, and to be sure of the quality of the information perceived by the child.

In the 7th workshop, when we open the book, the children observe that two pages do not have an illustration. At the top of the two pages are found the words 'balai' ('broom') and parapluie ('umbrella'), respectively, written in braille or in print. The child whose response is written below was using a book in print.

Child: *That bit must stay blank!*
Adult*: Ah no, what are we gong to do there*?



Child: *The page is blank!*
Adult: *No, what's that written there?*
Child: (moves closer to the page) *bl* [bl] ...

(The adult hides the second syllable to help the child focus)*… ba* [ba] (the adult hides the first syllable) …. *lai* [lɛ]

Adult: *So what will we put on this page?*
Child*: The broom*

When we have a fragmented vision of the information because of movement, lack of contrast or sufficient lighting, our brain completes the information and so interprets reality to give meaning to what we perceive visually. While reading, involuntary eye movements resulting from a nystagmus may cause difficulties in focusing precisely and twitches. Reading is therefore limited to starting with just a few letters of the word. Here, reading 'b/l/a' led the participating child to an incorrect reading. This sort of scenario is very common among visually impaired children.

The way in which visual impairment manifests varies dependant on the context and the environment, which often change in the workshops; the lighting, the distance from what is being read/looked at, and the quality of support given to the child. Visually impaired children rarely bring attention to their difficulties and tend to compensate for them, and as they perceive some elements of their environment we often tend to 'forget' their impairment. It is therefore important to verify with each child everything they have perceived/seen.

It is also important to help blind children understand vision well, to allow them to understand the information to which we have access thanks to our vision and to facilitate their understanding of the actions of others.

Working on each sense separately is necessary so that children realise the specific uses and information we can access with each sense. It is also necessary to make children aware of the complementary nature of the senses and the duplication of information often brought about by each sense. This metacognitive reflection can allow them to develop strategies vicariously.

6 – DEVELOPING REFLEXIVE AND METACOGNITIVE THOUGHT

Metacognition is a concept developed by John H. Flavell (1976): '*Metacognition concerns the knowledge we have of our own cognitive processes, of their products and of all that which relates to, for example, the relevant properties for learning new information…'*

To understand the role of metacognition in learning, the Educational Science thesis of Anne-Marie Doly, *Metacognition and Pedagogy: What is at stake and Propositions for introducing Metacognition in Schools.* She specifies the definition of metacognition:

> *This is metacognitive knowledge, i.e. knowledge that the subject possesses consciously – which he/she him/herself has built up and/or used in a conscious and controlled way; knowledge relating to him/herself – one's knowledge, skills, strong points and weak point, ways of functioning intellectually and emotionally in relation to the tasks one has to work on… knowledge relating to tasks themselves, their nature, the conditions of their completion, the strategies that one possesses and those one does not or cannot possess… Control is the second key aspect of metacognition: it is carried out by means of cognitive processes allowing one to anticipate and plan, to self-evaluate the activity by monitoring, regulating if necessary and evaluating the results.*

The concept of metacognition can be related to Piaget's concept of *équilibration majorante* : an external phenomenon causes a cognitive conflict and therefore an imbalance which will allow the child to deconstruct his/her knowledge before reconstructing it by means of reflexive and reflective abstraction. For Bruner or Vygotsky this meant confrontation with the point of view of others, and taking this point of view into account, which causes socio-cognitive conflict and allows for realisation, reflection and self-regulation.

A. Karmiloff-Smith and B. Inhelder (1975) have shown that children pass through three phrases in the process of reflection. Between 4 and 6 years of age, the child often forgets the goal of a problem and focuses on his/her actions, and follows action with action without prior anticipation. Between 6 and 7 years of age, he/she no longer forgets the goal of the problem, and anticipates actions, but doesn't progress to retrospection and reflection. Around 7 or 8 years of age, the child can compare the results of an action and his/her initial expectations and responses, and achieve metacognition.

In 1986, A. Karmiloff-Smith distinguished 'early metaprocesses' from 'late metaprocesses'. The child learns without being aware that they are carrying out an action aimed at implementing new knowledge. There are certain rules stored in the memory, which are 'early metaprocesses'. These rules control activities unbeknown to the individual, who is unaware he/she is applying the rules. It is only when the subject becomes aware of these procedures that he/she can reflect and intentionally use this knowledge. This is what is meant by 'late metaprocesses', and is commonly known as metacognition.

In our workshops, metacognition only comes into play after working on abstraction and conceptualisation. Encouraging the child in this type of work allows him/her to be active, to optimise his/her actions, and to transfer his/her knowledge to different situations. In fact, by making the child aware of what he/she does before, during and after a task, we improve the chance that he/she will memorise the necessary information. '*In brief, working in this way allows the subject to know what he knows and how he has come to know it, and it is that that influences the transfer of knowledge and meta-knowledge constructed in an activity controlled by a metacognitive setting.*'

The children in the group are age 7 on average, and this type of reflective effort on their work is still difficult. In the workshops, we see that the children still need to obtain knowledge through action. Periods for reflection are short and exchanges between the four children are often difficult to obtain.

It is therefore important to help the child's ideas come out before an activity. Helping the child express his/her ideas allows us to access partially the mental image that the child has of a scenario. This is even more important with visually impaired children because we do not share all our points of reference.

Through verbal interaction we make them aware of their implicit and explicit knowledge, which they can then test out in a scenario. They then compare their results to their initial ideas. In this way they form a kind of meta-knowledge.

To guide this type of verbal interaction we can use the 'explanation interview' technique described by Pierre Vermesch.

7 – THE EMOTIONAL DIMENSION OF INTERACTIONS

The emotional dimension is at the heart of interactons and often clearly present throughout the workshops. We establish a framework which encourages exchanges, asking questions and activity. We also take care to be attentive to what the children express during the workshop: pleasure, a fear of failing or of opening up in front of the others, avoidance behaviour, and the general comments of each child. We avoid value judgements, seeking to evaluate the impacts of words and attitudes. We are attentive to body language: yawning, smiling, eyebrow movement, body position, hand movements, etc. All these behaviours express emotions and cognitive processes.

The children all know each other, and have well established ideas of the knowledge and performance of their classmates. The role of adult mediation is therefore very important. It is important to pay attention to and moderate the remarks of each child: mocking laughs, 'whatever!'s and so on, paying attention to the remarks of the child and discussing their rudeness. The adult regulating interactions also allows the children to have a positive image of getting things wrong as a normal part of discovery and learning.

The emotional dimension is also present when we work on the story. We can use the book's input, specifically the character of the 'little doll'. Works of children's literature are often based on a fictional world, but can also allow the children to understand human and social relationships, to reconstruct reality, while at the same time enriching their linguistic skills. Reading is simultaneously a cognitive and emotional process. The child can at the same time identify him/herself, project, transfer and transpose.

In the character of the doll, they can recognise their personality traits or behaviour, but can also take an example of the character's behaviour and attribute it to themselves. In the story, the 'very little doll' finds herself abandoned and destitute, but is able to overcome her fear. She dares to face the unknown, and uses her resources and those of her environment to find herself shelter. She shows the traits of inventiveness and creativity, and puts across the message that any individual is able to overcome adversity.

This can be an opportunity to deal with the idea of being different and handicapped. We did not have enough time in the workshops to sufficiently cover this point of the story, but it is certainly possible to talk about the character's feelings and motivations. This could be expanded by looking at the language used to talk about the character's emotions and we can also work on the way of showing/telling others about our feelings.

