Problems of Self-Regulation in Children: A Longitudinal Case Study of a Child from Infancy to Adulthood

Abstract
Infants and children with problems of self-regulation are commonly seen in clinical practice. These are children with persistent problems in self-calming, mood regulation, feeding, sleep, and sensory hypersensitivities. The different types of regulatory disorders have been proposed to include children with hypersensitivities: fearful/cautious or negative and defiant type; under-reactive; and motorically disorganized. Preliminary studies conducted on infants and young children with moderate regulatory disorders suggest that most of these children have hypersensitivities and motor disorganization. They are also at risk for emotional and developmental disabilities as they develop over time. To date few studies have validated the different types of regulatory disorders and their impact on mental health and overall development. This paper reviews problems of self-regulation, the different types of regulatory disorders, and presents a detailed case of a child with the hypersensitive type of regulatory disorder spanning the course of infancy through early adulthood. The case description helps to provide validation of the proposed classification of the hypersensitive type of regulatory disorder, and also presents longitudinal data to support the evolution of symptoms in a child with moderate regulatory disorder from infancy to adulthood.

Keywords: Regulatory disorders; Children; Mood dysregulation

Introduction
Parents and professionals have often puzzled over the importance of early regulatory problems in young children and their impact on the developing child. Most normal young infants show irregularities in negotiating sleep cycles, digestion, and self-calming which usually resolve around six months of age. However, some infants and children show persistent problems in sleep, self-soothing, feeding, and mood regulation (i.e., fussiness, irritability) which don’t resolve and may continue through life. As the infant grows into the toddler and childhood years, problems often become more evident. Difficulties with self-calming, sleep, eating, attention, sensory processing, intolerance for change, a hyper-alert state of arousal, and mood regulation (i.e., irritability, anxiety and depression) often occur. Children experiencing these symptoms have been termed regulatory disordered [1-3]. When the regulatory disorder persists over time, the child may become diagnosed with disorders including bipolar or mood disorder, anxiety, obsessive-compulsive disorder, Asperger’s syndrome, eating or sleep disorder, attention deficit disorder, and sometimes, post-traumatic stress disorder. Since children with these behaviors are commonly observed in clinical practice, it is important to understand the symptoms underlying the regulatory disorder and how early problems with self-regulation impact later development, adaptive behaviors, and interpersonal relationships.

Poor self-regulation is a process deficit that impacts the person’s everyday functioning and interpersonal relationships. Oftentimes problems of self-regulation are life-long and have roots in the person’s early childhood development. As problems with self-regulation become entrenched, the person struggles with self-soothing and mood regulation. It impacts the capacity to modulate arousal for sustained attention, to be motivated for purposeful activities, to process and tolerate a range of sensory stimulation, and to tolerate change and handle everyday stress. Frequently the child struggles with coping skills, impulsivity, and self-control, especially as they grow older [4]. As a result of the regulatory disorder, the child is apt to have difficulty developing a clear sense of identity, purpose in life, and self-efficacy.

An overview of the symptoms that constitute a regulatory disorder in children are described. The outcomes of preschool children who had regulatory disorders during infancy are described and how early symptoms may lead to these outcomes. The different types of regulatory disorders that have been proposed by the Diagnostic Classification: 0-3 is described. Finally, a detailed case example is presented of a child with the hypersensitive regulatory disorder. The case depicts how symptoms of poor self-regulation impact learning, relationships, and emotional development. This longitudinal case study spans the child's life from infancy to adulthood and helps to provide data to understand how symptoms of poor self-regulation may manifest at various stages of the person's development.

Overview of regulatory disorders in infants and children
There are a number of etiologies that can cause problems of self-regulation in infants and children. In most individuals
with a regulatory disorder, the problem is life-long and is often constitutionally based [5], while others are not. For example, infants frequently display sleep disturbances and/or colic which resolve spontaneously by five or six months of age. If however, early signs of irritability do not resolve by six months, the fussiness experienced by the infant persists and is coupled with other symptoms such as poor self-calming, intolerance for change, and a hyper-alert state of arousal, then it is likely that the child has a problem with self-regulation. Using Greenspan’s clinical constructs, these children have become recognized as regulatory disordered. The diagnostic criteria for regulatory disorders are provided in the Diagnostic Classification of Mental Health and Developmental Disorders of Infancy and Early Childhood [3].

A regulatory disorder is one in which problems exist in both behavioral regulation and sensorimotor organization. Typically the regulatory disordered child displays problems in sleep, self-consoling, feeding, attention and arousal, mood regulation, and/or transitions. Often these children are hyper-or hypo-sensitive to sensory stimuli including auditory, tactile, visual, and vestibular stimulation [6]. Because the diagnostic category of regulatory disorder is a relatively new one, there are few studies documenting the various clinical diagnoses associated with this problem.

Some persons are born with a difficult temperament and struggle with irritability since they were a baby. Hereditary mental illness such as bipolar illness, anxiety, and depression become evident in early to middle childhood and have a major impact on personality formation, mood stability, attachment relationships, coping skills, and adaptation to change. When these problems are accompanied by sensory hypersensitivities which is often the case, the child often reacts in maladaptive ways to overstimulation from others and the environment, misinterpreting soothing sensory experiences as aversive, and associating anxiety with certain types of sensory stimulation (e.g., certain types of touch, movement, sights or sounds).

In other children, the problem may be secondary to exposure to high stress, trauma, or other distressing external events. If the child has been traumatized or subjected to overwhelming levels of stress, the stress hormone, cortisol, elevates and induces a state of high alert and arousal in the individual which is highly deregulating. Often children who have been traumatized develop a learned helplessness which can lead them to feel that they are a failure and unable to tackle what they perceive as unsolvable problems [7,8].

Whether the regulatory problem is hard-wired biologically or related to traumatic events, the child struggles with a combination of symptoms including high irritability, poor self-calming, an intolerance for change, a hyper-alert state of arousal, as well as an inability to regulate the mind. Problems of self-regulation often cause the child to have poor self-control, impulsivity, low distress tolerance, inadequate coping skills, impaired judgment, ineffective problem solving, and negative self-esteem. It appears that the problem of poor self-regulation is related to a neural instability in the deep limbic regions of the brain [9]. Dysfunction in the limbic system can have a profound effect on the brain’s overall capacity to process information, focus attention, regulate mood and affect, and engage in interpersonal relationships.

