

# An Approach to Establish the Interactions between Caregiver and Child with Profound and Multiple Disabilities

— Based on Japanese Psychological Rehabilitation (Dohsa-Hou) —

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The purpose of this study was to examine the subjective experience of social life of a child with profound and multiple disabilities by analysis of responsive behaviour to an intervention utilizing body touch. The subject in this study was a nine-years old girl with physical/motor disabilities, intellectual disability, and epileptic stroke. The method of touching the subject's body and the task of raising her arm with the caregiver (while lying on the back) was used to form contingent and reciprocal interaction. In training, the interactions between the child and the caregiver were described from view points as follows: 1) spontaneous movements, 2) responsive movements against the caregiver in body touch, 3) gazing movements, and 4) focus of attention. In addition, characteristic behaviour of this case session were used to set targets for future interaction sessions. This case study describes some stages of subjective social experience in a child with profound and multiple disabilities. These results are discussed in term of clinical intervention model for children with profound and multiple disabilities based on subjective social experience.

**Key Words:** Dohsa-Hou (Japanese Movement Psychotherapy), Children with Profound and Multiple Disabilities, Subjective Experience, Sense of Self (Others), Body Touch

## I Introduction

The Dohsa-Hou (Japanese Movement Psychotherapy) of psychological rehabilitation has developed as a theory and practice for facilitating the development of children with physical and intellectual disabilities. It is defined as "therapeutic activity to promote more appropriate self activities as a whole including self-control by means of Dohsa ("action") in an effort to achieve intentional body movements" (Naruse, 1995).

"Profound and multiple disabilities (PMD)" are those of the level that the person is severely mentally disabled, has virtually no language, has severe difficulties with communication with others and adaptation to their environment, and requires constant care in daily life. This is to say they are functioning at a developmental level of one year old or less (in practice, often well under a year).

### 1. Difficulties in Interaction with Children with PMD

There have been reports (Ninomiya, 1992; Tokunaga, 1996) that by applying the Dohsa-Hou to a child with PMD, the child smiled in a sitting position, increased gazes, decreased hazy gazes and increased the interaction with the caregiver. In making such efforts to maintain and promote the health of children with PMD, it is important to utilize approaches that will identify the child's subjective action (either voluntary or spontaneous movement) so as to establish interaction between the child and the caregiver.

However, trying to implement educational activities for children with PMD using training methods including Dohsa-Hou often faces problems such as the following. 1) The caregiver tries to identify spontaneous movements of the child but cannot do so. 2) For this reason, although the caregiver feels a sense of the child as being a physical body, s/he cannot obtain a sense of the child as being a "self (others)" or a coherent, self-willed entity.

3) The caregiver may try different approaches but cannot feel a sense of co-activity; he strongly feels that the relation of the interaction is one-way.

Physiological or biological therapies such as physiotherapy can be administered without such a sense of self or of co-activity. However, with psychological therapies or educational activities that deal with the child as a subject or agent, such senses of self or co-activity are believed indispensable.

The issues involved in these difficulties include 1) those that concern the caregiver's caring skills and the sensitivity for understanding and inferring the child's behaviour and, 2) those related with the working hypothesis of children's subjective experience in understanding and inferring the child's behaviour. The first type of problems include the attitude of the caregiver who does not try to understand body movements as manifestations of psychological activities and the sensitivity(or lack thereof) of the caregiver who cannot detect slight movements and changes in posture through body contacts. As for the second type of problems, when assessing the development of children with profound disabilities, the structure for the assessment of normal development is often insufficient to detect developmental changes in individuals with PMD.

Until recently, the Dohsa-Hou method has taken the self as the subject/agent in body movement as a given without dealing with its establishment or formative processes. Moreover, when dealing with children with PMD, the method does not have special training procedure for such children but uses its own training procedure for children with physical/motor disabilities in accordance with their level and state of motor difficulties" (Ninomiya, 1992). For these reasons, treatments that have been administered have included helping children relax their muscular tensions and helping them use gravity to control their body posture in a sitting posture.

Such an approach however, is mere application of the training procedure used for physically disabled children of normal intellectual disabilities to children with PMD. This simple application concerns the problem "2)" above of the working hypothesis. In fact, applying this hypothesis to children with PMD often results in unilateral therapy not accompanied by the sense of self (others) or of co-activity.