II – REFLECTIONS ON OBSERVATIONS OF CHILD/CHILD INTERACTIONS

Our intention here is not to generalise behaviours based on the observation of a single group, but our observations and the questions raised highlight the characteristics of relationships involving visually impaired children.

To handle the relationships in the group we used two complementary approaches.

A. N. Perret Clermont, W. Doise, and G. Mugny have shown the powerful role of social interactions in the development of the child's way of thinking. In order for the children to progress when they work in a group, it is important for cognitive conflicts to take place during the interactions. In order to encourage this, every child must be actively involved, and have the desire to cooperate. Each child should express different points of view, on the same level (as according to Vygotsky's Zone of Proximal Development). The children then try to coordinate their points of view to give a shared answer. Collective work allows each child to interiorise the group's collective answer, and therefore allows for an internal causal link.

For this activity to succeed, a fairly homogenous group is necessary, with all the children exhibiting a roughly similar level of knowledge and reasoning. In the group that we formed, the skill levels were heterogeneous.

When a situation causes difficulty for a single member of the group, we can use a different approach, developed in 2008 by K. Lehraus: cooperative learning. She showed that in small heterogeneous groups, children can rely on interdependence to make learning progress. The simple fact of being confronted with a different answer may be enough to create an imbalance which makes the children aware of the need for change, provided that none of the participants imposes an answer on the others, and that the context of the activity is not competitive. Cooperative learning allows children with diverse skills and dispositions to achieve a common goal.

Group work encourages a workable dynamic but as P. Meirieu has stated, 'There must be real 'pedagogic management' of the group's work. The principle of this management is that the group must work in such a way as to guarantee the progress of all, and must be prepared carefully to that end.

We have tried to create a cooperative environment as much as possible. We allowed the children to express themselves freely, encouraged them to share their ideas and tried not to pass judgement, but rather to discuss the ideas of all the children.

Cooperation necessitates the ability to leave one's own point of view aside to take into account the point of view of others, by a process of empathy. The skill of

empathy and focus on the views of others varies depending on the child's age and their own level of development.

1 – INTERACTIONS FOCUSING ON THE POINT OF VIEW OF OTHERS

It is important for the child to have a clear idea of the information to which each member of the group has access to better imagine the thought process of others. This relies on the concept of Theory of Mind.

The concept of Theory of Mind qualifies the cognitive processes which allow a person to attribute a mental state to another person. This skill starts to manifest in the phase of joint attention which marks the sharing of a point of view with others. This skill develops progressively in line with social experience and language. The child is able to make inferences of the first level (different beliefs, lies, truth/sincerity) between 3 and 6 years of age, of the second level (irony, jokes, coincidence) from 7 years of age. The ability of visually impaired children to imagine the thought process of others can come later and can be more complicated (S. Portalier 2003). 'Early screening and prevention remain today the essential factors for easing or even suppression of the secondary effects linked to visual impairment. (Portalier, Vital-Durand)

The children with whom we work in the group are 7 years old. Initially, we were able to evaluate the ability of the children to focus on the views of others through their understanding of the story. Indeed, the situation of the 'very little doll' can be seen as an inference of the first level of the Theory of Mind. The child must project him/herself through the character of the young girl who finds the doll in the same position and the same place but does not know what the children know: the doll has moved during the night. This situation posed no problems of understanding for the children, so we can suppose that the children will be able to make some fruitful observations.

This point of the story is interesting to look at with younger children. They must consider what the little girl sees and knows (the doll is in the same place and in the same position) and what they know (the doll has moved during the night). We have considered a workshop which would allow us to stage this part of the story and work on the difference between what they know and what the little girl knows. This workshop is an interesting new direction to pursue in the learning kit workshops.

In our group, however, we noticed that the ability of the children to consider the view of others differed depending on the activity carried out. There follow some examples.

The first example took place in workshop 4, when we asked the children to describe the doll they are holding in their hands so that their classmates can clearly imagine it. We observed that they only made use of a single sense. For example:

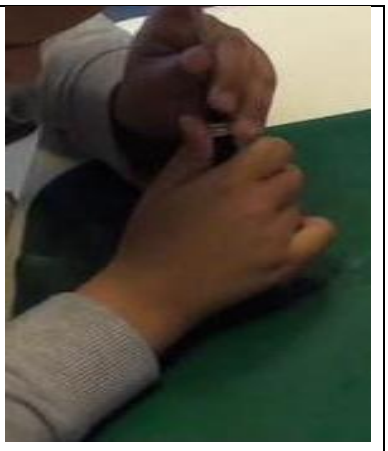
Blind child: Sense of touch
"She has a dress, she has an elastic band in her hair, she can move her arms, she can… move her legs a little bit and she can move her head.

Visually impaired child: Sense of sight
“So it’s a girl, she is dressed all in pink, she has a pink skirt, she has pink trousers, she has a pink top, she has pink shoes, she has blonde hair, she has white skin.”

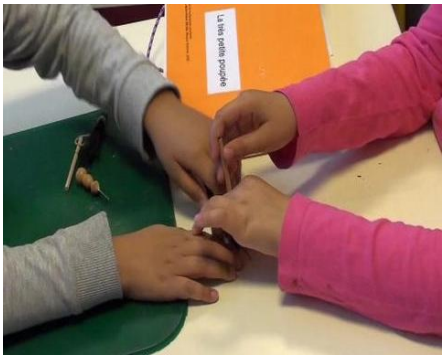
In this situation the children address the rest of the group and describe what they see without worrying about making what they are saying accessible to the others. This is a behaviour we would also find with sighted children, however the children’s concentration on their own point of view is problematic in our group and in this situation because blind children can only rely on verbal speech to make a mental image.

Second example: In the 7th workshop, each child thought about how to make a model broom and had to explain to their classmates.

Marie: (Explaining how she thinks they should put the ywo parts together) This, this bit of wood, could be a handle maybe, (holds the bundle of twigs in one hand and the stick in the other), and then we would need to take off the thingies, the twigs… wait Lea (Lea speaks at the same time)… we’d need to stick it like that (holds the bundle horizontally and the stick perpendicular to it) and we’d sweep like this (sweeps the table with the bundle of twigs) Adult: How would you do it Lea? Lea: Like this (sweeps the table holding the stick in her thumb and index finger) Adult: Where would you put the handle? Lea: Here (shows the adult the top end of the stick and taps it with her finger)	

Adult: How would you do that? Lea: Like this (places the stick vertically in the top of the bundle of twigs) Marie: How did she do it?	

Despite the initial instruction, we observe that the children explain their way of doing things to the sighted adult, without worrying about making their explanation accessible to their classmates. Marie, however, expresses her curiosity to know.

Adult: Lea, try to explain to Marie Lea: ……(says nothing) Marie: Lea... Adulte : Marie has a different idea so can you explain your idea to her? Lea: … (sighs loudly and sits down) Marie: Lea… (Marie calls Lea's name several times but she still remains quiet) Adult: Marie why don't you try to explain to Lea how you did it? Marie: Lea, why don't you touch? (the two children are opposite each other. Marie takes her bundle and her stick, which she places perpendicular to the bundle of twigs and places it on the table with her arms stretched out. Lea approaches with her hands outstretched and explores the broom Marie is holding. Marie: Show us yours Lea! Lea: Wait, wait, wait (she takes the stick and bundle and places them together) Marie: Show us Lea… Lea: Wait, wait… (holds her broom out) touch it Marie… Marie: (Feels around for Lea's hands, finds them) Like that… Lea: I put this on top (touches the stick and makes it	 

move) Marie: (lets go of Lea's broom) like that… (and reproduces Lea's model), I was going to do it like that but didn't think it'd work!	 

