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Commentary on "The Protest of a 6-Month-Old Girl: Is This a Prodrome of Autism?"

Hanna A. Alonim

This commentary discusses the dilemmas and questions raised by Dr. Voran's interesting case study of a very young infant, relating to two issues: a) Jane, the infant (the difficulties involved in the interpretation of an infant's mind processes on the basis of her behavior), and b) the elusive concept of autism (consideration of recent scientific epigenetic studies support the hypothesis that the intrauterine environment may increase the risk for future development of autism spectrum disorder). Though we now understand more about the role of biogenetics in behavior, the etiology of autism remains unclear. However, the plasticity of the brain in the first year of an infant's life provides potential for successful treatment of susceptible infants who may develop autism, when they are identified, and treated as early as possible. The author of this commentary welcomes Dr. Voran's case study since it contributes to raising awareness to this important statement.

COMMENTARY

This case study is particularly interesting because of the young age of Jane, the infant in treatment, and the author's deliberations concerning the possibility that Jane was heading toward autism.

In this commentary, I will focus on just a few questions raised within two aspects of the presentation: a) Jane, the infant, and b) the elusive concept of autism. I will attempt to enlarge on the author's thoughts, providing some additional perspectives on the issues raised.

a. Jane, the Infant

The parents were referred to psychotherapy by their pediatrician due to the distress of their 6month-old daughter. The referral to therapy at such an early age and the fact that the parents brought the infant to psychotherapy is not a usual process and should be respected. The author describes Jane's multiple, severe symptoms which forced the parents to turn to therapy. Similarly, the appearance of severe psychosomatic symptoms in infants often "forces" parents to involve a

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therapist. Dr. Voran indicates that these symptoms represent strong protest and strength on Jane's side but as she herself debates, could the intensity of symptoms have signified a severe disorder?

Dr. Voran notes several symptoms that were of specific concern. First, "Mrs. B said that Jane's only comfort was her mother's breast, though not always, because sometimes Jane screamed unpredictably in the midst of nursing." In addition, "the baby had no special smile for Mrs. B, even after day-long separations" (Voran, 2013, p. 140). In trying to understand the meaning and significance of these symptoms, some additional perspective would have been important.

In the initial months of life that represent the neuro-physiological regulation stage, feeding is a central factor in the infant's ability to regulate itself. The development of the ability for self-regulation, personality characteristics, the cognitive infrastructure and learning processes, will all determine the baby's capability for developing a sense of "I am worthy or unworthy" (Winnicott, 1965). Since infants' relationships with the world are mediated through their mouths, eating and feeding can serve as mirrors of the system of mutuality in the family (Alonim, 2007). It is interesting to know: what happened during the feeding process, which serves as the initial channel for attachment with the mother? Was there any lack of attuning?

Conjecturing about another symptom (a hyper focus on certain objects and shapes), the author queries, "And I wondered if the stream of stimuli, stimuli unattuned to Jane, had contributed to Jane's resolve to build an inflexible stimulus barrier?" (Voran, 2013, p. 153). "Was her hypnotic propensity biogenetic, or a derivative of prenatal influences, or some interaction of the two? Was it the residue of a defensive style she chose very early, chosen in part to adapt to a biological vulnerability? Does the technology itself invite stupor? Or was she identifying vengefully with her parents, holding up a mirror to them, that they might reflect on their own over-attachment to gadgets?" (Voran, 2013, p. 148).

Indeed there is room here to ask the age-old questions: Does the accelerating growth of technological communications media influence epigenetic mutations? Is it possible that if the mother consistently talks on the smartphone or sends mails while nursing, then the lack of direct stimuli to the infant due to her occupation with these technological activities will fail to sufficiently stimulate the infant's neurons?

Today we understand more about the presence of biogenetics in our behavior, although we do not yet know how to decipher this. The issue of the influence of the environment is definitely critical, but until we know how to read the epigenetic map we certainly cannot answer this question. Epigenetics (over the genetic sequence) is a discipline that studies the containing process of the genome that allows each cell in the body to function in a different way, but at the same time might expose it to potential mutation. In this context, it becomes challenging to consider both the infant's "given" predisposition on the one hand and environmental/parental influences on the other in the case study of a young infant.