### Criteria for regulatory disorders in children

1. The criteria for infants and children with regulatory disorders include the following:
2. high irritability with very poor self-calming capacities
3. significant sleep and/or eating problems
4. cognitive disorganization, motivational problems, ineffective problem solving abilities, and poor attention
5. mood regulation problems that may result in bipolar disorder, depression, and/or anxiety
6. sensory processing deficits usually with hypersensitivities to touch, movement, sights, or sounds
7. coping deficits with poor distress tolerance

### Clinical significance of regulatory problems in children

The clinical significance of poor regulation of arousal and state is demonstrated by the high incidence of children with sleep disturbances who have behavioral disturbances, attention deficit disorder with hyperactivity, and depression [10]. Infants with problems associated with regulating sensorimotor systems (i.e., hypersensitivity to stimulation) tend to develop emotional difficulties in the school-aged years [11,12]. Similar consistencies have been reported between negative temperamental characteristics assessed during infancy (e.g., distractibility, difficult temperament) and poor behavioral control, dependency, and aggressive behaviors in the preschool years [13-17], reactive depression in late adolescence [18], and later learning disabilities and psychopathology [19].

In a 15 year longitudinal study, infants with difficult temperaments were more likely to have psychiatric symptoms in adolescence, although demanding children whose families received mental health interventions were less likely to develop these problems [20]. Children with difficult temperament in high conflict families are at greater risk for developing aggression in the preschool years than children with easy temperament from similar families [21]. In addition, children with psychiatric disorders were more likely to have temperament difficulties and their parents showed a higher level of psychopathology than those without disorders which supports the relationship between parent and child as well as temperament on child psychopathology [22]. Dysregulated behavior early in life can also have a profound impact on the child’s ability to form secure and lasting attachments with significant persons in their life [23-25].

Children with regulatory disorders are very similar to those who experience a difficult temperament. Poor self-regulation and difficult temperament clearly overlap, however a child may have a regulatory disorder but not have a difficult temperament and vice versa. Our research suggests that many children with difficult temperament also have a regulatory disorder. It is also important to distinguish children who have sensory integration dysfunction from those with regulatory disorders. Although many children with regulatory disorders also have poor sensory processing and motor planning problems, not all children with
sensory integrative dysfunction have a regulatory disorder. It is important for clinicians to examine the symptoms that underlie a regulatory disorder in making a differential diagnosis. The criteria for children with moderate to severe regulatory disorders are ones that experience at least three of the following symptoms: poor self-calming with high irritability, sleep problems, feeding problems, inattention, mood regulation problems, and sensory processing problems [26].

Outcomes of regulatory disordered infants

As can be seen by this review of the literature, children with early features of regulatory disorders are at high risk for developing long-term emotional and developmental problems. Since these studies focused on children with difficult temperament, we conducted a longitudinal study to investigate the long-term significance of fussy babies who were diagnosed as regulatory disordered at 8 to 11 months of age. These infants exhibited sleep disturbances, hyper-sensitivities to sensory stimulation, irritability and poor self-calming, and mood and state deregulation [27,28]. When we looked at group differences, we found that children initially identified as regulatory disordered differed significantly from their normal peers in perceptual, language, and general cognitive skills at four years of age. Although the regulatory disordered sample did not differ from their normal counterparts in developmental parameters during infancy, at four years of age, five of the nine regulatory disordered infants had either motor or overall developmental delays. There was a high incidence of vestibular-based sensory integrative deficits (e.g., poor bilateral coordination and postural control), tactile defensiveness, motor planning problems, hyperactivity, and emotional/behavioral difficulties in the sample as well. These preliminary findings implied that regulatory disordered infants were at high risk for later perceptual, language, sensory integrative, and behavioral difficulties in the preschool years. Further follow-up studies on 39 infants with mild to moderate regulatory disorders showed that at age three-years they differed from their normal peers in sensory integration, mood regulation, attention, motor control, sleep, and behavioral control.

In another study examining diagnostic outcome, we compared the performance of infants ranging in age from 7 to 30 months who were normally developing (n=38), and 32 infants with regulatory disorders (10 mild and 22 with moderate to severe regulatory disorders) [29]. Two child psychiatrists unfamiliar with the subjects’ diagnostic classification during infancy reviewed the three year data and videotapes of parent-child interactions. Diagnoses were made by them using the DSM-IV and Diagnostic Classification: 0-3. Children who were initially in the normal sample were highly likely to be normal at age 3 years (97.5%). One of the 38 subjects in this group (2.5%) was rated as having a regulatory disorder using the Diagnostic Classification: 0-3.

Six of the ten infants and toddlers with mild regulatory disorders were found to be normal at 3 years. The remaining 40% had regulatory disorders in addition to a DSM-IV diagnosis. These diagnoses included developmental coordination disorder (10%), expressive/receptive language disorder (20%), sleep disorder (20%), or a parent-child relational problem (10%) (e.g., score in clinical range on the Child Behavior Checklist and also exhibited significant emotional problems). In addition, half of the 40% with diagnoses were found to have sensory integrative problems. None of these diagnoses except regulatory disorder reached the level of significance in discriminating children in the mild RD group from the normative sample.

The group that was most at risk for later developmental problems was the infants and toddlers who had moderate to severe regulatory disorders. These were infants who had 3 or more symptoms (i.e., sleep problems, irritability, sensory hypersensitivities). All but one subject had a DSM-IV diagnosis (95.5%) and 86% had two or more diagnoses. The most predominant diagnoses included regulatory disorder (50%), developmental coordination disorder (40.9%), cognitive delay (40.9%), parent-child relational problems (40.9%), and expressive/receptive language disorder (36%). In addition, 59% were rated as having sensory integrative problems. We also found that children who were more apt to develop parent-child relational problems at 3 years had feeding problems during infancy.

Types of regulatory problems

Three main types of regulatory disorders have been described in the Diagnostic Classification: 0-3. Through systematic reporting of cases from various centers, the Zero to Three task force developed a data base which served as the foundation for identifying recurring patterns in children with regulatory disorders. The three subtypes that they proposed are empirical and have not been validated. The attributes underlying each type are based upon different behavioral and sensorimotor profiles. A brief description of each of these types of regulatory problems are presented.

