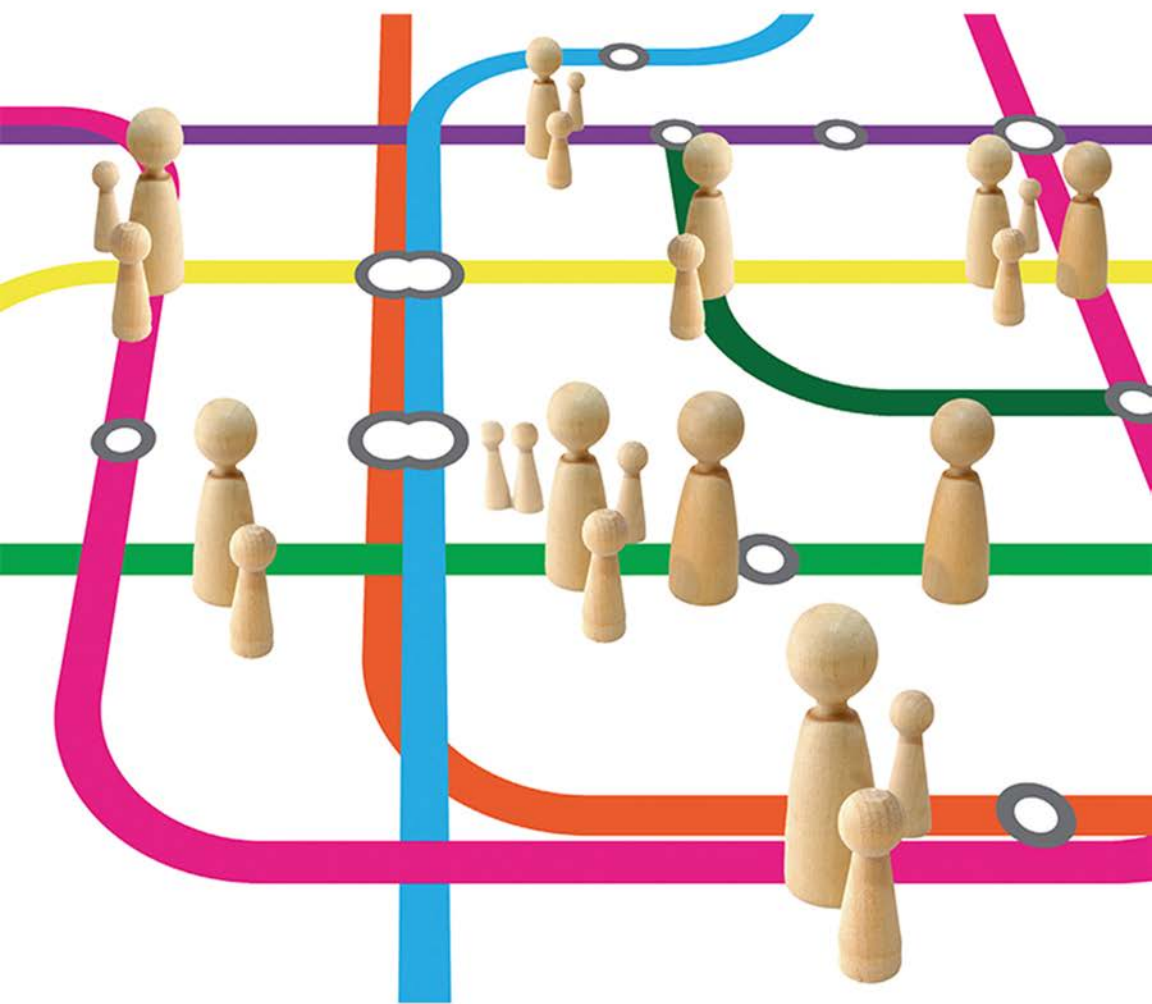


THE ALLAN SCHORE READER

Setting the Course of Development



EDITED BY EVA RASS
WITH A PREFACE BY SIR RICHARD BOWLBY

ROUTLEDGE

THE ALLAN SCHORE READER

Eva Rass, a leading expert on the work of Allan Schore, presents a collection that provides an overview of his core ideas and makes accessible the evolution of his thought. Including interviews and original papers, as well as integrating his ideas with research in psychoanalysis, developmental psychology, biology and developmental psychopathology, this book provides an in-depth introduction to Schore's theories.

