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LIFE BEGINS ON AN ANT FARM FOR TWO PATIENTS WITH ASPERGER'S SYNDROME

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Asperger's syndrome, a pervasive developmental disorder first diagnosed in childhood, is characterized by severe impairment in social interactions, communication, and stereotypic behavior. In this paper, the authors expand a prevailing emphasis on behavioral-educational treatments, by presenting an approach that focuses on psychodynamic factors, nonverbal communication, and animal assisted psychotherapy. The authors describe interactions between patients and therapists on a procedural, verbal and nonverbal level that further the therapeutic process with increasing affect. The treatments of an adult and a child both presenting Asperger's syndrome illustrate the bridging from their nonhuman world to the world of feelings and people.

Keywords: Asperger's syndrome, animal assisted psychotherapy, nonverbal communication, affect regulation, mother-child treatment

Asperger's Disorder, a pervasive developmental disorder first diagnosed in childhood, is characterized by "severe and pervasive impairment in several areas of development: reciprocal social interactions skills, communication skills, or the presence of stereotype behavior, interests, and activities" (*DSM–IV–TR*, 2000, p. 69). Children with Asperger's Syndrome develop language ability and usually are not mentally retarded. According to Remschmidt and Kamp-Becker (2006), about 20% of these children are misdiagnosed as attention deficit hyperactivity disorder (ADHD). Like ADHD children, they are easily overwhelmed and unable to self-regulate affect and arousal, but unlike these children, they doggedly adhere to a limited number of interests. Intuitively they do not sense the social rules of conversation, but have to learn them painstakingly. Furthermore, their responses tend to be highly idiosyncratic as they do not understand nonverbal cues, but take the spoken word literally. Clearly, this produces difficulties in their social interactions.

Like other patients in the Autism Spectrum Disorder, Asperger's Syndrome is characterized by gaze aversion. Furthermore, Asperger's patients do not use the human face as a source

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of important clues in social relationships. According to Gallese (2006) their limited interest in the environment grows out of their "imitation deficits" and their inability to share "attention with others (and react) in a congruent fashion to others' emotions" (p. 292). Grandin (2005), speaking for Asperger's patients, states that problems arise because "we see the details that make up the world, while normal people blur all these details together into a general concept of the world" (p. 30). In addition, Cozolino (2006) describes: "For those with autism, human behavior is the stuff of nightmares" (p. 283).

Asperger's patients are often viewed as bizarre in their behavior and communication. They become the butt of jokes or are simply avoided. Parents feel frustrated, disconnected from their Asperger's child and find themselves at a loss as to how to communicate with, educate, and socialize their child. In turn, the child feels poorly understood and increasingly alienated. A cycle follows in which parent and child withdraw from each other with feelings of failure.

In 1952 Hans Asperger, an Austrian psychiatrist and pediatrician (1906–1980), published his book "Heilpädagogik" (orthopedagogy or therapeutic pedagogy) and proposed a treatment approach for a group of patients who presented special intellectual and sensory deficits. He detailed the symptomatology of these patients who have subsequently been diagnosed as suffering from Asperger's disorder.

There is little disagreement in the literature with respect to the description of Asperger's Syndrome (Jacobson, 2003; Remschmidt & Kamp-Becker, 2006). The syndrome today is mainly understood as a neurological disease, probably as a special failure in the neural network. Accordingly, many treatment approaches favor structured interventions that focus on behavior. The lack of social–cognitive functioning is addressed by teaching those skills through various cognitive–behavioral therapy strategies. The manualized approaches require the therapist to sustain a constant "active pursuit of contact as a crucial function of the therapy" (Youell, 1999, p.188) and to engage the attention and interest of children directly (Alvarez, 1999). This approach is said to be of specific value in ". . . working with those whose theory of mind is based on logical knowledge, not based on identification with affective experiences" (Jacobson, 2003, p.87).

Shapiro (2000) cautions and draws attention to an intrinsic, genetic basis to Asperger's disorder. However, he also holds that the inner organization of these children must be understood "from the standpoint of their cognitive emotional deviance and deficit if we are to have any chance at all to help them" (p. 651).

Greenspan (2006) in his "developmentally, individual-difference, relationship-based approach" (p. 40) for children with autistic spectrum disorder focused on several stages of the therapy, which are associated with early signs of autistic problems. He emphasized the importance of "pulling the child into a greater degree of pleasure in relating" (Greenspan, 2000, p. 684). Instead of drilling them "to memorize certain sequences (thus) modifying surface behaviors and symptoms, such as aggression or noncompliance" (Greenspan, 2006, p. 36), he stressed that social behavior is learned through "relationships, that involve emotionally meaningful exchanges" (p. 37).