The Hypersensitive type: The child with hypersensitivities is overwhelmed by sensory stimulation and reacts in two ways - by becoming fearful and cautious in overwhelming situations or by becoming negative and defiant. These behaviors are adaptations for the child and provide a means of fending off overwhelming stimuli.

A. The fearful and cautious type has the following symptoms: inflexibility or rigidity in adapting to change, fearful of new people and situations, and severe separation anxiety. This type of child becomes easily upset and irritable and has difficulty self-calming. Sometimes the child develops obsessive or ritualistic behavior as an adaptation to stay calm and organized. The sensory profile that may accompany these characteristics is an over-reactivity to touch, movement, loud noises, and bright lights. Motor planning problems may also be evident.

B. The negative and defiant type also has difficulty tolerating change, is highly irritable, and is usually very controllable of the environment or “runs the show”. These children may be over-reactive to touch and sound with motor planning problems.

The under-reactive type: Children who are under-reactive are under-sensitive to sensory stimulation and have a tendency to
become withdrawn, difficult to engage, or self-absorbed. Children who are withdrawn and difficult to engage may appear depressed and avoid eye contact. Infants with this pattern may engage in repetitive sensory activities. They may tend to be under-reactive to movement, yet have either an over- or under-reactivity to touch. When the child is self-absorbed, he or she may tend to tune into his or her own thoughts or play rather than being responsive to others in reciprocal interactions or conversations. They tend to play by themselves when others do not actively join into their play and may seek isolated play. Since withdrawn or self-absorbed behavior is frequently a hallmark of children with autistic spectrum disorder or those who have pervasive developmental disorder, it is possible that children with more global developmental delays are more likely to show this pattern. Likewise, children with severe depression are apt to show this type of regulatory disorder.

The motorically disorganized type: This profile is one in which the child is extremely disorganized and unable to focus attention. The child may have a high activity level and may be aggressive as well. This type of child may show a pattern of craving sensory input. The child may be unable to wait for food, toy, or activity, and may be destructive. As the child grows older, they typically cannot plan and organize future actions, struggle to self-limit or control themselves, are highly impulsive, and they frequently lack insight into their own behavior. Often their relationships with others are highly disorganized, impulsive, lack foresight and planning. Frequently, individuals with the disorganized type have poor social relationships because they cannot sustain interactions in meaningful ways. Often they are diagnosed with attention deficit disorder and executive functioning problems.

Case Illustration of a child with a regulatory disorder: hypersensitive type- from infancy to adulthood

My work with this case began when Ali was 9 months old and spanned the course of 21 years. Working with Ali has given me a longitudinal perspective to observe what works and what doesn’t work in the treatment process, but also the opportunity to understand how severe sensory defensiveness and mood dysregulation evolves as the child grows older and their impact on emotional development. Ali’s symptoms as an infant were typical of the regulatory disorder described as the “fearful and cautious” type. Early on Ali’s symptoms included severe sensory defensiveness, hyper vigilance, fearfulness of people and sensory phenomenon, and clingy, dependent behaviors. Although she was an easy baby, high irritability and crying emerged in the second year of life. These symptoms evolved over time into a child with oppositional/defiant disorder and persistent sensory defensiveness. Although Ali improved significantly over the years in her sensory integrative disorder, she was diagnosed in the preschool years as also having non-verbal learning disability. What is very interesting in this longitudinal case is to observe the transformation of symptoms that occurred in Ali from a fearful/cautious child to one who fluctuated between a state of emotional and physical shut-down to oppositional defiant behavior. This case description also explores the impact of Ali’s regulatory disorder on the parent-child relationship, her personality development and identity, and learning ability. The therapy described highlights the importance of addressing both constitutional and parent-child relationship dynamics in the treatment process.

Ali at 9 months

I first met Ali at 9 months of age when her mother brought her in as a control subject for my fussy baby research study. I remember Mrs. B. telling me how proud she was to bring her baby as an example of “normal”. The assessment process included assessment of mother-infant interactions, temperament, parental stress, and self-regulation, as well as testing for sensory processing and attentional problems. In the play observation with Ali and her mother, it was striking how immobile and inactive Ali was. Here was a 9 month old who was content to lie prone on the mat, not reaching for toys or moving about. She was watching the world go by. Her mother seemed attuned to Ali’s vigilant state and commented on what Ali was looking at. When Ali reached for a toy, Mrs. B. would ask Ali, “What’s that?” or she would prompt Ali to do things with the toys like “Shake the rattle!”. Testing showed that Ali was slightly behind in all of her skills. She was also highly defensive to touch, recollecting when I touched her on her arms, hands, face, or legs during the Test of Sensory Functions in Infants [30,31]. When I moved her about in a simple rough house routine, a part of the TSFI, her body stiffened abruptly, her arms retracting, and she cried. She couldn’t tolerate me moving her in a simple up and down movement of her body in space. She seemed reluctant to touch appealing toys and when she did touch them, the toy remained inert in her hands. It seemed that a combination of tactile hypersensitivities and motor planning problems made it difficult for her to touch and plan simple actions with objects.

Although Ali seemed to have an easy temperament, she was too easy, passive in receiving the world and needing her parents to bring the world to her. There was dearly something more behind her “easy” temperament– most likely a chronic state of sensory and emotional overload. She was slightly behind in her development, and because she had problems tolerating touch and movement, and was not exploring the world, I suggested that it might be useful to provide Ali with some input to help her with these areas. Mrs. B. did not want to hear that her daughter might have problems. I expressed my interest in seeing Ali at our next follow-up visit at 2 years, and urged Mrs. B. to feel free to call me anytime if she had any concerns. I was aware that my feedback to Mrs. B. might have alarmed her, shattering her view that she had a “normal” baby. I wasn’t sure that she would come back to see me, but before it was time for the 2 year visit, Mrs. B. called me, feeling urgent that she get help for Ali.