The Allan Schore Reader: Setting the Course of Development represents a major contribution to the understanding of Schore's often dense and complex work. The choice of papers, interviews and subject matter is structured and instructive, while the content captures both the depth and breadth of Schore's ideas, including important extensions into other fields, like paediatrics, social work, and family law. Schore's contribution to the advancing knowledge base – pioneering the paradigm shift in researchers' focus in psychopathogenesis from the cognitive verbal left brain to the affective, preverbal right brain – is here made accessible to a far greater readership.

The book will be of interest to all practitioners, researchers, educators, and policy makers dealing with the critically important and broad field of mental health service delivery and prevention of mental illness for those "at risk", particularly psychoanalysts, psychoanalytic psychotherapists, and counselors.

Eva Rass is an analyst in private practice with over 35 years of experience working with children and adolescents. She is Professor at the University of Applied Sciences in Mannheim, Germany, and lecturer and supervisor at several psychoanalytic institutes. Her work covers several areas including developmental psychology, attachment theory, clinical learning disabilities, affect regulation theory, psychodynamic psychotherapy, and analytic self-psychology.



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PERMISSIONS

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- Schore, A. (2003), Dysregulation of the Right Brain: A Fundamental Mechanism of Traumatic Attachment and the Psychopathogenesis of Posttraumatic Stress Disorders. In A. N. Schore (Ed.), *Affect Dysregulation and Disorders of the Self*, 234–265. New York, London: Norton.
- Schore, A. (2014), Looking Back and Forward: Our Professional and Personal Journey in *Neuropsychotherapist*, issue 7 October 2014, Queensland Australia: Dahlia Media, pp. 8–17.

PREFACE

I first met Allan Schore on 16th July 1998. There was to be a conference at the Tavistock Clinic the following weekend and I had been asked to collect the speaker and his wife from Heathrow and to provide them with a few nights' accommodation at our house nearby in Hampstead; Allan and Judy have been dear friends ever since. The only conversation that I can recall on the car journey back from the airport was when I asked Allan "What kind of a guy are you?" His reply was illuminating. "It's odd; I find that if I read something that is personally meaningful, even science, I'm able to not only precisely remember where I've read it, but how it links into related information. And I read a lot."

My first understanding of Allan's profound commitment to my father's work on attachment theory was that weekend when I had asked him if he would like to see round my father's study (we live in the house next door). My father had died eight years earlier in 1990 and his study had been taken over by our daughter Sophie as her art studio, but the room still had his original writing desk, his file cabinets and much of his library. Allan's physical response to being in John Bowlby's study was intense – I could see that he was deeply moved.

Eighteen months earlier I had videotaped an interview with Alan Sroufe about his Minnesota study and his thoughts on attachment theory, and so I decided to ask Allan Schore if I could record an interview with him about his views on neuroscience and attachment theory, which he agreed to do. At the time of the interview my knowledge of attachment theory was sketchy at best, but my knowledge of neuroscience was next to zero. The result was that my questions were so naïve as to be practically incoherent. But that meant that I had stumbled on the perfect combination: Allan's passion to explain his new understanding of the neurobiology of attachment theory to me – John Bowlby's son – combined with my obviously limited grasp of the subject had forced Allan to use the simplest of terms to describe the most complex of concepts so that I might be able to understand what he was

saying. The resulting interview is unique, and after I retired in 1999 I edited the recording and incorporated much of it into a training tape (DVD) on attachment theory, extracts of which have made their way onto YouTube.

Over time I was to learn that by the early 1980s Allan was already an accomplished attachment scholar, and that he spent ten years immersed in the study of the latest neurobiological findings, exploring the fit between attachment theory and neuroscience. Allan's return to being a full time student was only made possible by what he called "The Judith Schore Foundation." They switched income responsibilities so that Judy's and to a lesser extent Allan's psychotherapy incomes supported a household and two young children! Judy continues to play a crucial part in Allan's work in a similar way that I saw my own mother supporting my father in his work. The outcome of this intensely creative period of Allan's life was the publication in 1994, the onset of "the decade of the brain," of his groundbreaking book, *Affect Regulation and the Origin of the Self*.