Specifically, the Dohsa-Hou has considered it important for the child himself to learn how to relax his own psychological and physical tensions and has emphasized "own body under gravity" (raise arms, etc., against gravity). It has been understood that tackling such tasks would result in the activation of psychological activities. However, how does the subject/agent being taught how to relax become aware of the fact that he has tension or is relaxed? And how good are the activities of the subject/agent for becoming aware that these things are clearly established? These issues have not been examined and practical applications have been continued.

## **2. Some Issues regarding the Originalities of Dohsa-Hou**

The originality of the Dohsa-Hou is that while the framework of conventional medicine and kinesiology has been to see body movements as muscular and skeletal activities or cerebral neural activities, Dohsa-Hou sees such movements as manifestations of the subject or agency's psychological activities. For this reason, the Dohsa-Hou method has treated the self as the subject/agent for body movement as a given without questioning its establishment or formative processes. The question of whether such a self is established at all or how it is formed could undermine the originality of the Dohsa-Hou so that such questions have not been asked.

However, given the fact that the Dohsa-Hou method has developed steadily for the last 30 years, and seems likely to do so in the future, it is believed that this question will become both central and unavoidable. It is important to examine this issue in examining the future of the Dohsa-Hou.

Thus, the issues that need to be examined in the future can be summarized as follows.

- 1) The issue of how the self as the subject/agent is formed and established as an integrated conscious structure. As a result of such establishment, how does the self become aware of the own body or others. Moreover, how the self becomes aware of the fact that others have volitions and intentions as subjects or agencies ?
- 2) In addition to relaxing bodily tensions, if the act of subjectively relaxing one's own tensions is to occur, what factors are involved? Similarly, in addition to bodily tension, how does the act of physical and psychological tension as an intentional act occur ?

3) Under the Dohsa-Hou, the caregiver gives action tasks and the child is expected to realize, understand and focus his attention on such tasks and maintain such attention. Such tasks given by the caregiver are action tasks. However, they also incorporate the caregiver's intentions. How does the subject or agency realize and respond to such intentions of others?

Therapeutic approaches other than the Dohsa-Hou have theories and methods for promoting the initial sensory-motor development. A typical example is based on Piaget's developmental theory. Under this approach, at the sensory motor stage, the child incorporates the external world by utilizing the reflex schemes, after which he forms the primary circular reactions which are the coordinated action of the hands and eyes. There are theoretical approaches based on these behavioural indicators. However, therapeutic methods based on subjective experiences are believed effective in treating children with PMD.

### 3. Subjective Experience of Children with PMD

Studies are being conducted from the viewpoint of subjective experience in order to understand infants' sense of self and others by examining their development and inferring their subjective experience of early development.

Concerning this subjective experience, Stern (1985) who specializes in infant development, has inferred the social life experienced by infants, terming such experiences the "subjective experience of social life." He defines such experience as a sense of self that "appears to emerge as maturation of capacities makes possible new organizing subjective perspectives about the self and others." Concerning this development of the sense of self, he proposes four different senses of the self (emergent self, core self, subjective self and verbal self). From birth to age fifteen months, the infant is said to experience the stages in which he is not sure of his self, in which he becomes aware of his self, and that in which he can become aware of the relationship with others.

However, Stern's hypothesis concerns the developmental stages of normal infants until age one. It is not certain if these "stages" are appropriate in understanding the behaviour of children with PMD.

### 4. Purpose of This Study

This study provided a child with PMD an interaction with body touch. Developmentally speaking, this child was at the developmental stage of less than age one. This corresponds to the Piaget's stage from "elementary sensory stage" to "intentional sensory motor stage" (Okamoto, 1986). The latter is believed to be a stage where the child's subjective experience of social life changes greatly. By observing the child's facial, vocal, gaze and movement behaviour during the training process, the caregiver sought to infer the child's subjective experience of social life (action, action characteristics and experience) as she perceived and recognized (experienced) the environment, experienced her own body, and interacted with others.