Ali at 2 years

When Mr. and Mrs. B. brought Ali for the two year visit, they were desperate. They couldn’t take Ali anywhere without her becoming extremely distressed. She would cry and cling in terror to her mother when they went to family gatherings, play groups, and visits to the store or playground. Ali appeared panic stricken in groups, trembling all over, clutching a tattered blanket and saying repeatedly, “Go home, go home”. Mr. and Mrs. B. had given up on going many places and were feeling that their world was becoming increasingly more restricted and isolated. Grandparents and relatives often asked “What is the matter with that child?” and
offered unwelcome advice about what they should do instead. Not only were Mr. and Mrs. B. feeling shut off from the world as parents, but they felt at a complete loss for what would soothe Ali. Once upset, she was inconsolable, clutching frantically at them.

Mr. and Mrs. B. reported that Ali was unable to tolerate other children being near her, even at a distance. She seemed in terror of their activity level and noise. Ali could not stand to be touched, making daily tasks such as dressing and bathing a nightmare. Despite this, she wanted to be held constantly for comfort when distressed. It seemed that the only kind of touch that she could tolerate was static—being held but not stroked. She would touch objects, but only on her own terms. She avoided movement activities like swings that most children her age enjoy. She was bothered by noises, noticing sounds that most persons don’t normally notice. She would become extremely distressed by vacuum cleaners, sirens, bells, or toilets flushing. Ali was showing many of the characteristics of a child with sensory defensiveness, but it was accompanied with severe anxiety as was evidenced by her strong emotional reaction to group situations and leaving the house.

When I saw Ali for testing at 2 years, she could not sustain interest in toys, playing only briefly before losing interest altogether. She was very cautious in exploring the toys, generating play only when cued by her mother what to do. While holding a doll, her mother prompted her to point to the doll’s body parts. Ali was not able to initiate or organize any symbolic actions with the dolls, things like feeding the doll which most 2 year olds can easily do. Although her cognitive and language skills were within age expectations, Ali’s play was restricted to labeling objects or defining the objects’ properties (i.e., what color it was) and she wouldn’t play unless her parents organized it for her. Ali was experiencing a significant motor planning deficit, attentional problems, difficulties organizing reciprocal interactions and problems using language for communication.

Here was a child who, at age 2 years, was still clinging to her parents, fearful of exploring the world, and unable to organize even the simplest of play. The task of engagement with others was seriously compromised by her fear of social approach by others, her sensory defensiveness to touch, sound, and movement, and her limited capacity to sustain interest in persons and objects. Although she clung to her parents, her attachment to them was highly anxious. She had not learned to negotiate the basic task of engagement and intimacy with them. She had created a state of being merged with her mother that was unpleasant and intolerable for her mother. Mr. and Mrs. B. found themselves pushing Ali away when she clung to them. It appeared that Ali was not yet ready for the task of separation and individuation.

During the assessment I asked Mr. and Mrs. B. to step out to the observation booth so that I could see how well Ali could separate from them and soothe herself. Initially Ali was very upset and cried, but she comforted herself by standing against me while holding her blanket. After a few minutes, she became interested in playing with toys, and began interacting with me around them. It appeared that Ali had some capacities to separate and when she could do this, she was better able to construct purposeful and organized play and reciprocal interactions with me. It seemed that Ali and her parents were stuck in a conflict—Ali wanted her parents to soothe her but they resisted this task—pushing her away and until Ali felt that her needs for closeness were met by them, she would persist in this position – to cling, cry, and insist on being “one” with her mother. The severe sensory defensiveness was one of the reasons that caused her to be stuck in this dynamic.

The treatment at 2 years

My initial treatment plan was to focus on working through the parent-child relationship to address Ali’s constitutional and regulatory difficulties. Although she would have benefitted from occupational therapy interventions right away, I decided to focus on helping Ali to self-sooth, developing an attachment between mother and child, and learning how to explore the world without becoming overwhelmed before making that referral. Addressing the emotional aspects of the parent-child difficulties that existed between parent and child were central for her treatment. During therapy sessions, child-centered therapy was practiced for about 20 minutes between Ali and her mother or father, followed by a discussion about the process. Child-centered activity or infant-led psychotherapy is based on ego psychology as described by Greenspan and an object relations theoretical framework [26]. In this approach, infant psychotherapy focuses on the dynamics of the parent-infant interaction, insights gained by parents about their relationship with their child or issues from their past, as well as the emotional needs of parent and child during interactions. In this approach, the infant initiates all interactions and the parents seek to discover what it is that the child is seeking and needing from them and the environment. In this process, the parent may become attuned to her child’s constitutional and emotional needs, how her child wishes to communicate and interact, as well as the quality of the parent-child relationship. Helping the parent recognize projective identifications with the child is considered an important aspect of the treatment process. Relevant stages of emotional development outlined by Greenspan help guide the process (e.g., engagement and disengagement with objects and persons; organized, intentional signaling and communication on verbal and gestural levels, representational elaboration of shared meanings, and symbolic differentiation of affective-thematic experiences). Constitutional problems of the child such as irritability, sensory hypersensitivities, inattention, and other problems of self-regulation are addressed through the medium of play with the parent. During therapy sessions, the CCA was practiced for about 20 minutes between Ali and her mother or father, followed by a discussion about the process. My goals in working with Ali in this way were to facilitate self-initiation and problem solving, motivation to explore the environment, better sustained attention, better signal giving, sensorimotor exploration, a more secure and joyful attachment to her parents, and a broader repertoire of parent-child interactions.

When we began the child-centered therapy, Mrs. B. expressed feeling conflicted about the way in which we would be working. She had seen a psychologist before coming to see me who counseled her not to pick Ali up when she cried. In our first treatment session, Ali cried vigorously, wanting to be picked up, clinging to her mother and asking repeatedly to “go home”. I
suggested to Mrs. B. that she allow Ali to self-initiate and indicate what she needed. She was asking mother to nurture her, to hold her and comfort her. I explained to Mrs. B. that Ali needed to feel comforted by her mother in a basic way, like a young infant, and she needed to experience this before she would become self-reliant in soothing herself. Mrs. B. was upset by Ali's distress and did not want to hold her. When she held her, there was a pained expression on mother's face. She felt that all she did was hold her and did not think my idea would work. I suggested that when we practiced the child-centered therapy, Mrs. B. would learn how to read Ali's cues, to respond in ways that Ali needed, while at other times she could set limits (e.g., “no holding right now, I'm cooking dinner”). When I asked her what bothered her so much about holding Ali, she expressed that Ali was feeling abandoned by her. This was probably a very real experience for Ali because Mrs. B. expressed that she did want to escape from her child. Mrs. B. talked later in the session about wishing Ali was different—singing and playing like the children she heard through the wall in the next room. She also told me that she was uncomfortable being observed by me while she interacted with Ali. I was struck by how she wanted the ideal child who others would admire, yet it was difficult for her to share how painful their relationship felt to her.