In my present role as a lay ambassador for attachment theory, it brings me much reassurance to know that there are people such as Allan who are able to explain and integrate the complexity of the multiple specialties of neuroscience, of attachment theory and of psychotherapy. I believe that the ability to make the crossover between such specialties is the key to the synthesis of new conceptual frameworks, and that there is no substitute for having a single mind which is able to hold the mass of information needed to distil out new insights.

I am confident in believing that of all the many advances in attachment theory since my father's death, he would have selected the link between attachment theory and neuroscience as being the most significant. I think that Allan's contribution to the understanding and dissemination of attachment theory – the science of family love – has been profound. There is now a broad understanding within society that early childhood experiences have a physical impact on the developing brain. This general acceptance fundamentally changes attitudes to the vital importance of the early years, an acceptance that attachment theory alone has struggled to achieve. The weight that the "hard science" of neurobiology has added to the "soft science" of psychology has lifted attachment theory to a new level.

All human achievement is built on the shoulders of giants, and just as John Bowlby and Allan Schore have stood on giant's shoulders, so future generations of scientists will in turn be standing on their shoulders. In his books he has integrated a vast array of scientific advances and organized it in an overarching way that deserves the deepest acknowledgement and gratitude.

Sir Richard Bowlby
London, May 2012



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INTRODUCTION

Since the publication of his first book *Affect Regulation and the Origin of the Self* in 1994 Allan Schore has become one of the leading authorities in the field of developmental neurobiology and early child development. The following chapters of this volume provide a detailed insight into his creation of a new field of scientific research: the concept of affect regulation and its relationship to emotional development, first introduced by Allan Schore. His research integrates findings that draw from various scientific disciplines, such as attachment theory, affective neuroscience, developmental psychology, and psychodynamic psychotherapy. Over the course of more than 30 years he has tirelessly and continually attempted to deepen our understanding of how early relational affective interactions with the social environment may fundamentally influence all later stages of life. In his continuous research he rarely misses publications in the biological, psychological, social, medical, or cognitive disciplines that address this problem, the central focus of his regulation theory. Due to the complexity of his multidisciplinary approach, his writings may seem arduous and challenging as he combines various scientific fields and multidisciplinary backgrounds.

Over this time period Schore describes a paradigm shift from the primacy of behavior, cognition, and content to the primacy of emotion, relationship, and context. In parallel to these psychological changes the neurosciences have shifted the emphasis of their empirical research from the later maturing left hemisphere which is involved in conscious, verbal and cognitive processes to the earlier maturing right hemisphere which is engaged in preverbal, unconscious and emotional processes. Schore's synthesis of the literatures of various scientific fields has been a major contributor to the now accepted idea that developmental processes represent psychobiological phenomena, progressions in both psyche and body. Indeed, humanistic and biological scientists are currently using a common approach in order to achieve an overarching conceptualization of early human development.

2 Introduction

In the introduction of the German translation (2007) of *Affect Regulation and the Repair of the Self* (2003) I emphasized the courage of Schore in offering an integration of the growing body of scientific research over the last three decades in developmental psychology and developmental biology. Moreover, I pointed out that comprehending Schore's writings places a heavy demand on the reader. Although his work has gained positive critical resonance and outstanding acknowledgement, readers have expressed difficulties in understanding the complexity of his work and have been daunted in struggling with the texts. This issue made the German publisher Klett-Cotta reach out to me to write an introduction for Schore's work, especially after I had translated *Affect Regulation and the Repair of the Self*. As I have written, his accomplishments and findings are of extreme importance for all those who are working in the field of mental health and early education.

To make this access more comfortable a gradual approach to five original Schore papers and one lecture is presented. But first I begin with some book reviews of different Schore volumes, chosen to accentuate specific issues. These reviews also contain summaries of the rich content of these books, as well as an overarching perspective of his work at different points in time. Following this I offer four interviews with Allan Schore, in order to give not only a more informal presentation of his theories, but also a more personal glimpse into his motivations and his creativity.