As I was reading the case study, I sometimes forgot that this was a case of an infant who is 6-months-old, and I wonder whether the terminology used is not too harsh, even though we are familiar with these definitions in the traditional literature. "They could begin to contain *their daughter's terror* and rage" . . . "such a disturbed infant" (p. 147). Instead of the primitive coping strategies of pulling her hair to remove troubling thoughts or, perhaps, to turn sadistic impulses round onto herself—Jane began to tease her mother in order to symbolize and regulate, for example, her frustrations around weaning" (Voran, 2013, p. 148).

It is an interesting idea, but since Jane is such a young infant, the use of the term "sadistic" impulses implies that she is on the same level as someone trying to "remove troubling thoughts"

by pulling hair. It might be worth discussing to what extent Jane was able to be aware of the distinction between "the self" and "the other" at all. It is also interesting to discuss to what extent such an emotional and mental state is possible at this young age and where speculation starts. In that aspect, another question should be asked: whether the infant's mind enables her to "tease" and how can this occur?

Mahler, Pine, and Bergman (1975) indicate that the development of the self involves two parallel processes—separation and individuation, mainly occurring during the period from birth to the age of three, but Jane was too young to experience the establishment of this process.

In Melanie Klein's (1930) view, the whole of the oral stage is oral-sadistic in nature; indeed it was the high point of infantile sadism. Klein defined "envy of the breast" as a feeling bound up with oral greed, in which the destructive component instincts predominated; the desire to attack and destroy the object was not tempered by the gratitude generated by good experiences with the mother. This primal wish precipitated the split between the good breast to be retained and the bad breast to be expelled.

The author states that "by pseudo-independence, Jane triumphed over helplessness. Her protest was so vehement" (p. 150). Does the protest exhibited by the infant stem from some sort of emotional separation? What mechanism produces this process?

Bowlby (1969) claimed that infants separated from their mothers react with protestation, which may constitute the prototype of adulthood anxiety, depression, and detachment. Could Jane's behavior have been instinctual reaction aroused by her anxiety? (Alonim, 2011).

Is the perception of Jane's behavior as a more "adult" reaction linked with the way in which her parents see her, and perhaps also the view of the therapist, when they talk about the infant's walking and her desire to walk prematurely at the age of five months? "For a month, *she'd wanted to walk* and was happiest when *her parents held her hands as she marched about the room*" (p. 140). As the author says, this is precocious behavior for a 6-month-old; could there be another meaning for this behavior?

Infants go through several developmental stations, especially in their motor development, until they get up and walk between the ages of one to one and a half. The toddler thereby undergoes a transition to another phase that also includes the declaration: "I want to be independent" (Trevarthen & Aitken, 2003). What is the meaning of this transition? What motivates it?

Although the author highlights the sensory issue, more data may help us better understand the sensor sensitivity of Jane. Physiological regulation and homeostasis systems are interrelated and moderate emotional and attention regulation in infants during the neonatal phase (Geva et al., 2011). Prospective follow-up showed poorer attentional responses in infants that were hyper-responsive to increased endogenous arousal at 4 months. Early brainstem dysfunction detected during an infant's major maturational spurt in the late prenatal period will directly affect the modulation of gaze as a function of arousal to social stimuli, thereby compromising social engagement.

Difficulties in sensory processing characterize autism. Although for decades the relevant literature reported a lack of responsiveness as a sensory deficiency, it has become clear that this is actually oversensitivity in the tactile, visual, audio, and oral systems, which involves a deficiency of integration between the systems, causing a lack of sensory modulation (Dunn & Westman, 1995). A lack of sensory modulation may create confusion and anxiety, and in order to overcome this state the infant holds on to fixated habits that may help him/her to decrease their anxiety (Alonim, 2011). We still have insufficient understanding of infants' mental processes, although significant progress has been made in scientific autism research, which will be discussed in the second part.

b. The Elusive Concept of Autism

The author presents the question that most worried the parents: "While Jane's behavior was consistent with attachment difficulties, her tendency to withdraw and her difficulty disengaging from visual stimuli also resembled descriptions of autism or an autism spectrum disorder. This left me wondering if Jane might be headed toward autism" (p. 148). I fully agree with the author when she says that "Jane's sensitivities may have predisposed her to overstimulation and, hence, withdrawal" (p. 148).

If children with autism are strongly affected by genetic influences on one side and by early relationship-related neurodevelopment effects on the other. Where, if at all, should Jane be positioned on this spectrum?

