

CHAPTER II

TONI

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What can we learn from one baby?

When David Freedman and I set out to visit Toni we brought with us a number of hypotheses. We had hypotheses regarding blindness as an impediment to the establishment of human attachments. We had a hypothesis regarding the adaptive substitution of sound for vision. And there were others which are fortunately obliterated by time. In the next 18 months Toni threw out each of our hypotheses one by one, like so many boring toys over the rail of a crib.

We were quite fortunate in our first baby, since she had been selected with no other criteria than her blindness and her age. Toni was a healthy, robust little girl, the youngest of six children. Her mother was an experienced mother. In spite of her feelings of guilt and fears for the future of her blind child, she was a woman whose motherliness responded to need, and this baby who needed her in special ways evoked deep tenderness in her.

Toni tossed out one of our hypotheses on the very first visit. She was five months old, making pleasant noises in her crib as we talked with her mother. When her mother went over to her and called her name, Toni's face broke into a gorgeous smile, and she made agreeable

responsive noises. I called her name and waited. There was no smile. Dr. Freedman called her name. There was no smile. Mother called her name and once again there appeared the joyful smile and cooing sounds. Her mother said, a little apologetically, "she won't smile for anyone. Not even her sisters and brothers. Only me. She's been smiling when I talk to her since three months."

Now in 1961 it was written in all our books (including my own) that it is the visual stimulus of the human face that elicits smiling in the baby at three months. Toni's smile had just shattered a theory, which shows you what one baby can do. Seven years later I could have given you a long list of blind babies who smiled in response to mother's or father's voice. But that doesn't really matter. If only one blind baby smiles in response to a mother's voice there is something wrong with our theory.

In our notes of this session we recorded a number of observations showing the selective response of Toni to her mother, paralleling in all significant ways that of a sighted child at five months. Three months later, at eight months, Toni demonstrated another achievement in the scale of human attachments. Soon after she heard our voices, strange

voices, she became sober, almost frozen in her posture. Later, when I held Toni briefly to test her reactions to a stranger, she began to cry, squirmed in my arms, and strained away from my body. It was a classic demonstration of "stranger anxiety." But--in 1961--we all knew that stranger anxiety appears at eight months on the basis of the visual discrimination of mother's face and stranger's face.

Very well. We conceded that under favorable conditions blindness need not be an impediment to the establishment of human attachments. But we still had a lot of other hypotheses tucked away.

One of these had to do with the adaptive substitution of sound for vision. We all know that around five months of age the sighted child can reach and attain an object on sight. In the case of the blind child we expected that a coordination of sound and grasping would take place at approximately the same time. But at five months of age, at six months, and--astonishingly--even at nine months, Toni made no gesture of reach toward any of the sound objects we presented to her. We sneaked around with jangling keys, rattles, squeaky

toys, always in a range where Toni could easily reach them. She looked alert and attentive, but she made no gesture of reach. It did not matter whether we used her own familiar toys or Dr. Freedman's car keys; there was not a gesture of reach. Was the baby deaf? Certainly not. As soon as she heard the sound of the camera motor, for example, she would startle or wince. She could discriminate voices. She could imitate sounds at seven months. What was it then?

At ten months Toni demonstrated for the first time her ability to reach and attain an object on sound cue alone! (Thereafter she became expert in grabbing objects sounded within arm's range) As we drove back from Toni's house that day we were stunned by the implications of this observation. Toni had given her first demonstration of a direct reach for a sound object at ten months. (The sighted baby coordinates vision and grasping at five months.) But how did Toni solve the problem? We knew perfectly well that no developmental achievement appears overnight. A coordinated action of hand and external stimulus is the result of complex sensorimotor learning. There were antecedents which must have been present for months, unrecognized by us.

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Now we were obsessed by the problem and its implications. Since memory could not serve us, we went back over hundreds of feet of film, frame by frame, to try to reconstruct the sequence. But the story was not there. And we knew why. Film and film processing are expensive. Since we were financing this research out of pocket we had to be thrifty in our use of film. We had devoted only a small amount of footage to each of the areas we were sampling, and we had thought that our sampling was adequate. In order to pick up our lapse we would have needed generous and unprejudiced samples. The story of Toni's coordinated reach-on-sound cue was lost to us, and we already knew that this story would prove to be a vital clue in the study of the blind baby's development.