In the following week, Mrs. B. reported that she had had a good week with Ali. They went to several outdoor events and new places without Ali becoming distressed. Despite this positive change, Mrs. B. expressed how helpless she felt when Ali became distressed and how vulnerable Ali must feel. That week in therapy, Ali wanted to be held the entire time, but she didn't cry. She listened to the children in the next room and even laughed as they sang songs. She experimented making loud sounds by kicking a chair. We ended the session playing a game of hide and seek with a toy to begin working on separation using a neutral object.

Over the following weeks in treatment, Ali remained clingy to her mother in the waiting room. Her crying and distress improved, but she continued to use her mother as a calming object, stroking her mother's hair. Mrs. B. reported that Ali was beginning to use transitional objects like a toy or blanket, however, sometimes her selection of an object was odd like carrying an onion around with her. She used these objects to stay calm in new situations. We had intermittent success in the next few weeks—a play date at another child’s house that went well, then Ali screaming on another play date. Her parents were angry at her that she was this way, seeming to expect a quick fix. Mrs. B. was distressed that Ali was so dependent on her. Mrs. B.’s own parents did everything for her as a child and she wanted Ali to be more independent. To respond to Mrs. B.’s wish for Ali to become independent, I suggested that she give Ali jobs to do like turning on the light or picking out a toy to play with as they entered a room which would also serve to give Ali jobs to do like turning on the light or picking out a toy to play with as they entered a room which would also serve to organize her.

Within a month of the start of treatment, Ali began to readily approach me. After picking out toys that she wanted to play with, Ali would rock in a chair, climb the ramp and look in the mirror and engage in other movement games like chasing a large ball, but she did not interact with any toys. Gradually she began to play with various toys at my office during the child-centered play, selecting things she could throw. I put out koosh balls, heavy bean bags, and other safe medium to throw that would provide her with tactile-proprioceptive input. Sometimes Ali would become overly exuberant and wild, throwing koosh balls around in her play. Because of the level of dyspraxia that she experienced, I would sometimes model things like a simple symbolic play scenario. If I showed her how to do it—e.g., feeding dolls with play doh, she could imitate me and seemed to enjoy enacting these schemes. However, whenever I introduced a doll into play, Ali would react as if it were real. For several weeks we had to have the doll just present in the room to get her accustomed to it.

The child-centered therapy was completely different at home. When her parents practiced it, Ali would want to hold an object that was unsafe or she would stop playing after only a few minutes. I was aware that both Ali and Mrs. B. needed me to contain their relationship. It seemed that Ali tested her mother by expressing unsafe or impulsive urges. Her parents also expressed a lack of pleasure in being with Ali and could only experience more positive interactions in my presence.

In the upcoming months, Ali gradually stopped asking to “go home” when out on excursions. She began testing limits more by running off or putting things she shouldn’t into her mouth. She was going to a play group with 2 children and doing well, but when she fell apart, Mrs. B. interpreted it as a major setback. Mrs. B. felt that other mothers viewed her as a bad mother and that something was seriously wrong with Ali for her to behave this way. Mrs. B. expressed strong feelings of isolation, depression, and hopelessness. She worried that Ali would always be this way. It pained her that Ali avoided people. She thought about quitting her job and moving away. Her only contact with others was seeing me or the play group once/week.

In addition, there was enormous strain on her marriage. Mrs. B. would call dad whenever she had had it, wanting him to come home immediately. It was clear that containing her own distress was difficult for mom. Likewise, her wish to escape only heightened Ali’s anxieties. Mrs. B. felt that she had no friends to talk to and relied totally on her husband. I was becoming aware how Ali’s problems mirrored mother’s internal world. Mrs. B. felt depleted by Ali. She desperately wanted a close friend but had no energy to meet people. She reflected with me about how she was outgoing and had many friends as a child. She felt that she was like the child on the playground who nobody wanted to play with. As Ali progressed, I was aware how Mrs. B. was becoming increasingly more depressed, isolating herself more and more, just like Ali. We talked about Mrs. B. getting help for herself which she was able to do. As she began seeing a therapist and felt a bit better, Mr. B. began talking with me how he had been enduring the emotional burden of supporting his wife and how he, too, needed a break.

The struggle for me as a therapist during this early stage of treatment was the difficulties the parents had in engaging with their child in a nurturing and loving way. Instead, they pushed her away when she approached them, feeling suffocated by their own child and wishing to escape from her. They felt like they were held hostage by their own daughter. They never experienced what other parents of toddlers could do— the opportunity to observe
their child moving away to master the world. As a result, there was a lack of differentiation between parent and child. Ali developed an over-dependence on her parents, and as we explored what this meant for Mrs. B., it became apparent how Ali reflected mother’s internal object relations. Mother and child were merged in an anxious and disorganized attachment pattern. For Mrs. B., her child seemed to mirror an aspect of herself that caused her great pain. When she looked at her child and saw that she was imperfect, she reflected that others saw her as an incompetent mother. Mother and child were merged as one but in a position of distress and narcissistic injury rather than a warm and loving attachment to one another.

From the child’s standpoint, Ali was a child who was clingy and viewed the world as unsafe and unpredictable. She was unable to move away and separate from her parents or explore the object and person world because of extreme tactile, auditory, and movement sensitivities and motor planning difficulties. She watched the world and viewed it as a scary place which only fueled her anxieties. She didn’t know how to engage in pleasurable interactions with her parents and other children, and instead, kept her parents close to her to organize and calm her. Her needs were that of a very young infant, not a child of 2 years.