The etiology of autism spectrum disorder (ASD) is still poorly understood; however, the search for genetic loci in ASD, including linkage and genome-wide association screens (GWAS), has identified a number of candidate genes and loci with multiple hotspots on several chromosomes. Using the new CNV gene chips technologies, several copy number variations regions were revealed (Bercovich, 2013).

"Neurological deficits, including those from genetic mutations, can expose an infant to terrifying gaps in the experience of maternal containment. The field seems to be gradually recognizing complex interactions between genes, physical and psychological environments, and brain structure and function. The claims of heritability remain strong, but evidence for environmental influence is growing" (p. 150).

In line with the context of the above citation, Ayers (2003) offers a fascinating theory about the lack of eye contact, which often typifies children with attachment difficulties and autism; she tries to understand what the infant sees when looking into his/her mother's eyes. She suggests that shame is a characteristic that originates from environmental failure and already deeply rooted in the early developmental stage that began with the meeting of the infant's eyes with those of the mother, reflecting her shame, and that this has a decisive emotional effect on the rest of the infant's life.

Also with regard to the above citation, it is interesting to mention that recent evidence indicates that oxytocin, a hormone with a central role in attachment and love, appears in low levels in the blood of children with autism and influences the social development of children throughout their lives (Mankuta, 2013).

Thus, recent scientific epigenetic studies support the hypothesis that the intrauterine environment may increase the risk for future development of ASD adding to the individual genetic infrastructure risk. Intrauterine inflammation factors such as Interferon γ , interleukin 6, and maternal antibodies were found to be associated with a later phenotypic presentation of ASD (Haviv, 2013).

Furthermore, "the revolution in brain science has clearly demonstrated brain plasticity and confirmed the perpetual transaction between genes and environment" (Yirmiya & Charman, 2010, p. 26).

Indeed, brain behavior evidence is consistent with the more general hypothesis that autism involves widely distributed aberrant functional organization in cerebella, and limbic regions, and these defects appear to underlie multiple cognitive behavioral deficits, involving the posterior cingulated cortex, which is a region thought to play an important role in normal human social emotional experience. In recent years, magnetic resonance imaging (MRI) has revealed a distinctive pattern of growth abnormalities in cerebral structures (Courchesne, 2011); "the pathogenomonic acceleration of brain growth during the first year of life occurs during a phase of rapid synaptogenesis and pruning, a process shaped by the infant's experience" (p. 28).

A decade ago, Bauman (2003) provided a basic explanation for this: "Normal brain development is not a monologue but a dialogue, in which the brain generates neural circuits and the child's experiences determine which ones survive."

"How do these scientific trends inform our understanding of Jane's case? First, we will consider Jane's diagnostic ambiguity. Was Jane, in addition to her clear attachment difficulties, also headed toward autism, as I defined it above?" (Voran, 2013, p. 150).

Since the human brain develops in reaction to stimuli, early identification and treatment of "lack of attachment" may significantly reduce the severity of the phenomenon of autism in infants. The difficulty in this approach of early identification stems from the behavioral character of the identification on which the diagnosis is based, so that it is difficult to compare different children who receive early treatment to those who develop extreme autism in the absence of treatment. This difficulty points up the importance of molecular identification of a child's tendency to develop autism at the earliest possible age.

The author quotes: "We should remember that most children who experience attachment difficulties, or even attachment disorders, do not develop autism-related difficulties" (N. Yirmiya, personal communication, May 29, 2013). (p. 151). "Although autism and attachment difficulties are distinct, they might, in some cases, share certain early etiologic factors. In these situations, autistic defenses might supervene, and eclipse the attachment problems, which would nonetheless survive as an occult pathogenic force" (p. 151).

Indeed, not every attachment disorder will necessarily develop into a disorder on the autism spectrum, but most autistic disorders involve an attachment disorder and infants that later develop autistic disorders show lack of attachment at the very early stages of their lives (Alonim, 2007).

Oppenheim, Koren-Karie, Dolev, and Yirmiya (2008) explored the way in which maternal insightfulness into the inner world of the child promotes secure attachment in children with ASD. Insightfulness is defined as the capacity to think about the motives that underlie their child's behavior, to be open to new and unexpected behaviors of the child, to show acceptance of the child's challenging behaviors, and to see the child in a multidimensional way. The findings showed that insightfulness, but that both insightfulness and security were unrelated to the severity of children's diagnoses or their level of functioning. On the other hand, they suggest that it may be easier to be insightful when children are secure, because secure children might communicate their emotions more clearly.