The adult asks the children to present their solution together, without intervening physically or verbally, remaining silent and only speaking up when necessary to re-engage the dialogue. The adult has an indispensable role as the mediator, to make sure the activity is useful, but allows the children to find a solution together. After a moment of silence, Marie finds a solution by using touch to communicate. Lea can take on the solution for herself. Lea found the solution to assemble the two parts of the broom correctly, and comparing their solutions allows the children to reach a consensus on the solution.

The third example occurred during the 7th workshop. We observed a spontaneous exchange during which a child found an original situation to respond to the needs of her classmate. One of the blind children wants to put their name label on the registration board, but does not know where it is, and so her classmate tries to guide her:

Fanny: The board's over here. (This type of referential guide often works because the child focuses on from where the voice is coming, and not on the meaning of the words. But at this point the other children were making noise).

Lea: When you say 'here' that means nothing to me!

Fanny: *Here, here.* (the child hits the board with her hand, to make a continuous sound distinct from the background sound.

Lea cannot find the board by verbal guidance alone and explains this to her classmate. Fanny, instead of going and taking her classmate by the arm like she

normally would do, makes a sound to guide her. This is the only situation in which we observed audio-guiding taking place spontaneously.

Through these three examples we can see that children are able to place themselves in the situation of others, but they still meet functional obstacles to which they do not always find a solution.

Some obstacles are cognitive and behavioural in nature, and can occur for any child. Making friends, compromises and misunderstandings occur in the same way for all children. Vision is not a determining factor in relationships. We found in our group power dynamics, rivalries, individualist behaviour and the conflicts that are inherent to all social interactions. Personal interest often comes before that of others.

We also observed a difficulty linked to the ability to communication. At 7 years of age, verbal description of a specific object is a costly cognitive process which constrains the child into remaining focused on his own point of view.

Despite instructions which require speaking directly to the classmates, the child automatically addresses the adult, and opts for behaviour and skills learned in classroom situations.

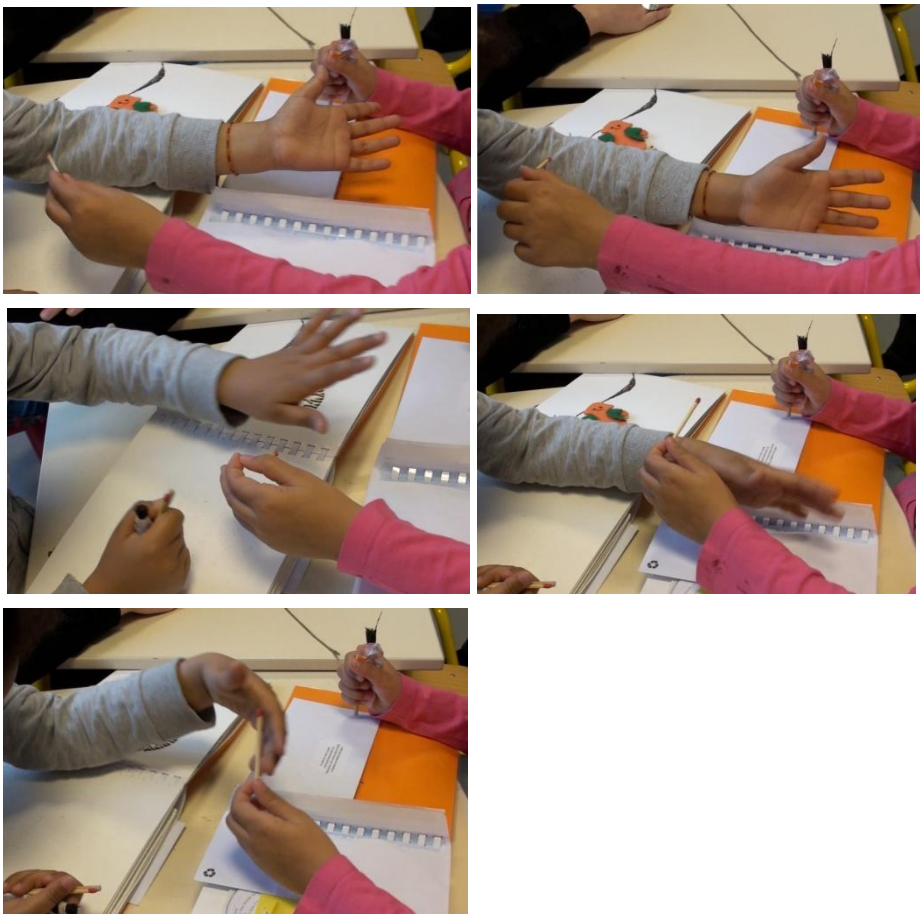
Other obstacles are linked to a perceptive problem. Children do not always manage to imagine the point of view of others because at a given time they do not have access to the same information at the same time.

We observed that blind or visually impaired children, like all children, use adverbs of place (here, there), which create the need for someone involved to be in a specific place as a reference. They also use references (e.g. ‘like that’) which necessitate others involved to be able to see. These references often work because an object can provide lots of sensory information from a distance (light, sound, smell), or can be placed near the child and be touched.

The relationship skills they have developed allow them to engage in effective interactions with sighted or visually impaired people by distinguishing between

gestures. For example, to give an object to someone else, they hold it in front of them and say ‘Here you go’, and wait.

Blind children make use of the same procedure among themselves. One child tells another to hold out his/her hand, and feels around for the object which has been held out.



In the scenario shown here the interaction succeeds.

However, at other times the children have not succeeded in passing objects between them. Each child begins without asking for help.

We observed that the children do not develop adaptive procedures spontaneously. They make use of interactional behaviour that is appropriate with sighted people, and which work in most situations.

It is therefore ideal for the adult to be attentive to interactions between children. The adult can help the children to think about the needs of their classmates, can encourage them to verbalise their difficulties when perceptive information is not enough, and can support them in their attempts to find original solutions. It is important to create many scenarios to practise this so a child can change their behaviour lastingly.

The professional must also plan in advance to implement interactive scenarios in which each child can show his/her strengths. For example, when reading aloud, a blind child who reads braille was able to show a high level of reading and helped her classmates.

2 - INTERACTION AND IMITATION

Moreover, we observed throughout the workshops that children who do not have access to non-verbal communication imitated their classmates more often. Imitation occurs during an activity and can take the form of a movement or speech. For example, one of the children sat down on a soft mat and span round laughing. A second child sat next to her and did exactly the same thing. When the second child began the first child stopped and listened, then carried out the action again and the second child stopped. This non-verbal exchange carried on until one of the adults started a planned activity.

One of the children repeated the answer of one of her classmates using the same pronunciation, vocabulary and the same syntactic organisation.

These observations raise two questions: What is the role of imitation in the two above situations? Could imitation be a skill we could use to help the children to communicate better.

A. N. Meltzoff (1977) showed that new-borns were able to imitate facial expressions. There has since been much research showing that babies have perceptive skills from an early age allowing them to decode the world and to communicate, particularly thanks to intersensory transfer. 'Intentional' behaviour would then be possible from the first months after birth.