We propose a treatment approach of Asperger's syndrome that is informed by self psychology (Kohut, 1977), empirical infant research (Beebe, 2000, 2003; Beebe & Jaffe, 2000; Lachmann, 2000; Papousek & Papousek, 1987), and animal assisted psychodynamic psychotherapy (Levinson, 1997; Topel, 2006, 2007). Specifically, the emphasis on selfobject experiences and the understanding of the reciprocal, bidirectional system that organizes the experiences of mothers and infants served as a basis for the ongoing therapist-patient interaction. In Animal-assisted therapy (AAT) an animal with specific characteristics is chosen to become a fundamental part of a person's treatment. The

presence of the animal, for example a horse, a dog, or a cat can improve social and emotional functioning of the patient and provide some motivation for the patient to participate in the treatment. As Levinson stated: "Frequently, a pet is the only remaining link with reality." (p. 27), providing a selfobject experience (Alper, 1993). Thus, the animal provides a sense of connectedness, a vital bond.

The limitations in functioning and behavior of these children do not mean an absence of needs, psychodynamics or emotional development. On the contrary, the special way in which Asperger's patients experience the world as unresponsive necessitates attention to the consequences of recurring mutual affective mismatches in their relationships.

Even if the roots of Asperger's syndrome can be found in the neurobiological development of the child, it does not follow that their handicap should define their treatment. Even if their limitations in the social emotional sphere are self-evident, their treatment should be directed toward the whole child and not only focus on their deficits. Affective resources of both therapist and patient are engaged in their cocreation of the treatment process. We demonstrate our approach in two cases, the case of Carl, a young boy, and the case of Sam, an adult Asperger's patient.

The Case of Carl

Carl was 8 years old at the time his mother called me (E-M.T.) She was upset about the extent to which her son was bullied in school even though she had been encouraging him to defend himself. His classmates took his belongings, for example school supplies and pencils, hit him in the face and called him names. He just stood there and "did nothing." They imitated his facial expressions by grimacing. Carl remained silent, unconcerned and seemingly withdrawn. For some time he had been avoiding the other children during school recess. He had no playmates.

Several times a day as Carl sat silently in the living room of his home and would suddenly burst out screaming. Carl's mother had no idea what prompted these screams. She said: "I can't stop him! There is nothing I can do. Sometimes I send him to his room and he may not come out until he can be quiet." Sometimes Carl would cover his face with his hands and leave the room even though relatives and friends of the family were visiting. His mother continued: "I feel so sorry for him. He does not seem to enjoy his life. He never looks happy." With great pain she recalled the time when Carl was a baby. He refused to hug her or be cuddled by her.

In the course of the initial meetings I learned that Carl had a brother, Ted. He was born when Carl turned three. When Ted grew older, the mother compared the development of her two sons. She now became aware that Carl did not laugh like Ted, and, unlike Ted, preferred to stay at home for long periods of time. Ted began to play with a group of friends as soon as he could get out of the house. Carl stayed home alone and played computer games. Later in the treatment she confided to me that from infancy on she felt "something" was not right with Carl. Whatever it was she could not explain to herself and others. So, she stopped trying.

At the time of the consultation Carl had barely been able to function in school. In fact, for the prior 3 weeks he had refused to attend classes. When in class Carl's attention wandered. His teacher noted that when he pointed at the blackboard to focus the class's attention, Carl appeared to be "absent" or daydreaming. Finally, the teacher recommended that Carl attend a local school for multi-disabled children.

Carl's mother was alarmed by this recommendation. In addition, she felt immense

pressure from her extended family with respect to Carl. They criticized how she raised Carl and considered him to be simply an undisciplined, pampered child. She felt ashamed in that they thought of her as a failed mother.

I saw Carl and his mother for three preliminary consultations before beginning treatment. Carl arrived with his mother for the first consultation. Swinging his arms, his legs remaining stiff and straight, Carl neither looked at me nor greeted me. In fact, I wasn't sure if he even noticed me at all. His mother, looked embarrassed and forced him to shake hands with me, as is the social custom in Germany. Carl obviously was reluctant to shake my hand and I said, trying to reassure both: "That's o.k."

Carl sat down, looked at the ceiling and rotated his body back and forth while swinging his arms. In greeting Carl, I adopted the intuitive ritual described by Papousek and Papousek (1987), when making contact with infants. That is, I moved my head back and forth slowly and said in a singsong voice: "Hellooo . . ." (see also Beebe & Jaffe, 2000). Carl sat still. Unfortunately, his mother immediately forced him to respond by sticking her index finger into his ribs. Carl winced with a curt: "Hi." I now heard his voice for the first time. It sounded like a computer generated voice, metallic, unmodulated, and without timbre. Although we sat face-to-face, he did not look at me. With a blank expression he stared into the distance. His lips were slightly parted and he looked as though he was anticipating something. Nevertheless, there was no hint in his face as to what that might be.

I again signaled to Carl's mother that his behavior was o.k. with me. After waiting a few moments I indicated to Carl that he might find something of interest in the room. He looked unsure about how to proceed. I suggested that he pick out a board game with which he and his mother were familiar.

Carl's mother promptly stood up to pick out a game for him. Over time, I realized the extent to which she was in the habit of doing things for him. She provided him with what ever she thought he needed and took the initiative in activities with him. Carl remained passive and withdrawn and seemed to accept this pattern.

In the course of the next sessions I administered several tests to Carl. On the draw-a-person test (MZT, Ziler, 2000) his score was consistent with that of an 8-year-old boy of average intelligence.