If we take into account that children with autism are extremely sensitive to the environment as a result of their anxieties and lack of regulations, there is a reason to assume that some flaw in regulation of the fundamental factors for engagement with the world is related to the lack of selfregulation and perception of the self, which is rooted in the characteristics of the autism disorder (Trevarthen, 2000). However, the appearance and development of the self will depend on how the human environment responds. The main phases in the process of the development of the self occur during the first year of life within the context of the mother-child relationship (Alonim, 2004).

Being able to distinguish between "me" and "not me" does not complete the process, but rather the developing self comprises aspects of the "other" and of the bond between the self and the "other" (Stern, 1983).

The author says, "Jane's defenses were modifiable. The speed and ease with which Jane relinquished her defenses were likely a function of her extreme youth, her parents' strengths—strengths apparent in their seeking treatment—and the apparent absence of pre-existing neuro-logical deficits. Not all infants who look pre-autistic, therefore, can be expected to respond to infant-parent therapy as Jane did; the response will depend on the source of the difficulties and the extent of neurological damage" (p. 152).

In my article "Infants at Risk – Early Signs of Autism" (Alonim, 2007), I presented a case study describing the treatment of a baby aged 5 months, and asked: "What would have happened to Ada (the baby) had she not undergone that very early treatment? This question, naturally, cannot be answered." Nevertheless the changes that occurred so rapidly for Ada during an intensive two-week treatment, in parallel with psycho-dynamic therapy for the parents (Alonim, 2004), indicated the potential for change that is possible because of the plasticity of the brain at this early stage. Ada was treated at home for a period of a year by her parents and one therapist. Ada is now 12 years old, a sociable girl, who dances and plays tennis in a youth group.

In light of our 25 years of experience in the bio-psycho-social treatment approach at the Mifne Center, these changes are more difficult to attain after the first or second year of life. Reviewing hundreds of toddlers diagnosed with autism at the age of 2-3, using retrospective analysis of parents' video-recordings of their first year of lives, we found that there were indications pointing to early signs of attachment disorders, which gradually developed into the autism spectrum. We therefore suggest that it is important and appropriate to use the term "pre-autism" to relate to these signs. As infants progress toward the end of their first year, they develop more skills in all areas of functioning-motor, cognitive, and social. This might be one explanation for the minor indications of the disorder during the first year of life. Nevertheless, this is a crucial period of time, which emphasizes the gap between the normal and the abnormal development processes. Parents may lose valuable time until they notice that something is wrong with their baby, either owing to their own difficulty in recognizing that there is a problem or because of the lengthy procedures that many professionals take to follow up the baby's development. It is also interesting to note that infants whose parents came to our clinic at their own initiative, and underwent a therapeutic process, parallel with their infant's therapy, achieved better results than parents who were influenced to turn to us by a third party, such as grandparents or pediatricians.

The author quotes: "Early identification and intervention can prevent autism" (Dawson et al., 2012, p. 28).

As for early intervention, recent clinical as well as brain sciences studies provide strong evidence affirming the influence of early environmental manipulation on the development of the brain (Pierce et al., 2011). The dynamic development of the brain during the first two years of a baby's life is critical with regard to the baby's ability to assimilate stimuli from the environment and learn. The exploitation of this opportunity when the brain is in its most plastic phase, through the use of suitable stimulation may influence the growth of neurons and thus contribute to the possibility of minimizing the severity of the autistic phenomena. It is possible that the lesser severity in cases of autism today for many susceptible children is due to earlier treatment following earlier diagnosis now available in Western society (Alonim, Scheingesicht, Lieberman, & Tayar, 2013). We are very pleased to see the following recognition and affirmation of recent research findings in the current Diagnostic and Statistical Manual of Mental Disorders (DSM-5), "Symptoms of Autism May Be Seen Earlier than 12 Months" (2013).

Given all that has been said above, and despite the question marks described in this commentary as well as those noted by the author herself, it seems to me that Jane's treatment had a substantial influence on her intriguing future development process. I feel that Dr. Voran's article contributes to our understanding and reinforces the call for greater awareness of the importance of early identification and treatment during the first months of life of susceptible infants.

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