The school-aged years

When Ali was 6 years of age, she began participating in a social skills group with two other girls. There was a burst in her social skills as a result of the group. She wanted play dates for the first time and seemed to crave time with peers. She went up to people’s houses in the neighborhood and knocked on their doors to ask to play for the first time. She was no longer hanging by her mother’s side – a great relief to her mother. Mrs. B. began to realize how immature Ali was in comparison to peers. They went to the swimming pool and Ali joined in the fun with the other children, but her play quickly became rambunctious– jumping, splashing, and screaming in the water. Other mothers expressed how it must be nice not to have Ali by Mrs. B’s side, but Mrs. B. felt that they noticed how bad off she was. When I saw Mrs. B. for a parent guidance session, she cried, expressing how much pain she had-- e.g., validation by other mothers that she was doing the right thing, feeling ostracized that she had an unusual child, and hadn’t had the typical parenting experiences that most parents had-- e.g., validation by other mothers that she was doing the right thing, feeling ostracized that she had an unusual child, and not having the experience of sitting with other moms and talking while her child ran off to play with other children. We talked about how Mrs. B. felt that it was as if she had no sense of self, that she was always constrained by Ali. I praised Mrs. B. in her efforts with Ali -- that it was because of what she had done that Ali was doing the things she was doing now.

Despite the lovely changes in Ali’s social behaviors, her behavior at home became increasingly worse. She was becoming more rude to her parents and doing outlandish behaviors to express her anger at them. She smeared feces all over the bathroom and yelled that she was angry. She said rude things to her parents, then when reprimanded, she would mock them back -- “Well, you’re being rude!” When her parents tried time out with her, she would have a huge tantrum. Both parents felt that none of the limit setting worked and felt that 90% of their interactions with Ali were negative. This surge of oppositional behaviors coincided with her increase in social skills. It seemed that Ali’s oppositional behaviors were related in part to the fact that she never learned to negotiate the task of intimacy and engagement, and when she did finally learn to separate, it was with extreme anxiety. Instead, when she engaged with others, it centered around distress and anger. Ali did not know how to assert herself in positive ways. She seemed to be operating at two ends of the continuum-- moving from a clingy, fearful child to intense, negative engagement.

During this period, it became more apparent the difficulty that Ali felt in self-calming. She often sought high intensity when engaged with anyone, not just her parents. She would say things like “I just want to be wild” or “I can’t stop myself”. In individual treatment sessions with me, she often submerged herself in the bubble bath bath inside my pup tent, screaming and laughing almost hysterically, wanting me to watch her as she did this. Often she would talk to the balls as if they were real, after which she would seem amazingly calm. In the pup tent she would exclaim things like “Stop, don’t do that!” to the balls.

Ali entered first grade that year in a specialized setting for children with learning and emotional problems. Over this year, we saw how she became overwhelmed with task or situational demands. Her response to requests to do things usually resulted in her becoming defensive, anxious, or avoidant. If she felt she couldn’t do something, she could become bossy or rude. She tried to control the activity by changing the rules to do it her way, or insisting that she could do it even when she couldn’t. We tried to encourage non-competitive activities to give her success in trying new things. I found that what worked well was structuring activities or selecting medium that allowed her to have varying levels of competence from simple to complex (e.g., art, dramatic play, construction toys). Once Ali organized herself, she often took cues from others to modify her responses or to model after them. If I gave too much direction early on, she would balk or becomes anxious. Finding ways to help her to take instruction from others was a major goal as she entered first grade.

Part of my work with Ali at this stage included consultation to her classroom teacher and the occupational therapist at school. I encouraged her teachers and therapist to have a familiar adult help her during transitions in activities, particularly when she had to go into a new situation or be with unfamiliar children. Unstructured activities were very difficult for Ali because of her dyspraxia, word finding difficulties, problems with visual-spatial perception, reading social cues, and executive functioning. For example, it was very difficult for her to walk down the hall on the way to the classroom or the lunch room. Open-ended situations like free play, recess, or field trips were very stressful for her. She wasn’t sure what to do or say. In these situations, she was apt to become a passive observer, show her distress by comforting herself (e.g., sucking on a finger), or by becoming silly (e.g., pretending to be a roaring monster). I suggested to her teachers to give her little assignments during these more open-ended times. For example, when walking down the hall to an activity, they asked her to carry something to be a helper. In large, noisy gatherings such as the
lunch room, we had her sit by the wall at a small table with only a few children, then had her leave the lunch room to a quiet space.

In the individual therapy, I focused on how to problem solve and sequence her thoughts. Ali needed help with being organized and figuring out how to do things on her own. We worked on how to connect ideas logically in a sequence, in understanding the link between actions and consequences, and to evaluate her behavior when problems arose. When we talked about problem situations, she had good skills in thinking through a solution, but enacting the solution in the midst of the problem was difficult for Ali, particularly because she tended to become loud, silly, over stimulated, or disorganized. What seemed to work best was enacting problems through dramatic play and presenting her with problem situations to solve, or prompting her to stop and think through what to do next as she worked through the sequence. I also used visual aids such as pictures or writing down the steps in a sequence as I helped her to figure out the best way to approach the task, thus playing to her strengths as well. She did well when given a specific verbal script or series of pictures to guide her in taking action. I used videotaping and comic script formats as additional mediums.

The playground was very challenging for Ali. She would usually stand back quietly and watch the other children. By the time she figured out how to enter their play, the children often had moved onto something else. Many times other children didn’t invite her into their play because of this. It helped Ali to be paired with other classmates for projects, allowing her to get to know them in more structured activities. She also did well when cued on the playground of how to get started in play. She responded very well to a behavioral program that we did during that year – the playground program. This program first rewarded her for simply getting out of the car and watching the other children, then rewarding her for standing next to the equipment, and gradually working towards going on equipment without other children nearby to ones with children on it. Moving freely between pieces of equipment on the playground was hard for her, so giving her a sequence of what to do helped. The playground program also focused on her building connections with her mother – using walkie talkies where she could keep a connection with mom at the playground. For example, I suggested that when they used them, mom could ask her things like “See if there are any pine cones under the tree” or “count the number of children you see with white shoes on and report back to me”. We played race cars and remote control airplanes that Ali could move across the field. We visited Pizza Hut one time to work on her hypersensitivities and fears of noise in this type of setting. Walking up to the trash can was scary for her to throw her trash away or going into the bathroom because of the automatic toilets. We talked ahead about what would happen – that she would order pizza, sit with me in the booth, then we’d throw our trash away, and go to the bathroom. With each juncture, she exclaimed to me “I did it”, “I can do it”. Ali seemed to enjoy school and showed a strong desire to learn, but would become easily upset when she made mistakes. She would say things like “I’m angry” when she couldn’t figure out how to do something. She seemed to do best if she saw another child solving the problem so that she could model after them. This worked better than if suggestions were made to help her. She was very responsive in my group if paired with a verbal child who could provide her with ideas. It didn’t work to focus on her statements of why she was angry. I found that giving her time and space to reorganize calmed her more as well as my ignoring these comments. She would generally come around within a few minutes, but if I joined her around her statements of anger, she would escalate quickly. Following these outbursts, I would simplify the activity and get her redirected in a productive activity like an art project or play scenario. I often suggested to Mr. and Mrs. B. to try this strategy, but they claimed it never worked for them.