The Emotional Availability Test (Biringen, Robinson, & Emde, 2000) proved to be too difficult for Carl and his mother. In the cognitive section, where parent and child jointly construct a picture out of geometrical shapes, Carl's mother was unable to help him. In the section tapping emotional engagement, in which parent and child play with puppets or cars, both seemed uncomfortable. Carl also had difficulties in the story completion test (GEV by Gloger-Tippelt & König, 2002) tapping various aspects of attachment. The test consists of story stems for which the child is required to provide a conclusion. Carl completed each story stem by depicting a boy who felt "fine" despite scary and injurious experiences.

Carl was reluctant to remain alone with me in the sessions without his mother. Therefore, I arranged to see both of them together. I indicated to the mother that her presence might be helpful in Carl's treatment. Privately I hoped that her presence might give her a clearer picture of Carl's special needs and difficulties.

Carl's father never participated directly in the treatment. However, once he did telephone me to ask about Carl's diagnosis. I told him I thought that Carl had serious communication difficulties and that I would be ready to speak with him in person. He never took me up on that offer.

From the preliminary sessions I discovered that Carl enjoyed playing *Memory*. I seized

this opportunity to take advantage of the turn taking rules that are built into the game. Furthermore, I encouraged Carl and his mother to make eye contact with each other and with me as part of the game. I suggested a rule, that when a player completed a turn eye contact had to be made with the next player as a signal to them to begin their turn. Carl understood and complied. He seemed to understand the importance of looking at the face of the other. He had no difficulty in following this routine and even reminded his mother whenever she forgot. He began to take notice of his mother's facial reactions, for example her attention to him or her detachment. He drew her attention with a sharp and effective "You!" whenever he noticed her straying away. In addition, he obviously enjoyed his newly won efficacy.

In line with my previously reported research (Topel, 2004; Topel & Lachmann, 2007), I monitored Carl's and my body positions and paid close attention to his responses even to my slight movements toward or away from him. It seemed to me that Carl reacted to my approaches as though they were intrusion. In a similar fashion Carl dodged as his mother chased him (Beebe & Lachmann, 2002).

In the course of playing *Memory* I became aware of Carl's irritability and sensitivity to loud sounds. I also became aware of his mother's loud, screeching excited voice. I wondered how he heard her voice. One of the playing cards in *Memory* depicts a kitten. Turning that card over to reveal the kitten evoked exited, shrill screeches from Carl's mother. After a while Carl and I learned to anticipate these screeches and we would laugh. Carl's ability to anticipate was an important advance in the treatment. It added a new and necessary dimension to his experience. I tried to increase Carl's mother's vocal repertoire by encouraging her to try out various alternative ways of expressing pleasure and delight. She found this very difficult. I explained to her that Carl's sensitivity to loud sounds might make him shy away from her and others. Evidently, loud sounds were experienced by Carl as undifferentiated noise. The task of discriminating these sounds seemed beyond his ability at the moment.

Carl's interests moved from the *Memory* game to *Sorry*, a game in which he used every opportunity to throw the other players off the board. Next came *Barricade*, a game that depends on each player's ability to anticipate the strategy of the other players. At first Carl was unable to do this. After some time he grasped that to win the game required developing an effective strategy that anticipated how the other players might move. Carl grasped that the outcome of the game depended on his ability to plan. I validated his increasing ability by describing and labeling his newly won skills so that he might begin to experience a sense of competence in contrast to his prior continual experience of having his intellectual and social difficulties mirrored by his teachers and family members. He was delighted and increased his efforts in anticipating the intentions of the other players. His increased self-confidence enabled him to think and play more slowly and deliberately. After the 10th therapy session, Carl was able to return to school and was better able to keep up with the school demands.

Carl's mother did not seem to be aware of his cognitive strides nor did she recognize his increasing sense of confidence. In the games we played she continued to suggest moves to him. She did not grasp that he was coming up with his own solutions. Her suggestions fell on deaf ears and she felt hurt when Carl ignored her input. More important, Carl really needed silence as he reflected on his strategy. I suggested to his mother that she not rush to help him. I understood that she felt compelled to come to his aid, but that she should wait, so that Carl could figure things out on his own. I had hoped that she would eventually enjoy his developing abilities. Carl heard what I said to his

mother and recognized that I was providing him with time, space, and an opportunity to think and to reflect. The game now became more fun for him and all of us.

During one game, after carefully considering his next move, Carl grinned as he eliminated his mother from the game board. This proved to be very difficult for her. Carl enjoyed that moment while she did not, prompting her to look at me. I explained to her that Carl experienced different emotions from her. She sighed but seemed to be ready to recognize that Carl's first visible facial emotion was about his pleasure, apart from her. A more detailed discussion about the effect of the treatment on Carl's mother is beyond the scope of this paper.

Carl now played more assertively and experimented with his newly found understanding of how to win. His moves demonstrated his strategy but he could now also express it verbally. No longer silent, he began to give voice to his inner monologue. However, he still did not address his mother or me directly.