J. Nadel (2011) explains that the ability to imitate is present from birth in children and can take several forms and have different aims. She distinguishes between immediate and delayed imitation, and shows that the aim of imitation changes as the child grows. Imitation is a crucial skill for communication in the first months. M.P. Thollon Behar also showed that through imitation and the support of the adult the child acquires social understanding allowing for pre-verbal communication.

As the child learns language and begins to think symbolically, this 'protolanguage' is no longer useful and disappears. Imitation thanks to cognitive development and development of a range of learned actions thus becomes a tool reserved for learning by observation. J. Nadel stated:

I want to show, by focusing on imitation, that growth and development are not just processes of gaining, but also of losing, skills which were very useful earlier in life. Certain uses of behaviour, certain functions, are transitory… there is a dynamic between what is created and what is lost which is not a direct subtraction per se, but rather a change in the solution to the problems of life.

The child does not lose his/her skills; they simply change and develop, but remain in the child's store of possible responses. Depending on the complexity of the situation by which the child is confronted, he/she can make use of different strategies, and apply behaviour from different levels.

Imitation as a communication tool allows children to be in 'synchronicity', i.e. to be compatible, to convey a response which accounts for the rhythm or pace of others. It also allows them to take turns, where one child puts across a message to which an other replies. It allows for joint attention, where children share their interest for an external object. It therefore allows them to make use of the skills necessary to communicate verbally among themselves.

Verbal imitation, i.e. the total repetition of words and phrases used, plays a role in communication but is also a cognitive exercise necessary to acquire basic vocabulary. This acquisition occurs in direct relation with objects and events. A word is learned at the same time as multisensory contact with an object or event. The richer, the more varied and the more frequent the visual-motor experience, the richer and more efficient the mental images and concepts. This is what Bruner described with the change from joint attention to designation and reference, which is, according to Bruner, the method of access to making mental images and language.

These observations led J. Nadel to consider immediate imitation as a possible way to enter into interaction with autistic children:

When we have not yet made access to language, would this form of imitation not be a very useful adaptation to the need for communication, especially in the case of autism?

She sees echolalia as positive behaviour, the precursor of language, when it takes place in an adapted context.

Imitation is also used as a communication tool with deaf-blind children. J. Souriau shows that by reproducing movements, contact and sounds, we allow for 'an emotional bond at a moment when no words are known…'. Imitation allows us to create a union, a communion of ideas and feelings. It allows children to learn body language, while using imitation to manage taking turns to speak, and interactive synchrony.

Like language, imitation has two functions; as a communication tool and as a way of developing cognitive structures. Visually impaired children seem to use these two functions spontaneously for longer. If gestural and vocal imitation often occurs among visually impaired children, it is because they are responding to the need to adapt.

The visually impaired children in our group have access to communicative verbal language, but it is not always very informative. And in particular, the children only have partial access to visual, non-verbal language. It is essentially by visual exchanges that we regulate taking turns and joint attention in communication. Imitation could thus be used in its communicative form for longer, so as to refine interactions and to compensate for the absence of non-verbal language.

When visual-motor experience is more limited, the child must develop other strategies to learn and discover his/her environment. Repetition of words, or of words in a phrase, i.e. in a syntactic context which determines meaning, aloud is perhaps not simply echolalia, but a way of taking on the meaning of a word in a specific context, to help memorisation. This vocal imitation could be a form of soliloquy. Vygotsky has shown the role of these monologues in structuring thought.

Visually impaired children may need more exact repetitions to construct a mental image allowing them to reproduce certain behaviour in a different context. The imitation we observed was selective. The children do not imitate anyone or anything; their imitation is an intelligent behaviour.

It would be interesting to verify if the observations we made occur with other groups of children. If the behaviour observed is present, it would be necessary to verify the explanatory hypotheses about immediate imitation behaviour. That could be an interesting medium, an alternative strategy in certain situations.

Imitation can be used in certain situations as a method of communication, but remains a tool reserved for learning for visually impaired children.

In the developmental models of Piaget and Wallon, imitation is defined as the capacity to reproduce a new action and a stored array of actions. All the senses can be used as methods of imitation. In this respect, the following extract from one of our sessions is of interest.

This extract from the story seemed problematic for the blind children in the group.

'The doll sits there, in the grit of the alley floor, with her legs and arms straight, like a fallen little doll' We asked the children to put themselves in the position of a doll fallen to the ground. Only one of the children had already seen the images from the original book during the readings.

Each child took up a different position, each one following the description of straight legs and arms, and the position of all three could correspond to the position of a doll fallen to the ground.

Marie touched her classmates and felt that their positions were different. She got up and chose to touch the body of the girl who had seen the pictures in the book before.

The fast tactile contact of Marie was enough for her to take the same position which she thought was the right one!

The sense of touch is a good possible source for imitation and learning, and Marie used it as such. Although we had not, at this stage of the workshops, spoken about

the book and the pictures of the doll, Marie considered the child who had access to the pictures as more knowledgeable and imitated her. Marie thought that the perceptive knowledge gained by looking at the picture from the book was more 'true' than her own mental image of the doll's position. Marie was, at this point in the activity, thinking figuratively. What children see dominates what they know. But we can also consider the role of Marie's mental images in her knowledge of what is 'true' or 'real'.

When we became aware of this imitation when we watched the videos we realised we had not talked about their mental images in this case. It can be interesting to talk about the role of pictures in visual or tactile illustrations. Pictures in books are just the point of view and mental image of an illustrator, but they strongly influence the mental images of the children. This is a known phenomenon with the mental images of geometric shapes.

3 - INTERACTION AND PHYSICAL CONTACT

Children encounter the same difficulties as adults in communicating via speech, and often make use of physical contact in interactions. They touch each other in order to help each other. But this contact is spontaneous and impulsive, so often brusque and over-vigorous. They grab the hand, the arm, pull or push in order to go where they want to go, with gestures accompanied by vocal or onomatopoeic sounds. We observed that the children put up with this attention by remaining quite passive, although when watching the videos of the sessions we noted some of the children tensing up or jolting when touched. They rarely expressed their feelings on this.

It is therefore necessary for the adult to regulate interactions and, without reprimanding them, calls the attention of the children to the impact of their movements and behaviour. We must encourage the children to express themselves more, to make their views known when they do not want to be touched, or when someone takes their belongings without asking.

CONCLUSION - Régine Michel

The way in which we have carried out this research project in partnership with CTRDV and the PsyEF lab goes totally hand in hand with the aims of the *Pre-reading/language/images* project.

This collaboration allowed the FAF to enter into a new stage of reflection and improvement of this 'learning kit' tool in the workshops. It has also helped us form new, richer perspectives on how to introduce the tool to the teams who will be using it.

Indeed, the tool as a whole (the learning kit), is very rich, composed of a central story, an exercise book which allows for an exploratory progression of the world of the story as well as a range of objects and aids to help with this exploration, and is itself the outcome of *Phase 1* of a long development effort.

Conceived in collaboration between the FAF and a multidisciplinary team of professionals working with visually impaired and blind children, carried out for 6 to 8 months by the same professionals, along with a pilot period of filmed workshops, the

tool has been looked at from various angles throughout the research project and has been made subject to various practices.

Our monthly afternoon communal work-sessions focused on observations of these new, filmed workshops. A new setting, and the complementary nature of the skills brought to the team by each member broadened the ways in which we approached the project, and allowed us to interlace various ways of thinking.

Our collaboration satisfied a number of the key hypotheses of the Pre-Reading/Language/Images project, and clarifies some too, leading to new points for observation.