Despite the good progress that I was seeing in Ali, I was struck by how Mrs. B. needed to hear over and over again what was going right for Ali. She seemed not to believe me when I told her how Ali was doing well in group and individual therapy. When I gave her concrete examples – i.e., how Ali showed wonderful in sight and empathy towards the other girls in the group when she was calm, she wouldn’t believe me and wanted me to say more. Throughout this year, there were some sessions with Mr. and Mrs. B. that they felt completely demoralized, saying - what was the point, nothing worked, and no one understood. I told them that it was OK to be disappointed and angry with me that I hadn’t been able to make a big enough difference. Some of the ideas I offered to them may have been too difficult or not possible for them to do. I reiterated that I would stick by them and would not abandon them. Their anger at professionals, including me, had been mounting. They were frustrated that no one understood Ali and what her problems were. They were disappointed that professionals had not been successful in making a enough change in their daughter and that no one was addressing the real problem. Mr. and Mrs. B. did not want to acknowledge that Ali might be reflecting the anger of the household and needed to displace it to me and other professionals.

Ali at 10 years

As Ali turned 10 years of age, we continued in both individual and group psychotherapy. Play themes centered around mastering separation and autonomy but doing so in the absence of an attachment figure. For several years in therapy, Ali had a preoccupation with playing the part of toddlers, selecting dolls that a much younger child might choose. Interestingly, she was terrified of toddlers as a young child, fearful of their
noise, boisterous play, and worrying that they might bump into her. I viewed her identification with the toddler as a need to master her early fear and to enact a stage of development that she never experienced. She would select Barbies for the parents and picked little dolls for the toddlers. She designated me to be the less able toddler who was a few months younger than her doll’s age. My role was to admire her doll’s competence and robust and daring nature. A typical play scenario would be that her doll would become very excited about packing up to go on a vacation. She would call my doll to invite me along on the trip. Inevitably, something would happen to the mother doll during the preparation for the trip. Usually the father would accidentally ride his jeep over mother=s long pony tail while she was in the driveway. The mother would scream “I just washed my hair”, then she would take another shower. As she played the various roles out, she spoke in deep voices for the father, and young, child-like voices for her doll, wanting me to assume similar kinds of voices. The family would load up and go to a vacation spot out on a desert island. In the play, my doll would meet her family on the desert island. The parents would settle themselves in chaise lounges on the beach and the two of us would go do something dangerous in the ocean waters. Usually we took a row boat out into shark infested waters or we would become accosted by pirates at sea. If I expressed anxieties such as “Are you sure this is a good idea? I’m really scared of sharks.” Ali would respond, “Don’t worry. I’ll protect you.”

During several episodes of this story, our dolls were taken hostage by pirates and thrown into the dungeon inside the ship or thrown into a dark cave in some remote secluded place. Her doll always escaped and ran for help while my doll remained helpless and scared. In the end, her doll would save me from the dark dungeon by fighting off the pirates. Throughout the episode, the parents didn’t notice the children=s disappearance and were unconcerned for their safety. Ali seemed relieved for me to experience and understand what she had been struggling with for yearsB her fear of the outside world, lack of protection, and abandonment.

Over the years in my work with Ali, she often carried transitional objects as a way of comforting herself when out and about in the world. As a toddler, her comforting objects were a lemon, a bicycle helmet, and a paint roller and trayB all odd and hard objects, certainly not very cuddly. In the school years she latched onto MucksterB a doll she found at a yard sale that was very dysmorphic and reminiscent of the objects in Toy Story. Its hair was cut off and what was left was dyed pink. There was a light bulb on the scalp; metal bars jutting out for shoulders, and a hideous looking face. She brought Muckster with her everywhere and to her therapy sessions. Often Muckster was integrated into our play, and frequently I was cast in the role of Muckster’s mother. Could I love this distorted doll?

By the time Ali was 10 years old, she began carrying a large stuffed black labrador retriever with her, something that persisted for several years. It looked quite odd to see this dog on a young adolescent’s lap in the waiting room, so I asked her to bring the dog in a back pack so that it would look more socially appropriate.

The teen years: containing dangerous impulses while creating meaningful attachments

As Ali grew into her teen years, she continued to play with dolls like a much younger child, but the play evolved into the use of paper dolls that she made from magazine pictures of rap singers. She spent long hours in her bedroom at home playing with her paper dolls. Her mother reported that when she listened at Ali=s door, she could hear a lot of street talk and vulgar language. When I asked Ali why she liked rap singers, she replied that she loved their gestures, clothing, and street talk. Sometimes in her work with me, Ali liked doing role plays using dress-ups. They were quite funny and engaging. The vignettes were of people in different situations such as an ex-beauty queen riding on a bus with a broken heel. She spoke in different voices with accents to accommodate each character; ad libbing her dialogue with me. I found it interesting that Ali enjoyed mimicking different kinds of voices, particularly deep male voices. I viewed the role playing as a way of helping Ali understand how people act, feel, and think. It was highly interactive and emotionally motivating for her.

By the time Ali was 16 years old, her play with the paper dolls stopped, but she became interested in writing stories at home. They were long plot-less stories about rap stars containing vulgar language. Her mother was deeply troubled by this, but I suggested that she allow her to write for a short period each day (i.e., 30 minutes) to give her an outlet for tension release. Ali reported to me that she would do this@ and if she didn’t, she felt enormously stressed.