To return now to Toni and to go back a bit in the story: At eight months Toni had excellent control of her trunk and was indisputably moving toward an upright posture. She could support her weight on hands and knees, she could elevate herself to a standing position and let herself down easily. There was no question, knowing babies, that Toni was getting ready to creep.

As we were leaving Toni's house at the end of the eight month visit, I said to the mother, "I'll bet when we come back next month Toni will really be into everything!" These were foolish words and I came to regret them.

At nine months Toni was not creeping. Nor at ten months or twelve months. This is what we saw: Toni, with demonstrated postural readiness for creeping, was unable to propel herself forward. On the floor in prone position she executed a kind of radial crawl, navigating in a circle.

Why couldn't Toni propel herself forward? Clearly there needed to be an external stimulus for the initiation of the creeping pattern. What happens in the case of the sighted child? The sighted child at nine months, let us say, is supporting himself ably on hands and knees. He sees an out-of-range object. He reaches for the object. And what we see now is a reach and a collapse, a reach and a collapse, each time moving forward until the object is attained. Within a few days the motor pattern begins to smooth out and becomes a coordinated action of hands and legs in what we call "creeping."

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Why didn't Toni creep? Clearly because no external stimulus was present to initiate the creeping pattern. But why shouldn't a sound object provide the lure? --- We were back to the same problem.

Even years later, I can still remember the stunning impact of that discovery. Toni had brought a brand new insight into the understanding of locomotor development in sighted children. We--all of us--had never had occasion to question the assumption that locomotion in infancy follows maturational patterns that are laid down in a biological sequence. Toni demonstrated that motor maturation follows its biological pattern, but in the absence of an external stimulus for reaching, the creeping pattern will not emerge. We reminded ourselves that in the retrospective histories of all blind children it is common to find that creeping was never achieved, and, in fact, there is a marked delay in the achievement of all locomotor skills from this point on, with independent walking a very late achievement in the second or third years.

Between eight and ten months we began to see something in Toni that roused our own anxieties. At times during the observational session we would see Toni

stretch out on the floor, prone on the rug, and for long periods of time lie quite still, smiling softly to herself. The passive pleasure in immobility was chilling to watch. Her mother, watching this with us, looked strained and anxious. "She does that all the time", she told us. She was an experienced mother, you remember, and she knew as well as we did that no healthy baby at nine months will lie on the floor for long periods of time, smiling softly to herself. And when did Toni assume this posture? At any time, we observed, when external sources of stimulation were not available to her, i.e., if no one was talking to her, playing with her, or feeding her. In such moments of non-stimulation she would fall back on this form of self-stimulation in which the ventral surface of the body was in contact with the rug.

Did this mean that the mother was neglecting her? We thought not. During the same period, pleasure in mother's voice and pleasure in being held by mother were clearly seen whenever mother resumed contact with her. But in a normal busy household, where five other children must make their claims upon a mother, there were, inevitably, periods when Toni was not being played

with, talked to, held in mother's arms. It happens to sighted children too. What does a sighted child do at nine months when he is "by himself"? He occupies himself with toys, or if he is creeping, he goes on excursions to visit the underside of the dining room table or the top side of the living room couch, or the inside of the kitchen cupboard. And if he has no toy handy, and if he can't creep, he will occupy himself by looking--just plain looking around. Visual experience creates its own appetite for repetition; the hunger to see and the functional pleasure of vision are among the great entertainments of a baby after the first days of life. Vision keeps the baby "in touch" with his mother and with the world of things, giving continuity to experience. The sighted child at nine months does not have to be continually held by his mother or talked to by his mother in order to "be in touch" with her.

But when Toni could not touch her mother or hear her mother's voice she was robbed of her mother and of a large measure of the sensory experience that linked her to the world outside of her body. In this

insubstantial, impermanent world, her own body and body sensations became at times the only certainty, the only continuous source of sensory experience in the otherwise discontinuous experience of darkness. And because proprioceptive experience provides the chief means for "keeping in touch" in the near void of blindness and the only means for experiencing continuity of self feelings, Toni stretched out on the floor, face down upon the rug. In this posture, which afforded maximal contact between the body surface and the rug, she might obtain feelings of comfort, safety, pleasurable tactile sensations, and a sense of body awareness. We are reminded too that the ventral surface of the baby's body is normally stimulated in the posture of being held against the mother's body and that pleasure, intimacy, comfort, and safety are united for a lifetime of love in this posture--the embrace.