When Carl appeared for his next session I noticed a cut on his ear. I asked him, what happened. He had no idea about what I was asking of him. His mother told me, he had just had a haircut and the barber cut his ear. Carl did not complain. She had stopped reacting to such events since Carl so often did not respond to physical injuries. Carl obviously had neither noticed nor felt any injury. On the contrary, he was astonished that I made such a fuss about a nonevent in his life. It now became clearer to me, that Carl's failure to experience pain was part of his Asperger's syndrome. Similarly, Carl endured the attacks and torment of his classmates without ever complaining. Not reacting to pain had become an established procedure. His consistent nonresponse made him the butt of jokes in his class. Carl's family was also puzzled by his nonreactions to pain and torment. They saw it as a sign of weakness adding to Carl's general alienation.

After the 25th session I was required to reapply for insurance coverage for further treatment. I informed Carl's mother of this requirement. She indicated she wanted to continue the treatment even though he was back in school. His screaming, facial ticks and stereotypic arm movements had diminished considerably. Occasionally he would even laugh. However, his mother informed me that Carl did not care about, or enjoy the company of other people. He felt that doing well in school and enjoying the friendship of his cousin was sufficient progress for him. He said he enjoyed his life and did not want to be a center of attention. Carl, now 9 years old, wanted to stop therapy. At that time I spoke with Frank about the difficulty I had engaging Carl in continuing his treatment. It was then that Frank told me about his treatment of Sam.

The Case of Sam

Sam consulted me (F.M.L.) when he was 42 years old because, he thought, that he did not have emotions. He noted the difference between his own reactions and those of others, including his wife. Furthermore, he was distressed by things going on at the periphery of his vision. He elaborated that he works in a cubicle in an office and could not concentrate when people walk by, or if he heard them conversing. He reported similar difficulties in concentration and attention at the movies and while reading on the subway. He felt anxious when getting a haircut.

Later, in the course of his treatment Sam described having an overly acute sense of color. At times, certain colors appeared extremely sharp and vivid, especially greens and blues. He labeled this as his problem with "sensory overload." However, he considered himself to be generally in a cheerful mood and that things don't get him down. However,

he added, one more problem that prompted him to seek therapy. He does not like to be touched.

Sam told me that as a young child he was taken to a psychologist who diagnosed him as autistic. He later researched this diagnosis and did not think it was accurate. From what he told me, I said to him, that I did not think so either.

As a writer of technical manuals to accompany computer programs, Sam was very much in demand in his field. At one time he free-lanced, but now he was employed. That was really where he became most aware of his specific social difficulties. Although he got along well with his co-workers and would have a drink with them after work, his relationships were limited to "superficial" contacts. At work he kept away from them because he was so easily distracted. He liked anonymity and finally succeeded in getting a private office with walls and a door. That improved his comfort level at work.

Sam's parents divorced when he was 3 years old. Until that time they fought frequently and noisily. Sam recalled his "frozen stance" during their fights. I told him that his frozen state probably served to diminish and hold in check other feelings, such as terror. We also considered that the shouting was upsetting to him not only because if its meaning, but also because of its volume. Diagnostically, I was not certain whether Sam's symptoms were the result of these early family experiences or if they reflected a sensory hypersensitivity associated with Asperger's Syndrome. His response to my conjecture, and much of what I said in this early part of the treatment, was "interesting." He certainly did not appear upset or distressed by this diagnosis. I was careful to speak slowly and in a modulated tone so as not to cause him undue distress.

Other than the fights between his parents, Sam's early experiences may well have been positive ones. Although his high intelligence was recognized in high school and by his parents, Sam did not go to college. He thought that he would not be able to handle it, socially. Instead, he read voraciously on his own.

I also told Sam that his frozen state could indicate that he did feel "something," "something" that required an inhibition of feelings, a freezing of emotions. Perhaps there is "something" there that we can reawaken. I also told him that therapeutically, whatever the basis for his "not having emotions," even if it is Asperger's syndrome, our work would be the same.

Sam maintained good relationships with both of his parents. He corresponded with his father, a psychiatrist who had remarried and moved to Europe. His relationship with his mother was somewhat more complicated. She was a member of a religious sect. In his early teen years she brought Sam to meetings of this group and he helped to proselytize their brand of Christianity. In his mid-20s he married "the prettiest woman" in this group. She is a physician who does not practice medicine but devotes her time to proselytizing as well as holding a job in the health care field. In his late 20s Sam became "fed up with the nonsense that they were spouting" and left the sect. This caused conflicts with both his mother and his wife.

Sam reminded me of the 6-year-old son of a former patient of mine who had brought his son to a session. The boy who had been diagnosed with Asperger's syndrome was being treated psychoanalytically. In the session with his father and me, the boy spent much of the time turning a fan on and off. He, like Sam was fascinated by the technical world and both could become so absorbed in it that they lost track of time. He, like Sam, had little interest in the world of people. However, in contrast to the 6-year-old boy, Sam had learned and retained some interest and skills in connecting with people. Perhaps his cheerful, friendly nonthreatening manner had been acquired during his membership in the religious sect. Furthermore, Sam had an acute sense of and acceptance of his own deficits.