Psychology, particularly developmental psychology, has proven to be a very relevant angle from which to approach the observation and development of the workshops.

In our observations, as in the set-up of the workshops, psychological input and skills have greatly helped us better to analyse and conceptualise what occurred and what was at stake during the workshops. This conceptualisation was aligned with fundamental theoretical input, so as to realise the relevance of these observations.

The contribution of psychology has also helped us to understand the symbolic dimension of some elements of the speech of children, even though we did not fully take advantage of this in this series of workshops.

Organising a methodical effort throughout our communal work sessions allowed us to define the key axes on which interactions with children are based.

This method allowed us to outline points for discussion and formulate them, again in reference to psychological concepts and theoretical contributions. This encouraged us to define priorities in our study and observation.

The choice of a research project in which observation takes place throughout workshops, during a long time period, led to a more adapted observation method, rather than simply testing the children before and after the workshops, which are limited to providing a mere ‘snapshot’ of a childs capabilities at a given time. Moreover, this ‘snapshot’ we get from testing can be highly influenced by the child feeling nervous, especially if blind, by being unable to process a strange adult’s views and reactions, with the tests often taking place in an unknown location, leading to questions such as ‘Where’s my mummy?’ and the like.

THE IMPACT OF THE RESEARCH PROJECT IN CLARIFYING AND CONFIRMING OUR WORK

The objectives of the Pre-Reading/Language/Images project will be achieved particularly well through workshops following Piaget’s method (based on the clinico-critical method)
Indeed, if the workshops allow us to put across knowledge, they aim above all to to help the children to acquire new knowledge more easily and more effectively.

That necessitates a particular approach, which is above all interested in the mental images that the child already has, and has him/herself constructed.
This is an open approach which is based on recognising the value of the ideas expressed by the children in the workshops, taking them as a starting point for new ideas and explanations:

- A key point at the start of the workshops is for the adult to show a real interest in the ideas and images formed by the child, however far they may be from the characteristics of the ideas and images formed by a sighted person.

- Another key point is to find an adaptive way of communicating to help the child to enrich his/her images and ideas, by way of a dialogue and the information to which the senses the child possesses gives him access.

In the workshops, it is important to encourage a movement away from traditional pedagogical assumptions.

Our collaboration confirmed for us the importance of focusing on the quality of our interactions, and showed the benefit of focusing on interactions between the children involved.

Having decided to focus in our research on the observation of interactions between participants in workshops involved meant that we avoided ending up taking our research in too many different directions which, although tempting, could have led to an impossibility of synthesising any meaningful results.

It is important to state that child/child interactions and adult/child interactions in the workshops have always been of great interest to the teams that initially got involved with this project.
From the beginning, it was clear that the tools of the kit would not be of great use unless they were from the beginning linked with high quality interactions.
This translated well to the teams, both in terms of quality of presentation and of listening, and welcoming the children's efforts. A speech therapist, attending one of the pilot workshops in Marseille, highlighted the children's 'quality of attention to what others have to say'. This quality, brilliantly conveyed by the adults, was invested in and taken on board by the children in each workshop by the children, particularly in their interactions among themselves.

In qualitative evaluations with these fist teams we often observed an important evolution in the children's self-confidence, a growing eagerness to ask questions and a growing desire to participate. For all that, the question of interactions between the participants was never clearly posed and defined as it has been here.
It is clear that the first teams who took part in the very first trials, and who had carried out a self-observation, were aware of the complexity of some scenarios and would have appreciated help to translate them into more precise terms, to make their elements more easily identifiable. It is exactly this that has been made possible by the research project carried out in 2012, documented in this report.

In our research project, the decision taken early on to focus on interactions in the workshops has been structuring, and has also allowed us to attach other essential issues to this discussion, like that of imitation, for example.

The choice to focus on these interactions led us to observe two types of interactions: Interactions between 'novices' and 'experts':
For those interactions in which the 'expert' is an adult, we saw that it was necessary to work while respecting the proximal zone of development (Vygotski, Bruner), with observation of the child's skills as our starting point.

As for those interactions in which the 'expert' is another child, the question raised is whether these 'experts' are able to develop this proximal zone of development with 'novices' or not.

This is a key question to address in systems of inclusion (e.g. integrating at school).

Our collaboration confirmed the necessity of establishing a secure context for blind or visually impaired children so they can feel comfortable asking questions about what surprises them and what they understand / do not understand.
Around them, sighted children have access to information that visually impaired children cannot even suspect. This discrepancy can make it difficult for visually impaired children to put across their ideas, to understand a situation or process, at the same time as their sighted classmates would face no problems. It is therefore important to pay attention to putting into place a context which supports the children's eagerness to ask questions, and even which encourages awareness of the *need* of asking questions.

Our observations have confirmed that there exists for blind and visually impaired children a 'mysterious unknown' around writing systems and have shown the relevance of working on everything concerning the discovery of writing and associated issues. (e.g. questions about why the number of pages in a braille book is different for a print version of the same book).

Our observations have illustrated the need to be able to answer unexpected questions from the children, without ruling out putting off some questions.
We saw that it is necessary for the team to be able to create a well adapted answer, which sometimes requires the creation of a tool, as in the example mentioned above. It is also necessary to allow the child to remain focused on the activity at hand, and so avoid unplanned-for questions.

WHAT THE RESEARCH PROJECT HAS TAKEN FURTHER

Our collaboration has confirmed and taken further the need to work on distinction between sounds with children, as well as the important of making an active and productive discovery of sounds.
We observed that auditive attention is often worked on in reference to verbal communication but not non-verbal.

We approached:

- The need to work on distinction between sounds with relation to aspects other than language, e.g. the sound of objects as they fall and hit the ground so as to work out what they are made of.

- The need to place the children in a scenario where they can produce sounds themselves, e.g. to make them participate in making the soundtrack to the story, making them act and produce sounds related to the text.

- The need to regularly work on 'sound photography' (Acousmatics).
Record a moment from a workshop and ask the children to listen to it again in the next session. This offers the potential, by way of the memory of a sound heard previously as a group, to make a game out of memorising, repeating and new possibilities for explanation (and activities focused on direct/indirect speech). His technique must encourage the children to ask questions, especially by alluding to what has been 'perceived' or inferred.

This collaboration has also confirmed for us the importance of encouraging tactile exploration and of supporting it with verbal accompaniment.
This had been previously felt and tested in the pilot workshops, but with recurring questions that were never answered about what aspects of such exploration should be 'led' and which should be offered with a clear method, and which should be left to free exploration.

Here our discussions concluded that movement should be accompanied, while still thinking about how to accompany and remaining aware of the need to respect the child's space.

The importance of respecting the child's space has been placed at a high level of importance and is fundamental in the continuation/follow-up of this project.

We were able to confirm the presence of a difficulty for sighted people to translate scenarios, movements and even objects into terms which do not rely on the sense of sight (enriched here by a greater awareness that there is sometimes an incompatibility between the speed of movement and the speed of speech).
We considered the difficulties faced by adults in the verbal translations that they have to deal with, and were able better to understand what can be modified in one's explanations but also certain limits that cannot be overcome:

Our exchanges allowed us to shed light on the difficulties faced by children in understanding the meaning of words, and in constructing certain concepts, if they relate to the sense of sight. These difficulties should not be attributed to a lack on the part of the children, but also a difficulty for (sighted) adults in expressing themselves using references other than visual references. This could be partially remedied by focus and training on expressing oneself better.