## II. Method

### 1. Subject

Subject was a nine-years old girl in grade 3 (as of June 1990). Due to quadriplegia as an aftereffect of encephalitis of whooping cough(pertussis), she suffered from physical/motor disabilities, intellectual disability, and epileptic stroke. She was 108 cm tall, weighed 13.0 kg, and had lean body and limbs. She ate foods in small bites, and sometimes coughed or ejected the food with her tongue. She often kept liquids in her mouth or threw them up. She did not have good control of her head and could not hold it aloft in the upright position. She spent most of her daily life lying on her back. She did not turn over in bed or move about, and her head was often turned right. A slight movement of her legs was accompanied by a strained expression on her face. Her sleep tended to be irregular, and she often suffered from epileptic stroke (her ocular movement to the left).

2. Initial Developmental State


She often moved her eyes, but rarely gazed at or scanned the trainer(therapist). To touches, she sometimes responded with changes in facial expressions and vocalization. She bent or extended her legs slightly while lying on her back. She also moved her right arm to her face and rubbed it. She rarely changed her facial expression. When spoken to, she only moved her eyes; she was visually disoriented and rarely responded with clear facial expressions.

3. Procedure

The method of touching children's back, waist, arms, etc., to pick up children's response was used to establish contingent and reciprocal interaction. Here, "response" was defined as consisting of such things as changes in facial expressions, including eye movements; vocalization; limb movements; and muscular tension, relaxation and slight movements perceived by the therapist through body touches.

The task of raising her arm with the therapist(while lying on the back) was used, which is believed a good indicator of the interaction between a child and a therapist. This was implemented face-to-face, and the action on subject and subject's reaction were observed easily observed(see Table 1). The training sessions were implemented from June 1990 to March 1991, for about an hour a week for a total of 24 sessions. These were given as special lessons in the classroom of the F Special School and with the classroom teacher. In addition to written observations, the sessions were videotaped once a month.

Table 1. Basic Actions Toward Interaction

Task	Actions by Therapist	Illustration
Raising the Arm	The child is lying on her back. The therapist sits next to her facing her. The therapist supports one of the child's arms at the elbow and wrist and moves it. He talks to the child such as "There you are!" if the child applies force as if to stop the arm movement, or "You don't like this?" if the child ceases to respond. The therapist raises the child's arm to beside her head, and slowly moves it upward. As the therapist moves the child's arm, he observes the movement of the child's arm, that of her other body parts, that of her eyes, and facial expressions and vocalizations. If the therapist notices something, he talks to the child such as "Are you looking at me?" or "Your other hand moved" and observes the child's reactions.	

III. Results

Below are summarized the subject's developmental states, spontaneous movement, and responses as observed. Table 2 shows developmental state and progress both initial period and after training.

1. Responses in Raising the Arm (Task)

- 1) As for spontaneous movements, she increased the movement of her right leg. She also moved the arm being raised by the therapist as well as the other arm.
- 2) She still had her head turned to the right, but increasingly moved her mouth as if to mumble and moved her head to the left.
- 3) Also increasing was the action in which as she moved her arm with the therapist's and when her arm came to the spot to stop moving, she exerted force as if to swing her head, and then relaxed her muscles.
- 4) As for eye movements, she started to make eye contacts with the therapist. When the therapist called her name and came face-to-face with her, she maintained gaze and followed the therapist.

**Table 2.** Initial Developmental State and Progress during Sessions

Task	Initial Period (June-July, 1990)	Progress (January-March 1991)
<b>Raising the Arm</b>	- The child usually has her elbows bent, so that when the therapist applies a little force to extend her arm, the arm extends a little. Her hands and upper arms show only slight spontaneous movements. She has her hands closed though not so much to clench them.	- She increasingly moved her right leg. Some of such movements seemed spontaneous. She sometimes tried to pull down the therapist's hands that supported her arm. And along with the movement to push back the arm that was being moved, she sometimes moved the other arm.
	- As the therapist moves her arm and when it comes to the spot (above her face) to stop the movement, she swings her head a little to the right and left, quickens her breath, and shows a facial expression as if to strain. She often brings her right hand to her mouth and eyes and scratches them.	- Also increasing was the action in which as she moved her arm with the therapist's and when her arm came to the position to stop moving, she applied force as if to swing her head, and then relaxed her muscles. She was able to raise her arm higher (close to the ear) and the arm movement became smoother.
	- She often moves her eyes but rarely fixes the gaze on the therapist. Her eyes sometimes move with her hand movement and the therapist's movement, but it is not certain if she is tracing such movements.	- When the therapist called her name and came face-to-face with her, she moved her eyes as if to watch the therapist. Eye movements to watch her arm being raised or to watch the therapist increased.
	- Her head is often turned right. When the therapist pulls it slightly to the frontal position, she does turn her head but quickly applies force and turns it back to the right.	- Eye movements as if to watch the therapist increased. Two or three times, she touched the therapist's hands that were supporting her arm with her right hand.
		- Though her head was still turned right, mouth movements as if to mumble, and head movements to the left increased.