I told Sam I would help him find more emotion in his life. We talked about his marriage. He enjoyed sex with his wife. He liked her but he did not love her. They were just good friends. He "knew" something was missing. I inquired about his sense of "something missing." He responded by telling me about a friend with whom he had tried to start a business. He had signed a bank note to borrow money for both of them. When the business did not take off, he repaid his share of the note but his friend did not. In addition, the friend no longer returned his phone calls. He could cognitively understand that he might be angry about that but he did not feel it. That's what he meant by "something is missing."

I encouraged Sam to bring in dreams as best he could. My idea was that if there is some repository of feelings in Sam, they might be more accessible through this "royal road." He tried to comply. After about a year of one-session-per-week therapy when we had been searching through his day to see where he might have felt something, he described some vague, static dream-like images devoid of people. In one dream he recalled a water scene and a week later he brought in a dream of a tray of bread being pulled out of an oven in a zick-zack fashion. He described watching the zick-zack fashion with fascination. I said to him: "Last week it was water, this week it's bread." I did not make explicit the implicit reference to basic nurturance required for survival. I sensed there was something brewing and I did not want to interfere by saying too much.

Then for the first time Sam brought in a dream with something alive. "It was a dream about an ant farm. The ants were under a glass dome. It dawned on me to provide water for each of the ants. But they were living in dirt and doing just fine."

I was struck by the living things he had depicted. I acknowledged his depiction of communal life and felt very encouraged by this shift in imagery from the inanimate world to the animate world. In addition, an ant colony is an extraordinarily busy, lively place. My commenting on the living things he had depicted for the first time also conveyed to Sam that he now had the rudimentary resources for an emotional life with people.

A few weeks later, Sam brought a dream that concerned a baseball game and led to some new material. Sam was a member of a virtual group that organizes imaginary baseball teams that are made up of players from various existing teams. Each week, on the Internet they get together to compare scores based on the players they had chosen for their team, and their team's performance. Sam spends a considerable amount of time in adding, trading, and deciding who plays on his team each week. This was Sam's main social connection. Occasionally, the various "team managers" would get together but actually that was quite rare. The dream about the baseball game was part of a progression, as we could see in retrospect. It led from the ant farm to increasing engagement, on his terms, at his level of comfort, into the human world.

In a subsequent dream, Sam was on a bus in New York. "It was a sunny day. I am in a single seat. Another person gets on the bus. Then a handicapped person gets on the bus. He looked intelligent, with a good sense of humor and for life, in spite of his handicap."

Sam's comment about the handicapped person was, "he had a pragmatic approach to his physical handicap." Sam woke up feeling that he carried a tremendous load. "I don't know why," he questioned. We understood the dream as reflecting his current state. With increasing awareness, he depicted his "handicap." He felt it to be both a burden and a source of pride, because he maintained such a "pragmatic" approach about it.

The sequence of Sam's increasing aliveness was furthered in his next dream, "I was walking down this street and there was a middle-aged woman who wanted to cross the street with a bear. My reaction was "how cute and very dangerous." During this time, Sam and I had been inferring that he experienced a variety of feelings in his daily life. There

were moments when he felt hurt, ratified, outraged, scared and compassionate. The cute and dangerous bear referred to the novelty of these feelings and his unfamiliarity with them. The middle aged woman referred to his new relationship with his mother in which he was called upon to help her out of some very difficult circumstances.

In his final dream, Sam was at home and having his clothes altered. The tailor completely removed the back of his pants." Sam said, "He left me exposed." I thought of this as a transference dream. Sam had become increasingly aware of his feelings and the role that the therapy played in drawing his attention to his emotions. Hence, he had become acutely aware of his vulnerability. Sam did not agree. He thought that the dream related it to his leaving the religious order. "I feared that there would be some kind of attack. It was a big event when I left. I was cut off from all my friends." I inquired about how he felt in the dream and he acknowledged some "anxiety with muted affect."

This was the final dream Sam brought to therapy. It previewed ending the treatment, which occurred about 2 months later. After 2 years of therapy, Sam felt pleased with the progress he had made. For some time now he no longer felt so distracted at work, had several enjoyable experiences at the movies, and was successfully handling a very difficult situation for his mother. To deal with his former partner and friend's failure to repay the debt, he hired a lawyer. His marriage continued to be cordial. His wife had begun to question her membership in the religious sect. To Sam this was a hopeful sign and he was careful not to interfere with her process of questioning because that might just backfire. However, most important, he *felt* about all these events. In our last session we looked back on his therapy and the "ant farm" dream that, we both thought, was turning point in his developing emotional life. I assured him that leaving therapy did not entail the same consequences as leaving the sect. He could always come back if he wanted to.

Second Phase of Carl's Therapy

Frank and I (E.-M.T.) talked about his work with Sam. Based on Sam's ant dream I thought that Carl might profit from animal assisted psychotherapy. I decided to buy an Antquarium. Ants are extraordinarily social and do not require interactions with humans. They do not even look at humans, nor do they require to be looked at. All their communication and information comes through bidirectional touch, movements and smell (Hölldobler & Wilson, 2001). I hoped that the characteristics of these animals would help Carl bond without pressure. He could then regulate his interest at his own pace.