Nevertheless, while thinking about the sessions and watching the films again, we also noted a intrinsic difficulty when we want to use language to help us convey information about a movement or gesture: there is an insurmountable obstacle between the speed at which actions take place and the speed at which these actions could be explained (not to mention the necessary time for the child to understand and process this explanation). For example, explaining the movement of skipping (jump-rope).

Throughout our seminars we were reminded of the different levels of objectives at play, and we covered that in our work sessions, as part of the role of intention in the development of a skill, particularly in reference to the works of Bruner.

Initially, in the workshop plans, some exploratory activities are offered to the children, with the aim that the organisers can observe how the children behave when they search and explore.

Inasmuch as the workshops aim to help the children to progress their skills, we must also in these activities communicate an objective to the children, a sufficiently open objective for their exploration to be free and interesting to observe, but sufficiently clear so that they can decide to achieve a goal.

Throughout our work sessions, reflections on our experiences in the workshops and the theoretical contributions on the status of imitation for blind children (including but not limited to demonstratives) encouraged us to deeper study.

Moreover, knowing the negative connotation of what is often quickly labelled as ‘verbalism’ among blind people, it could perhaps be important to promote reflections and theoretical contributions on the functions that the repetitions of certain phrases or words made by blind children could have.

The research project has shed light on the importance of clear use of the word ‘see’, but also of the way of allowing a child who cannot see to grasp what sighted people perceive by use of the sense of sight.

This point was developed further earlier in this report. When a sighted adult asks a child who cannot see a question, for example about what the sighted adult can see very clearly is in the child’s hand, it is difficult for the blind child to infer what the adult can see and not see. This is a commonly recurring situation in day-to-day life. This point seems to us to deserve being in need of reflection on the part of educators.

We have highlighted the importance of making the children join in with illustration their book, and we call for even more important developments in this respect. The involvement of other members of the team working in the field of adaptation of books is certainly requested.

One can here include the potential of working on the idea of scale items (e.g. the miniature broom made for the book). This allows us to link sequential and detailed exploration with a global exploration, by way of a comparison between exploration of a real item and a small scale model.

Observation of interactions has allowed us to as ourselves questions about social relations, especially the importance of 'looking' at the person we address, even when we cannot see them/they cannot see us – how and when should we work on this with the children?

OTHER OBSERVATIONS

The qualitative observation of two young blind girls allowed us to note that by way of precise oral repetition of the text during the workshops and the activities carried out to help understanding of the story, the two girls were able to read the book comfortably and quickly in braille, especially in our presence to their parents in the final session. Moreover, the book was at this point a real object of exchange and interaction that the children took on to show their parents.

As for the absolutely necessary conditions for the good running of the workshops, our observations confirmed the importance of controlling the sounds occurring around the children, and be careful to avoid too many people speaking at once. Too many voices stops understanding.

KEY POINTS TO REMEMBER

Our collaboration in this research project allowed us to clarify the difficulties in play when compensating for visual impairment, and gives new directions for quality new research.

Our collaboration confirms, while clarifying these difficulties, specifying them and expanding them, the key points to focus on with teams working on this so as to guarantee the best adapted context possible for the specific needs of blind and visually impaired children, as in all situations.

It allows us to increase the relevance of the work-courses offered in the exercise books linked with the kits, and brought about an update of the exercise books and the training units available.

The tools set-up by Anaïs Fer, designed to help observe the evolution of behaviour, constitute a further direction for research, the development of which would be similarly desired in line with this project.

Throughout our meetings and university seminars, the dialogue between both specialists and non-specialists in visual impairment has been invigorating and represents a further call for setting up control groups / focus groups.

Finally, the theoretical information that each member of the project has contributed have been a great step in setting up workshops based on prior theory. Our collaboration has shown the great importance of linking research, the field, intuition and conceptualisation, all of which rely on the foundations of our work.

PART 3: THINKING ABOUT EVALUTATION TOOLS

I – THE WORK OF MAYA HICKMANN

Maya Hickmann produced pilot tests to evaluate the impact of workshops on the narrative capacities of the children. We did not have the time to carry out trials, but her ideas have great potential, and we hope to try them out shortly.

THE USE OF STORIES ON A SIMILAR LEVEL
This idea consists of offering two different stories of a similar level to that used during the workshops in two different phases; before and after the workshops. The differences observed in the understanding of these additional stories could be related to the work carried out during the workshops themselves, and could act as a control for the child's level of comprehension.

AUDIO SCENARIO
This recording of a few minutes in length allows us to see if the child able to transform audio clues and dialogue into a story. Other evaluative methods for the sense of hearing are also envisaged: spotting the 'odd sound out'; recognising the sounds of events and telling if they are present in the story or not.

However, we offered a lexical evaluation before and after the workshops, based on a method created by Anaïs Fer:

II – REFLECTIONS ON THE LINK BETWEEN WORKSHOPS AND LEXICAL ENRICHMENT BASED ON SPONTANEOUS DEFINITION - Anaïs Fer

"To define language is to define the world" (Rossi, 2008). It is this observation on which the ideas of 'ordinary definition' or 'natural definition' are based (Riegel, 1988). This constitutes one of the most recent domains of metalexicographic research, though it remains little exploited. Cultural references, personal experiences and the child's perceptions of the world around him/her are expressed by way of ordinary defining statements. Ordinary defining statements allow the child to take on board the external reality and to give names to things by way of language (Rossi, 2008). They are therefore perceived as being a variable between the world and words, between language and thought, the objective being the transmission of information.

It is around this notion of meaning that we decided to present our reflections, in line with the lack of tools for evaluating the language skills of visually impaired children. This led to an initial study carried out between 2008 and 2010 in Besançon and in Lyon with 21 visually impaired children and 21 sighted children (Anaïs Fer, under the supervision of Sophie Derrier). We relied on prior research carried out with French-speaking sighted children (Martin-Berthet: 1993; François F.: 1985) and Italian speaking children (Arcaini: 1981, Brandi, Cordin: 1986 ; Rossi: 2009). Throughout our study, we noted the potential for considering natural definition as a relevant evaluation method. Indeed, the strategies employed by sighted children seem to closely reflect the stages of lexical acquisition described by Dubois (1997). Gradually,

they tend to master complex models of definition, thus approaching a linguistic 'norm'. The strategies employed by visually impaired children can show us that this progressive progression of lexical development is slower for such children. This follows Hatwell's (2003) argument, which discussed specific lexical development. One of the aspects that seemed fundamental to us is that, although sometimes they have a different function to that of sighted children, visually impaired children possess real capacities for linguistic production and elaboration. By explaining the meanings of words with the instruments that language makes available, these children demonstrate a clear lexical awareness.

Moreover, we realised the importance of distinguishing between the grammatical categories of items and the school level of the subjects, and also the importance of not amalgamating the different types of visual impairment. The consequences of the latter on the structure of thinking and labelling of the world seem highly specific to each child. The tendencies shown throughout our study suggest indeed that sighted children and congenitally blind children make use of their personal experiences to access meaning. Amblyopic children and children becoming blind later in life favoured attaching a specific, usually perceptive, characteristic to a concept. This engenders different pedagogical and clinical perspectives adapted to each child. We are however convinced of the importance of respecting the pace of every child's lexical development and of:
- creating many concrete opportunities for perceptive experiences while highlighting certain clues like weight, size, noise (e.g. using the image of a rabbit, by touching a real rabbit or rabbit hair etc.)
- combining this with a verbal explanation from the adult (Lewi-Dumont, 2000).