**\* Episodes**

- When she came to the school, clear changes in her facial expressions had not been observed. However, one day (January 1991), when the classroom teacher picked her up with calling her name, she brightened her expression and smiled.
- In 1991, when called her name in the morning meeting, action as if to vocally respond increased.
- When held in arms, she tended less to apply force as if to protect herself.

5) As for action that might be indicative of awareness of others, she placed her right hand on the therapist's hand that supported her arm two or three times. However, it was not certain whether this was an action based on awareness of others.

**2. Action Characteristics (Intentionality)**

- 1) A showed slight spontaneous movements. However, the movements changed from simple vocalization and changes in facial expressions to those involving emotion such as getting excited or calming down as exemplified by straining and relaxing. She also increased her arm and leg movements.
- 2) Her responses to the therapist's action of touching and moving her arm changed from physiological and passive ones of stopping the action as if resisting, to dynamic (and active) ones such as moving the arm when the therapist stopped applying force and applying force as if to repel.
- 3) When the therapist began, she rarely established eye contacts with the therapist. However, as the sessions progressed, she established eye contacts several times.
- 4) There were times that she gazed at the therapist which were indicative of beginning of the formation of the action directing her attention to an external object (therapist).
- 5) As the sessions progressed, she started to show actions, although small, that were accompanied by changes in facial expressions, such as extending her arm by straining.
- 6) Her psychological activities could be inferred from slight movements of her eyes, hands and legs.

## IV. Discussion

### 1. From the Case Study

#### 1) Subject's Future Issues

During training sessions, the subject established eye contacts with the therapist several times. However, there were no clear actions that could be seen as responses to talking. Her future issue is to accurately grasp changes in the external world by responding to light and sound. To this end, she needs to direct her attention to what interests her and maintain that attention. Her spontaneous movements and responses to action by others changed from physiological ones to those involving some emotion. However, such cannot be said to be making "self-generated movements." The future issues for her might be to increase movements that accompany emotional changes and to initiate goal-oriented movements.

#### 2) Subject's Developmental Stage

From the stage of linking all sorts of experiences by acquiring information from the external world through the senses of sight, hearing and touch, this subject is believed to have come to the stage of becoming aware of her self as an integrated self by intentionally and planfully moving the body in accordance with emotional changes.

#### 3) Issues

Changes in the nature of child's subjective experiences could be inferred from her behavioural changes. Such changes are, of course, inferences by the therapist. Yet such things as eye movements, facial expressions, and the nature of the reactions (sense of volition) to the therapist's action provided important clues. In the future, we would like to clearly identify the movements that allow us to infer the subjective experiences of children with profound and multiple disabilities, and to examine how such experiences can evolve. In particular, it will be necessary to investigate the process whereby they organize subjective perspectives about the self and others.

#### 4) Establishment of the Sense of Self

Naruse (1985) states that "if the action-self is to become aware of and recognize the self-body, he needs the sensation of movement, and the self must have become aware of this also." It is believed that accumulation of sensation-movements and sensation-acts would clarify the distinction between self-agency and objects. For the self as a subject or agent to become established, the intention (plan) of action, anticipation of results, and a sense of efforts are believed to serve important functions.

These experiences are believed to allow the self to distinguish between itself and the external world and to constitute important factors for the self to distinguish between itself and others.