When Carl came to his next session the Antquarium was on the table, in front of his seat. We were now a Quartette, Carl, his mother, the ants, and me. Carl sat down and acted as though there was nothing unusual on the table. I waited for a while and finally asked: "Well?" In his metallic voice, Carl responded: "Ants!" He had clearly noticed the ants, but there was no sign of recognition on his face. This had been a common occurrence with Carl. He already "knew" something, but others did not expect him to know. He thus experienced adults as constantly trying to tell him things he already knew. Reluctantly he forced himself to listen.

I watched Carl concentrate on the ants. He tracked them visually and maintained a steady focus without difficulty. This was a great step forward for Carl. His mother yawned and slumped down as though ready to take a nap. She did not share Carl's and my enthusiasm in closely observing the ants.

As Carl observed the ants intently, his usual ritualistic arm movements stopped. The ants crawled around, explored a transparent passageway, and seemed to get to know each

other. Suddenly and with a degree of affect he had not shown before Carl blurted out: "Those there are digging." I responded: "Yes, exactly they are digging."

One ant carried a piece of the blue gel-like substance found in the Antquarium.

Carl pondered this and in response to an encouraging: "Hm. . ." he said: "That's sugar, they are eating it."

I answered: "Yes, they can feed on it."

We continued to watch, quietly and intently until two ants approached each other and cautiously each felt and touched the other.

I wondered aloud: "What are they doing now?"

Carl: "They are going to pass each other."

I said: "I wonder if they communicate?"

Carl mockingly: "They can't talk!"

I explained: "Perhaps not talk - but perhaps in other ways."

Silence.

Carl obviously thought about that idea but moved to another observation:" That one is clinging to the gel, that ant is sick!"

I did not want to challenge his observation and just said: "Oh."

After a while Carl said. "There comes another one - maybe to help."

I chimed in: "Helping Is Good." Silence followed.

At the end of the session Carl pointed at two ants and, movingly, said: "That ant found a friend." Carl's comments indicated that he clearly felt more than he was able to reveal.

In the following session Carl immediately went to the Antquarium. He and his mother observed the ants for some time, but again his mother fell asleep. Gingerly I invited her to sit next to me. I hoped to awaken her and to prompt her to move to a different chair so that she could see Carl's now lively face.

To no one in particular Carl said: "There are two with wings." His voice now sounded less metallic and more human. He showed interest, excitement and curiosity that he had not shown in the therapy before.

I said: "That's right. Do you know about the wings?"

He shook his head and I explained about the ant swarm, the queen and the flight of the males. Carl stared into the distance. He then shifted his body away from me and looking at the windowpanes said: "Mama cleaned them off."

His mother responded with irritation: "That's true; he remembers that I cleaned ants off the bathroom window." She was amazed and looked at Carl more closely. I turned to Carl to underscore his observation. I said: "You remembered the ants at your bathroom window." Carl nodded and again revealed a rare smile. We continued to observe the winged ants in the Antquarium and I asked: "What could they be doing?" Carl said: "Greeting each other." "And how do they do that?" "They shake each others hands and feet." Suddenly he grabbed the Antquarium and tried to take the cover off. I said: "Careful, the ants will get scared." Although I was not aware of it at the time, I was demonstrating for Carl, "empthy" for the ants.

In the next session Carl lifted the Antquarium very carefully. With obvious conscientiousness he let me know that he remembered my cautioning him in the previous session. He, too did not want to frighten the ants. Apparently, he had observed them and could understand that shocking actions could bring about a feeling of fear. He looked at the ants through a magnifying glass, counted them and said with satisfaction: "Twenty-one." I agreed that all were present and accounted for.

I believed that Carl had made significant strides in this session and I wanted his mother to take note of them. I tried to engage her by asking her to put herself into her son's place

and imagine how he might be feeling. Surprised by my question she shrugged her shoulders and said blankly: "No idea" Then she turned to me and asked: "What do you think?" I turned to Carl and said: "I think you are watching the ants and they fascinate you. You are curious about what's going on with them. It seems to me that you follow them very carefully to figure out what they are doing." He nodded. After a few minutes Carl pushed the Antquarium away and said firmly with newly found determination: "Let's play."

Carl pulled the *Memory* game off the shelf, dealt the cards and looked ready for action. His until then expressionless eyes now focused and in a modulated voice he said: "You begin."

Until now the games that Carl and I played involved only eye contact and shared direction. But now he chose a new game for us, *Hulli Gulli*, a game that required split second reactions. In the course of the game several players may hit a bell at the same time. Thus, physical contact among the three of us could occur.

In the course of this game I noticed that Carl enjoyed touching my hand. If he reached the bell before me and my hand fell on his, even though it meant he had won that round, he did not seem as pleased as when the reverse occurred. When I hit the bell before him he would slap my hand energetically. If I then made a mocking sound of pain he seemed particularly pleased. He evidently enjoyed the fact that he had an impact on me.