The conception of the workshops for the kit for 'The Very Little Doll' corresponds exactly to our twofold interest in clarifying mental images that are already present, and in helping the children form new images of aspects of reality allowing them to expand previously known concepts. We were interested in looking at the impact of the workshops on mental images by way of ordinary defining statements. We therefore asked the children to define 42 items before the start of the workshops discussed in this report, and after they had taken place. To do this, we took the list used in our earlier study, and substituted half of the words with words of the same grammatical category, taken from the world of 'The Very Little Doll'.

The strategies used in the pre- and post-tests were analysed and we tried to compare them. Two extracts from the responses of 'E', a visually impaired child, are covered below, defining 'park' and 'mittens', respectively:

A place where there are games (February 2012)
Somewhere where children can play and the adults can sit on a bench, there are games where the children can climb and go down, and there are slides and tunnels and games. (June 2012)

The two definitions highlight the typical strategies used in childhood (Rossi, 2008). However, the response given after the workshop seems more rich.

They're big gloves and it's very hot when you wear them. (February 2012)
Like a glove, which is bigger but there is no gap between the fingers (June 2012)

Here, the first definition is typical of a child's response (personal experience). The second definition demonstrates a detachment from personal experience and tends towards a more linguistic definition.

It is however suitable to take into account the limits of such experimentation, in particular the long and redundant character of the list of words. Also, this task is carried out at a given moment, and we know that the data gathered can vary considerably from one moment to another. And so, we noticed that for some children, the idea of finding themselves in a one-on-one situation with the adult (rather than the usual group activities) was disturbing. Finally, the child may also give varied responses throughout the activity. Ordinary defining statements, as relevant as they seem, are simply the brief expression of implicit mental images in the child's lexicon.

Moreover, it was important to us to enrich this reserach and to reflect on complementary methods of evaluation to take place both before and after the workshops, such as tests focused on conceptual thought and the story studied. We can thus evaluate the children's understanding of the outline of the story. If the child passes, but their understanding of the narrative outline is weak, we can assume a linguistic deficit. However, if the test is failed, we can assume a conceptual deficit. There is not currently available an evaluation tool for this for visually impaired children. The 'Frog' test (a standardisation test carried out with children aged 4 to 8 by Hilaire-Debove and Durand, 2008) is based on a black and white book consisting entirely of illustrations. The child explores the book alone, then tells the story to a person who does not already know it. It is interesting to consider how to adapt this tool allowing for a double analysis – both narrative and linguistic.

III – COLLABORATION WITH THE LABORATORY - Marie-Paule Thollon-Behar

This type of collaboration is always of great benefit for a research team – close contact with questions raised in the field is indispensable for researchers, and allows them to testing their models and theories and putting them into practice, and forces them to think with others about the questions which concern the development of children.

The PsyEF lab was approached to be the scientific guarantor of this project. Collaboration with the CTRDV could have taken another form, if a member of the team, an academic, had been able to use this opportunity as a field of research for scientific publication. My status as a psychologist and a doctor of psychology, involved in my research, but not as an academic, led me to suggest the organisation of a collaborative research/action project based on a methodology that I use in the field of early childhood. I was therefore able to help the group with my knowledge of child development, as well as my skills in this specific research/action method. The group got involved in the process with dynamism. This was a new experience for me, in a project somewhere between professional work and research activity.

The PsyEF team seminar welcomed our group on two occasions for a presentation on the progress of our work. The exchanges were on both occasions very animated and encouraged the link between theoretical and field-based research. The problem of written access to information fit well into the topics studied by the team. The

collaboration led us to deeper study of certain points, such as that of the mental images formed by blind children.

BIBLIOGRAPHY

Translator's Note:
All the resources used in this report were in French. The translator has endeavoured to make use of the original English texts where possible, or of authorised translations, but when these have not been found or indeed previously translated, the translator of the report has translated quotations and citations from books himself. The references below are to the French versions of the texts cited.

BOOKS

BEN SOUSSAN Patrick, KORFF SAUSSE Simone, NELSON Jean-René, VIAL-COURMONT Michèle, Naître différent, Paris, Erès, 2007

BESSE Jean-Marie et l'0, *Regarde comme j'écris ! Ecris d'élèves, Regards d'enseignants,*
Paris, DUNOD, 2000

BERTHOZ Alain, Le sens du mouvement, Paris, Edition Odile Jacob, 1997

BRUNER Jérome, Le développement de l'enfant Savoir faire, savoir dire, Paris, PUF, 1998 (7e ed)

BRUNER Jérome, *Pourquoi nous racontons-nous des histoires ? : Le récit au fondement de la culture et de l'identité*, Paris, Retz, 2010

BULLINGER André, *Le développement sensori-moteur de l'enfant et ses avatars*, Monts, Erès, 2011,

CLAUDET Philippe, *Un long couloir rempli de fauteuils en haut d'un escalier en plein vent*, Talant, LDQR, Collection Théoria, 2008

CRAHAY Michel, *Psychologie de l'éducation*, Paris, PUF, 2010

DAMASIO Antonio, *L'erreur de Descartes*, PARIS, Odile JACOB, 1994

DEVELAY Michel, *De l'apprentissage à l'enseignement*, Thiron, ESF éditeur, 2012

DOISE, W., & MUGNY, G. *Le développement social de l'intelligence*. Paris : A. Colin. . 1981/1997

DOLY Anne-Marie, Thèse de doctorat de science de l'éducation, *Métacognition et pédagogie. Enjeux et propositions pour l'introduction de la métacognition a l'école*, dirigée par Michel DEVELAY, Université Lyon 2, 1998

FERREIRO Emilia, GOMEZ PALACIO Margarita. et col. — *Lire, écrire à l'école : comment s'y apprennent-ils ? Analyse des perturbations dans les processus d'apprentissage de la lecture et de l'écriture*, LYON, CRDP, 1993

GARDNER Howard, *Les intelligences multiples*, PARIS, Retz, 1996

GENTAZ Edouard, *La main, le cerveau et le toucher*, Paris, Dunod, 2009

GRIFFON P. *La rééducation des malvoyants*, PARIS, Privat éd., 1993

GUIDETTI Michèle, TOURRETTE Catherine, *Handicaps et développement psychologique de l'enfant*, Paris, Armand Colin, 2007

HALL Edward T, *Le langage silencieux*, 1959, Edition du seuil, Tours, Mame, 1984

HATTWELL Yvette, *Psychologie cognitive de la cécité précoce*, Paris, Dunod, 2003

HATTWELL Yvette, STRERI Arlette, GENTAZ Edouard, *Toucher pour connaitre*, PARIS, PUF, 2000

HOUDE Olivier, LEROUX Gaëlle, *Psychologie du développement cognitif*, PARIS, PUF, 2009

LINDERS Clara, *Le langage flottant*, (Pays-Bas), Traduction CLAUDET Philippe, Dijon, LDQR, 2011

LUSSIER Francine, FLESSAS Janine, *Neuropsychologie de l'enfant*, PARIS, DUNOD, 2001

MAULINI Olivier, *Questionner pour enseigner & pour apprendre, Le rapport au savoir dans la classe,* Paris, ESF, 2005

MEIRIEU Philippe, *Apprendre en groupe – Tome 2 : outil pour apprendre en groupe*, LYON, Chronique sociale, 2010 (8e ed)