What we saw in Toni, face down, nuzzling a rug, was a form of stimulus hunger. Where vision would have insured abundant sources of stimuli and the visual alternatives to contact hunger for the mother, blindness caused this child in periods of external non-stimulation to fall back upon the poverty of body sensations. Like

a starving organism that will finally ingest anything where there is not enough food, the stimulus hunger of this child led her to ingest the meager proprioceptive experience of body contact with a rug.

Later, in the University of Michigan study, I was to see variations of this posture in blind children. But when we first saw this in Toni we found it a chilling experience. We had not foreseen such a development in an otherwise healthy child. And remember, too, that during this period, at nine months, we were also sobered by the fact that Toni was unable to locomote in spite of the fact that she had maturational readiness for creeping. In other respects, too, Toni seemed to have reached a developmental impasse. Although she was still lively and responsive to her mother and her sisters and brother, there was almost no interest in toys, and at nine months she was not reaching for objects. Her mother, we observed, seemed anxious and discouraged. For the first time we saw a number of instances in which mother was manifestly out of rapport with her baby.

When we returned at ten months, the entire picture had changed. Toni's mother, entirely on her own, had

purchased a walker, and within a short time Toni had become expert in getting around in it.* She was still unable to creep, but the walker provided mobility, and Toni was cruising around the house with tremendous energy and making discoveries and rediscoveries at every port. "Did she still want to lie down on the rug?" we asked, concealing our own anxiety. Oh, no, the mother assured us. In fact, she absolutely refused to get into the prone position. Mother took Toni out of her walker and gave us a demonstration. The moment Toni was placed on the floor in the prone position, she yelled in protest and uprighted herself. This was now the posture of immobility--and Toni had found mobility. The moment she was put back in her walker she stopped crying and took off like a hot-rod.

We never saw this passive prone posture again in Toni. Within three months, at thirteen months of age, Toni began walking with support--and now also creeping (!). Toni was "into everything", exploring the cupboards and the drawers and getting into mischief. At thirteen months Toni had a small and useful vocabulary, she was using her hands for fine discriminations, and she was

*This is not, however, our recommendation for facilitating mobility in blind infants. There are better ways described in Chapter IX.

now expert in reaching and attaining objects on sound cue. From this point on, Toni's development progressed without any major impediments. (Only one pathological behavior appeared in the second year, and I will describe this later.)

But now what about the stereotyped prone behavior which had so alarmed us at eight and nine months? It is clear from the sequence that once Toni acquired mobility she could not even be persuaded to get back into the prone position on the floor. Mobility provided functional motor pleasure, of course, but mobility also put her in touch with a world beyond her body and a world that she could act upon; mobility gave her for the first time a sense of autonomy.

Here, we thought, we had found another clue to the ego deviations encountered among blind children. If we understand that the blind child lives in a near-void for much of his waking day, he can make few discoveries about the world around him until he becomes mobile. And if mobility itself is delayed until well into the second year, he will live for a perilously long time in this near-void in which the presence of the mother or other persons, or ministrations to his

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own body become the only experiences which give meaning to existence. In these periods when neither sound nor touch, feeding, bath, or play occur there is nothing except his own body. Now we began to understand how some blind babies may never find the adaptive routes and remain frozen in the state of body centeredness, passivity, immobility and ultimately, non-differentiation.

I mentioned that one pathological trait was observed in Toni beginning in the second year. Let me briefly describe it. When Toni became anxious, when she was separated even briefly from her mother or when a strange person or a strange situation signaled danger to her, she would fall into a stuporous sleep. We observed this ourselves. It was as if a light were switched off. As far as we can reconstruct the onset of this symptom, it was first manifest in connection with a brief separation from her mother. She retained this symptom as late as the fourth year when we obtained reports on her. In all other respects she was a healthy, active little girl, able to ride a trike, play ball, join in children's games. Her speech was good; eating and sleeping were entirely satisfactory.

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There was only this. We asked ourselves when we would find an otherwise healthy sighted child who defended against danger by falling into a pathological sleep. Never, of course. But then, one should ask, what defenses against danger does a blind child possess?