### 2. General Discussion

This training was conducted to see if it was possible, by observing a child with profound and multiple disabilities, to identify the stages of "directing attention to action by others," "directing attention to others" and "directing attention to others and responding to their action" in relation to "subjective experience of social life" as termed by Stern (1985). It was not designed to test a hypothesis. The purpose was to examine (1) the type hypothesis of Shimoyama (1997) for understanding the development of the subjective experience of social life in the case of children with profound and multiple disabilities, based on this therapist's clinical experiences, (2) the four-stage hypothesis based on Stern (1985)'s "subjective experience" pertaining to infants, and (3) the developmental stages based on case studies of children with profound and multiple disabilities as according to Tokunaga (1992).

As far as the subjective experience of social life is concerned, the awareness of the self and others and the

way the self experiences the action by others are important factors. From the case study, it was possible to infer that there are several stages in the subjective experience of social life of children with profound and multiple disabilities who are at the developmental stage of less than one-year old.

There must be several stages which precede a child's acquisition of the ability to interact, by noting others, becoming aware of others and understanding others as subjects of intentional action. For instance, there is the stage where he can gaze and scan, maintain the attention directed to others, and initiate conscious and intentional movements. This stage might be preceded by one for linking all sorts of experiences by acquiring information from the external world through the senses of sight, hearing and touch.

Such stages are believed to be followed by those of "dyadic interaction" between the child and the caregiver (mother) and "triadic interaction" where the child and the caregiver together direct the attention to an object (Tsukada, 2001).

### **1) Subjective Experience of Social Life Inferred from Action**

In examining the pre-verbal human interaction of children with profound and multiple disabilities, Tokunaga (2000) points out the "necessity to conduct researches that focus on specific behaviour of children and observe the changes in such behaviour, instead of researches that merely describe the case." Moreover he points out that the basics of clinical therapies would be "to construct the image of children with multiple disabilities by understanding the gap between observed children and clinical children." This paper has discussed changes and characteristics of a child's behaviour by focusing on such things as spontaneous movement, response to action by others, and gazes. On this basis, it inferred the subject's subjective experience of social life, and examined future learning issues for this case.

The "subjective experience of social life" as observed in this case study was similar to Tokunaga (2000)'s "image of children with multiple disabilities." Inferring such an experience is generally considered the foundation for the administration of clinical therapy. It is considered important to infer not just from the child's individual behaviour such as body movements, the direction of his gaze and changes in facial expressions but to infer his ability to respond to the external world which underlies such behaviour.

Stern (1985) considers this subjective experience of social life an important clue in understanding the development of infants, and Naruse (1995) considers it a clinically important concept as well: "among the things that people actually feel as they live, or among the phenomena that are occurring in their minds, 'experience' comprises what they can realize and feel."

Concerning subjective experience of social life, the progress of the researches on the development of infants has increased the number of studies conducted on what infants up to the age of one are thinking and experiencing in which has provided detailed information on such an experience (Stern, 1985; Watanabe, 1994; Bruner, 1995; Hosobuchi, 1996; Ohgami, 1998; Tokunaga, 2001). Based on their findings, it will be important to improve the approaches to children with profound and multiple disabilities.

The clinical intervention model for practice based on a type hypothesis based on this subjective experience of social life is believed to be of use when caregivers try to establish interaction with children who have profound and multiple disabilities. In particular, if such children also suffer from visual or hearing impairments or physical disabilities, their behaviour is extremely limited. Therefore, needed will be a model for inferring their psychological development from their less-limited behaviour.

### **2) Future Issues**

It will be necessary to examine through further case study whether the stages of subjective experience of social life inferred in this training are truly applicable to such experience undergone by children with profound and multiple disabilities in general in their initial developmental stages. In this case, it will be necessary to establish criteria for assessing children's reaction to caregiving. It will also be necessary to clarify the structure and examine the appropriateness of the type hypothesis (Shimoyama, 1997) based on subjective experience of social life.

\* This paper was rewritten based on following research; Tokunaga Yutaka(2002) : An approach to Establish the Interactions between Caregiver and Child with Profound and Multiple Disabilities -Based on Japanese Psychological Rehabilitation (Dohsa-Hou)-. The Japanese Journal of Rehabilitation Psychology, Vol. 30, 75-84.

\* The girl A in the case study is presently engaged activities in community work place. There have been no major behavioural changes such as in terms of interaction with people and objects.

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