MARENDAZ Christan, *Du regard à l'émotion : la vision, le cerveau, l'affectif*, Paris, Le Pommier, 2009

NADEL Jacqueline, *Imiter pour grandir – Developpement du bébé et de l'enfant avec autisme*, Paris, Dunod, 2011

OLIVIER Gérard, *La cognition gestuelle : ou de l'écho à l'égo*, Grenoble, PUG, 2012

PAOLETTI René, *Education et motricité*, PARIS BRUXELLE, De Boeck Université, 2003

PIAGET Jean, *Le jugement et le raisonnement chez l'enfant*, NEUCHATEL, Delachaux et Niestlé, 1967

RAYNARD, Un autre regard sur la réadaptation des déficients visuels, Solal, De Boeck, Bruxelle, 2003

REUCHLIN Maurice, BACHER Françoise, *Les différences individuelles dans le développement cognitif de l'enfant*, PARIS, PUF, 1989

RIEGEL Martin, *La définition, acte du langage ordinaire – De la forme aux interprétations*, In : Chaurand J, Mazière F, *La définition*, Paris : Larousse ; 1988. pp. 97-109.

ROSSI Micaela, *Dictionnaires pour enfants et apprentissage du lexique : les enjeux de la définition*, In : Heinz M., Le dictionnaire maître de langue, Lexicographie et didactique, Berlin : Frank et Timme ; 2009. pp. 209-228.

VIGOTSKY Lev, *Pensée et Langage*, Paris, La Dispute, 1997 (3e ed)

VILLEY Pierre, *Le monde des aveugles*, (1914), Dijon, LDQR, 2005

VITAL DURAND François et BARBEAU Martine, *Mon enfant voit mal*, Bruxelle, De Boeck, 1995, 96 p.

VERMERSCH Pierre, *L'entretien d'explicitation*, Issy-les-Moulineaux, ESF,7ème édition 2011

WEIL BARAIS Annick, *L'homme cognitif*, Paris, PUF,1993

ARTICLES:

ASTOFOLI Jean-Pierre, *Le questionnement pédagogique*, Economie et Management, n°128, Juin 2008, pp 68-73

BUCHS Céline, LEHRAUS Katia, BUTERA Fabrizio, *Quelles interactions sociales au service de l'apprentissage en petits groupes,* in DESSUS Philippe et GENTAZ Edouard, Apprentissages et enseignement, PARIS, DUNOD, 2006,

CRAVATTE Astrid, *Comment les enfants expliquent-ils les mots ?*, Langage 1983 ; 14 (59) : 87-96.

DEBOVE-HILAIRE Géraldine, DURAND Odile, *Grille d'évaluation du récit oral (4-8 ans)*,
Mémoire d'orthophonie : Lyon ; 2008.

DUBOIS Danièle*, Catégories, prototypes et figements. Constructions d'invariants et systèmes symboliques* In : Martins-Baltar M., *La locution entre langue et usage*, Paris : ENS Editions ; 1997. pp. 103-129.

FRANÇOIS Frédéric, *Qu'est-ce qu'un ange ? Ou définition et paraphrase chez l'enfant*, in : Fuchs C., *Aspects de l'ambiguïté et de la paraphrase dans les langues naturelles*, Berne : Lang J, 1985, pp. 103-120.

GALIANO Anna R., PORTALIER S., *Les fonctions du langage chez la personne aveugle*, l'année psychologique, 2009, n°109, pp 123-153

GALIANO Anna R., BALTENNECK Nicolas*, Interactions verbales et déficience visuelle : le rôle de la vision dans la communication*, Revue électronique de Psychologie Sociale, 2007, N°1, pp. 47-54

HICKMANN Maya, Langage, cognition et développement : *Bilan et nouvelles pistes de recherche – perspectives pour l'enfant présentant un déficit visuel*, Journée d'Etude FAF, Paris, 1er avril 2009

LAGARDE J., ERBANI E., THON B. - LARAPS, E.A. n° 2044, Université Paul Sabatier,
UFR STAPS TOULOUSE III, 118 Route de Narbonne, 31062 Toulouse Cedex 4.
Consignes graphiques vs verbales et représentations pour l'exécution future d'un trajet locomoteur, n°44 du 12/1997, Volume 18, p 19 à 32

LEWI-DUMONT Nathalie, *Une souris verte… Remarques sur le sens des mots chez les enfants aveugles*, La nouvelle revue de l'AIS 2000 ; 9 : 79-92.

LEWIS Vicky, NORGATE Sarah and COLLIS Glyne, « *Les capacités de représentation d'un enfant aveugle congénital entre un et sept an* » 2002/3, vol.54, pp 291-307

MELTZOFL A. N.. & MOORE, M. K., *Imitation of facial and manual gestures by human neonate,*1977, Science, 198, pp 75-78

PASCALIS Olivier, CODINA C., BUCKLEY D., PORT M., "*Deaf and hearing children: a comparison of peripheral vision development*", Developmental Science, Volume 14, Issue 4, pp 725-737, Juillet 2011

PORTALIER Serge, VITAL-DURAND François, *Locomotion chez les enfants mal-voyants et aveugles*, Psychologie Française, 34-1, 79-85, 1989.

RAVEAUD Maroussia, *La mise en ordre du corps à l'école en Angleterre et en France*, extrait de Modernisation de l'école et contextes culturels sous la direction de MALET Régis, BRISARD Estelle, PARIS, l'Harmattan, 2005

SCHEPENS Claude, *« La communication non visuelle ou visuelle perturbée : difficultés et stratégies compensatoires* », Journée pédagogiques GPEAA, Actes des 45èmes journées du GPEAA, Paris, octobre 2009

SOURIAU J., *Surdi-cécité et développement de la communication, problèmes et stratégies*
Adaptatives, revue Enfance 2000, **1** : 3-18

THON Bernard, *Parler, penser, agir : des relations complexes*. Conférence dans le cadre de la Semaine du Cerveau, Toulouse, 2009

THON Bernard, *Place et limites de la cognition dans l'acquisition des habiletés perceptivo-motrices*, Séminaire interdisciplinaire Archives Jean Piaget, Genève, mars 2009

VURPILLOT Eliane, *Le monde visuel des enfants*, La recherche, 1974

WEBSITES:

CENTRE TECHNIQUE REGIONAL POUR LA DEFICIENCE VISUELLE, http://www.ctrdv.fr/ mai 2013

COMENIUS EVEIL, http://www.comenius-eveil.eu, mai 2013

CRESAM, http://www.cresam.org/ http://www.comenius-eveil.eu, janvier 2013

FEDERATION DES AVEUGLES DE FRANCE, http://www.faf.asso.fr/, http://pre-lecture.faf.asso.fr/, mai 2013

PUPILLES DE L'ENSEIGNEMENT PUBLIC (PEP) http://www.lespep.org/ http://www.lespeprhonealpes.org/ mai 2013

UNIVERSITE DE GENEVE - laboratoire du développement sensori-moteur, affectif et social (SMAS) de la naissance à l'adolescence, http://www.unige.ch/fapse/sensori-moteur/index.html, janvier 2013

MEIRIEU Philippe, http://meirieu.com/, avril 2013

De VECCHI Gérard, http://www.everyoneweb.fr/gdevecchi/, février 2013

TERRIER Claude, http://www.cterrier.com/, décembre 2012

ZIN Jean, http://jeanzin.fr/ecorevo/sciences/damasio.htm, mars 2013