Winter came and the ants were returned to their natural habitat. Carl and I speculated about the fate of the ants. As we spoke Carl listened to me attentively and could speak in a modulated voice. Now Carl could not only pay attention and listen, but convey to the speaker that he was listening. These interpersonal skills were generalized to his classroom behavior.

A month after having given the ants their freedom Carl asked his mother for a hamster, and later for a cat. By this time Carl attended an academic high school and even enjoyed his classes. We spoke about teachers he admired and the interesting things that he learned. He became socially more active, made friends with classmates and even had sleepovers. He increasingly enjoyed being with his peers.

Discussion

Before they began therapy both Sam and Carl tried to imagine how people have meaningful interactions. Carl endured social interactions, but did not understand intentions (Stern, 2004), emotions, or mutual engagement. Sam was aware of the gap between what he observed about interactions and intentions, what he inferred, and his lack of affectivity.

We propose that the different family constellations of Carl and Sam contributed to differences in the development and manifestation of their Asperser's syndrome. Sam's family was high functioning, intellectual and engaged in noisy passionate fights. Sam was overstimulated and overwhelmed, withdrew and found solace in solitary reading.

Carl's family was low keyed. Intellectual functioning was not valued. Seen mostly in terms of his deficits, Carl also withdrew, but without the resources that would make this solitary withdrawal tolerable. Although his parents sought help for Carl they were continually thwarted and were left on their own, without even an explanation.

In the initial phase of his psychotherapy Carl gradually began to take into account and tolerate the presence of another person. Unaware of his lack of emotional connection to others he was satisfied with his school success after a short period of psychotherapy.

Consequently, he was ready to terminate. The introduction of the ant farm served to illustrate social relationships. By focusing on the ants and by working on the "local level" (Boston Change Process Study Group, 2004), Carl increased his verbal engagement with his therapist and broadened his emotional engagement with the social world.

The introduction of the Antquarium constituted a broadening of the therapeutic "play space." Numerous therapists, beginning with Freud whose dog remained in his consulting room during analyses, have included their pets in often unspecified ways in treatments. Ants are generally not placed into the category of pets, and the Antquarium, is not a regular feature of child therapy. Customarily in animal assisted therapy, the animal cotherapist is chosen in accordance with the specific needs of the patient. However, in this instance, after Sam's dreams, it occurred to us to try to engage Carl's interest in the living world by bringing him in contact with ants in an Antquarium. Carl thus encountered insects not particularly responsive to humans, but highly social and engaged with each other. In watching them play, move, struggle, fight, sleep, and eat, Carl glimpsed an intricate world through which he could extrapolate some basic dimension of human interactions.

Implicitly the ants led Carl to perceive the complex behaviors between socially interacting partners. He drew conclusions on his own about the "how" and "why" of their interactions. Left to his own observations he could muse aloud. By directing attention to what Carl had observed, the therapist put into words Carl's musing. Carl connected his observation, his musings and the words of his therapist, so that the entire process acquired a social context and meaning.

In his home Carl had felt misunderstood. Neither parent could sense what he needed based on his special problems. These problems deprived his parents of the usual signs of communication. The continuing cycle of miscommunication was disruptive to both Carl and his mother. They withdrew from each other with resentment. Neither one derived any satisfaction from the other. Even Carl's brother, Ted, did not try to engage Carl. However, in the course of the animal assisted part of Carl's therapy one day Ted appeared with Carl and his mother in my waiting room. He looked at me pleadingly and I agreed to include him. He then came for several sessions. Carl used this opportunity to watch his brother and me interact. He also noticed, that his brother was not always more capable in games and Carl watched Ted deal with his failures and losses. These experiences were fun for both and promoted a new attachment between the boys and their mother.

The way in which Carl and his therapist spoke to each another was unique in several ways. The therapist's responses were carefully attuned to be contingent to what Carl had been saying and experiencing. They helped Carl discover and articulate his until then frustrated and unformulated expectations. They also provided Carl with a new vocabulary to describe his new experiences. In the course of the therapeutic dialogue he was eventually able to enjoy quiet pauses of relaxation, pleasure in our playfulness, but most important relief from social pressures.

Carl's habitual way of relating had been to try to meet the expectations of the others. He then would get them to do things for him. Such interaction diminished his abilities to express himself. Through the therapeutic dialogue Carl discovered words to convey his previous aggressive and destructive actions. His helpless frustrated rage expressed through screaming and withdrawal disappeared as he began to utilize his verbal and emotional resources. These resources had become apparent in the therapy, and were carried over in his increased ability to pay attention and become more responsive in school.

By watching the ants Carl discovered the meaningfulness of social behavior. He followed the activities of the ants, became self-reflective and talked about the feelings and

motivations he attributed to them. Having learned some rudiments of empathy he simultaneously became more introspective (Kohut, 1977).

The therapeutic atmosphere now had changed. From the isolated world to which he had withdrawn he emerged into a living world in which he could access "emotions of companionship" (Trevarthen, 2003, p. 67). These were the very resources we had hoped to activate when treating his Asperger's syndrome psychodynamically. Toward the end of his treatment, Carl guided the therapist and his own therapy. He no longer reacted only to what was expected of him but began to experience and enjoy his own efficacy.