Ali had no friends until she reached high school. She attended a private school for students with learning disabilities and eventually developed a few superficial friendships with the kids in her class. Until that time, her only social relationships were with her family members and me. She seemed to have no desire for friends. In her interactions with me, she remained physically stiff and awkward, walking and moving like a robot. Her eye gaze was oddB looking askance and not scanning to look at my face or others’ emotional displays for feedback. In the social skills group that she participated in for many years, she sat there stiffly, not initiating any conversation unless prompted by questions. In contrast, when I saw Ali before the group in individual therapy, she would be quite spontaneous and relaxed with me, but as soon as we walked into the waiting room or group therapy room, she froze up. It seemed that the stimulation of more than one person in the room was overwhelming to her. I wondered how much her inefficient visual scanning and tactile defensiveness put her physically on guard and resulted in a shut-down state.

When Ali turned 18, she went to community college as an art student. Over the next few years, I saw Ali intermittently, usually around incidents when she had done something very impulsive. On one of these occasions, she decided to cut all her hair off. When she came down to breakfast in the morning, her parents were shocked to see her hair hacked off and later found the hair strewn about in the bathroom sink. Mrs. B was extremely upset and felt that once again, here was an other reminder of Ali’s poor judgment and manifestation of her distorted body image. I reframed the incident for her, suggesting that Ali didn’t know how to assert that
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the regulatory disorder had a profound impact not only on her when overwhelmed by stimulation or interactions. Either shutting down or acting out, and difficulty self-calming difficulty tolerating change, an inability to self-control without both the fearful, cautious type and negative-defiant type was her she experienced drove these two states of being. Common to adaptively to new situations. The sensory hypersensitivities that between these two states of being made it very difficult for Ali to behaviors over the years oscillated between these two ends of the spectrum. She was either feeling over stimulated and shutdown or she was impulsive and out-of-control. The high variability as transitional objects to soothe her. These ranged from objects like a lemon, a paint roller; a dysmorphic doll with metal bars projecting out of the shoulders, a mannequin that she wished to sleep with, and eventually, a large stuffed dog when she reached adolescence. How striking it was that it took years before she could find comfort in soft, cuddly objects or people with whom she felt a warm attachment.

Tragically, Ali’s regulatory disorder had a profound impact on her relationship with her parents. They were caught in a terrible bind of needing to comfort her but without achieving a place where she could remain attached and independently explore the world. They felt constantly suffocated by her needs and rarely experienced the joy of observing their child develop into a confident and competent young woman. They also struggled over the years with harsh judgements from family and friends who could not understand what was wrong with Ali. It was like a hidden disorder that was difficult for others to understand.

The case described in this article is one of a child with a complex regulatory disorder. She demonstrated symptoms of both types of hypersensitivity—fearful and cautious and negative and defiant which suggests that a person with this type of regulatory disorder may exhibit symptoms in both dimensions depending upon the context and demands of the situation. Although she received a considerable amount of treatment over the years, Ali continued to have significant problems as she grew older. It is difficult to project what her outcome might have been without treatment. However, it appears that she was able to integrate the experience of therapy to eventually be able to live independently in college, form friendships with her peers, and find interests that might possibly guide her towards a future career.

Discussion

This case depicts how problems of poor self-regulation can manifest from early development into adulthood. The presenting symptoms that Ali experienced as a young baby were similar to the regulatory disorder described as the hypersensitive type: fearful and cautious. However, as she developed into a toddler and she became more autonomous, she showed a combination of both aspects of the regulatory disorder: hypersensitive type—fearful and cautious as well as negative and defiant. It seemed that her behaviors over the years oscillated between these two ends of the spectrum. She was either feeling over stimulated and shutdown or she was impulsive and out-of-control. The high variability between these two states of being made it very difficult for Ali to experience a consistent sense of self and the capacity to respond adaptively to new situations. The sensory hypersensitivities that she experienced drove these two states of being. Common to both the fearful, cautious type and negative-defiant type was her difficulty tolerating change, an inability to self-control without either shutting down or acting out, and difficulty self-calming when overwhelmed by stimulation or interactions.

As we track Ali’s history over time, it is very striking how the regulatory disorder had a profound impact not only on her overall development, but in her capacity to form lasting, stable relationships. Although she was able to form a warm, solid attachment with me over the course of therapy, she struggled to find appropriate ways to approach peers and family members without appearing unnaturally stiff, or needing help to know how to behave and talk in social interactions. Some of these behaviors were a function of her non-verbal learning disability. Instead of having close friends, Ali used a variety of odd things to soothe her. These ranged from objects like a lemon, a paint roller; a dysmorphic doll with metal bars projecting out of the shoulders, a mannequin that she wished to sleep with, and eventually, a large stuffed dog when she reached adolescence. How striking it was that it took years before she could find comfort in soft, cuddly objects or people with whom she felt a warm attachment.

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Conclusion

The construct of regulatory disorder is very useful for clinicians. If we can understand the underlying deficits that derail a child with a regulatory disorder, we can focus our treatments at the processes of self-regulation, attention and arousal, sensory processing, and emotion regulation. It is very important for clinicians to recognize the symptoms of young children with regulatory disorders. Many of these children may be normal in their developmental skills in the first two years of life, but as they grow older, their symptoms are likely to evolve over time and eventually involve other process domains that build upon problems with basic homeostasis and sensory regulation. It is very important that children be properly diagnosed early in life to hopefully prevent long-term, pervasive problems.

The importance of identifying infants and children with regulatory difficulties is crucial in light of preliminary research. Infants initially diagnosed with moderate to severe regulatory disorders are at high risk for later perceptual, language, sensory
integrative, and emotional/behavioral difficulties in the preschool years. Through early detection of regulatory disorders, it may be possible to prevent more serious, long-term perceptual, language, sensory integrative, attachment, and behavioral difficulties. Continued research is needed to further explore the clinical significance of regulatory disorders and the validity of the different types of regulatory disorders proposed by the Diagnostic Classification: 0-3 system. Longitudinal case studies such as the one described in this paper are useful in understanding the impact of regulatory disorders over time.

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