Carl's mother's presence turned out to be useful in his treatment. Apparently, she had shut down quite early in Carl's life. As Schore (2001) proposed, affective interactions between mother and infant structure the baby's brain and turns him from biology to psychology. Further, the mother's brain is stimulated but organized as well. The lack of mutual stimulation, for instance by mutual exchange of touch (Field, 2001), contributed to Carl and his mother distancing from each other. Equally, interactive mismatches, leading to mutual distress (Beebe, 2000), had to be recognized and then to be worked through in a mother-child therapy frame. In this way, the therapeutic situation became a forum for a new stimulation of the previously thwarted development of both Carl and his mother. Both were now belatedly engaged in a variety of early and age appropriate common mother-child interactions.

This aspect of the developmental process proved to be of particular difficulty. Whereas Carl enjoyed his victory in competitive games, his mother felt hurt when she lost. In Carl's development she missed out of much of the emotional fulfillment of the early mother-child attachment. She now had to meet Carl's age appropriate needs for self assertion and competition.

Initially Carl's mother tried to imitate the therapist's way of handling winning and loosing in games. Gradually she could enjoy Carl's improvement. At times he even looked at her eyes during the games and she enjoyed the newly won connection. At the start of the treatment she had been lost in her own thoughts and was oblivious to Carl. However, he insisted on her participation and that she follows the rules of the games. He thus helped her to concentrate and participate in their shared activity and prevented her from retreating into her withdrawn state. Their manifestly shared attention now enabled her to feel recognized as a mother. She was able to respond to this newly experienced recognition by increasing her attention to Carl. Over time, her tendency to fall asleep during sessions diminished.

The *Hula-Gulli* game that involved touching within certain rules was a turning point in Carl's treatment. From infancy onward Carl did not like to be touched and he did not like to be cuddled. He would turn away and cry when his mother tried to caress him. Having seen the ants touch each other, Carl and his therapist mused aloud about their touching each other and what kind of information such behavior might provide. Both, mother and child now were able to touch each other in an enjoyable way.

Carl's voice became more modulated as he discussed his own interests. Simultaneously his sensitivity to noise decreased. His ability to mentalize (Fonagy, Gergely, Jurist, & Target, 2002) became evident as he simultaneously could keep in mind his own game strategies as well as to anticipate the strategies of other players. These resources enabled him to feel more comfortable among his peers. His reactive rage and fear toward them diminished. He could tolerate their jokes and could joke with them and even about himself.

Sam's ability to modulate his voice was also important in his treatment. Like Carl he spoke in an even, somewhat mechanical way and with an absolutely still, emotionless

face. His mouth was in a perpetual slight smile. In the face-to-face sessions Sam's therapist carefully modulated his vocal and facial expressions. He wanted to make sure that they would be coordinated with the contents of the dialogue but not too far removed from Sam's habitual mode of communication. Gradually in the course of his treatment Sam's face began to show more emotional variety, especially around his eyes. When his therapist described observing more variety in his facial expression, Sam said that he had not been aware of this. Subsequently he announced that he had been looking at his face in the mirror and was now experimenting with different facial expressions, trying to see how they would feel. Sam stopped therapy after about 2 years when he obtained a new job in another state. It was a job that required more interpersonal contact than his previous one but he felt confident that he would be able to handle it.

Conclusion

Carl and Sam both fulfilled the diagnostic criteria for Asperger's syndrome. Adding to and expanding existing therapeutic approaches, we utilized a dynamic systems perspective.

In addition to verbal communication with the two patients we presented, our approach relied on gestural, facial, nonverbal, symbolic, and vocal displays. Specifically, we used the insect imagery in one treatment to further that patient's awareness for his growing emotional repertoire and in another treatment as "insect cotherapists," to engage nascent affective resources. For both patients the ants as either a symbol or a concrete presence moved the treatment toward a dynamic relational perspective. Both found a transition from their rigid and stereotypic nonhuman world to the world of feelings and people.

We speculate that for both, Carl and Sam, emotional life began on an ant farm. The ants presented each patient with a simple nonthreatening social structure that did not call forth terror or feelings of shame about their lack of comprehension about social relationships. In both patients forms of intersubjectivity (Beebe, Knoblauch, Rustin, & Sorter, 2005; Trevarthen, 1998) evolved. Carl developed feelings of mutuality and increasingly enjoyable social contact. Sam's symptoms resided to a greater extend in his internal world. He had learned the rules of social conduct, to some extend could behave according to them but did not feel them. The changes in his behavioral life were small compared to the blossoming of his intrapsychic landscape (Stern, Sander, Nahum, Harrison, Lyons-Ruth, Morgan et al., 1998).

To the best of our knowledge this is the first use of ants in a psychodynamic psychotherapy. Discovering their applicability was a stroke of luck inspired by Sam's dream. It is also probably the first time that an intrapsychic landscape had ants crawling in it.

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