With this introduction to Schore and to the reception and impact of his work, the reader will be prepared to read a sample of original articles and addresses. I start with the *Preface* and the *Introduction* of Schore's first volume *Affect Regulation and the Origin of the Self* (1994) in which he outlines his original hypotheses about the general nature of development, and in particular human social-emotional development. In less than ten pages Schore describes his provocative model not of cognitive but of socioemotional development, and simultaneously suggests a scientific continent that has to be explored. Here he develops his concept of affect regulation that runs throughout all his work. Then we have to go back three years – to 1991 – the year of the first publication “Early Superego Development: the Emergence of Shame and Narcissistic Affect Regulation in the Practicing Period.” In this seminal and far-reaching paper Schore has elaborated on an interdisciplinary conceptualization involving observations from various fields that were beginning to offer studies of socioemotional development – psychoanalysis, infant research, developmental psychology, and neurobiology. This overarching model of early regulation attempted to elucidate specifically how psychological experiences influence the maturing structures of the developing brain and how these evolving structures sustain more complex psychological functions. This paper was written before the “decade of the brain” and it highlights the primacy of emotion – at a time when psychodynamic theory did not yet have a theory of affect. Furthermore he investigates developmental lines in the preverbal period, i.e., during the developmental phases in which the key issue of psychoanalysis, the Oedipus complex, does not play a role. Schore also explores the basic functional mechanisms of shame which have an earlier developmental origin than the emotion of guilt. He also introduces his

models of psychopathogenesis, wherein states of neglect and emotional failure in the mother–infant relationship can lead to pathological coping mechanisms in the early developing right hemisphere. His focus is on events in the latter parts of the first and into the second year, describing the interpersonal neurobiology of the research of the developmental psychoanalyst Margaret Mahler’s practicing period of separation–individuation and rapprochement crises.

Following chronologically, the essay written in 2000, “Attachment and the Regulation of the Right Brain”, documents the enormous advances in the field of attachment research since 1969, and Schore’s profound acknowledgement of the work of John Bowlby. He refers to the growing body of studies indicating the critical importance of the development of attachment that supports the emergence of affect regulation, of the sensitivity and availability of the mother in responding to her baby’s cues, and of the amount and interpersonal nature of their emotional interactions. Utilizing an interdisciplinary perspective Schore demonstrates that the infant’s stress coping capacities are shaped by the primordial relationship with a mature adult, the primary attachment object. These processes indelibly influence the earliest stages of the development of the brain and mind. Differences in humans in regulating inner tension states and in developing synchronized interactions are the result of the transgenerational transmission of psychobiological attunement and not primarily a result of genetics. Both the development of successful adaptability or deficient capacities occur in the caretaking environment which influences the promotion or the failure in the maturation of right hemispheric regulatory circuits. Schore suggests that Bowlby reminds us that Freud also had attempted to integrate neurobiology and psychology in order to create a theory of the development of unconscious processes that is grounded in a “natural science.” For almost 30 years now, Schore has been following this same path of integrating brain research and clinical psychoanalytic models.

The essay “Dysregulation of the Right Brain: a Fundamental Mechanism of Traumatic Attachment and the Psychopathogenesis of Posttraumatic Stress Disorder” was published in (2002) in the *Australian and New Zealand Journal of Psychiatry* and was awarded the accolade of best scientific paper of the year. In this complex work Schore integrates developmental psychology and psychiatry in order to describe the neurobiological consequences of relational trauma with its severe disturbances and pathogenic phenomena. In great detail he sets out the consequent negative repercussions of chronic relational stress on developing right brain subcortical and cortical circuits. Microanalytically he sheds light on the nature of the protoconversation which is embedded in the attachment dialogue. Frequent unrepaired missattunements lead to enduring and intense states of affect dysregulation, causing enduring deficits in stress coping mechanism over the life span which may result in damage to physical, mental, emotional, and cognitive systems. Schore emphasizes attachment research and its importance for mental health workers in the area of infant and developmental psychology. Education via intervention and prevention programs is vital for the crucial mother–infant dyad in order to improve the quality of many lives throughout all stages of human development.

4 Introduction

In March (2014) at the UCLA Interpersonal Neurobiology Conference Schore gave a very personal talk *Looking Back and Looking Forward: Our Professional and Personal Journey* in which he described the arc of his professional career with all the challenges and “downfalls” bringing along disappointments in the beginning, followed by continuous “ups” that lead to satisfaction and personal pride. In this speech he expressed deep affection and thankfulness to his wife Judy who has supported and accompanied him in this “tremendously exciting quiet life”, being an eye-to-eye, shoulder-to-shoulder partner, and thereby not just a great woman *behind* but *beside* him.

In (2001) Allan Schore was invited to present the Seventh Annual John Bowlby Memorial Lecture and the consequent essay “Minds in the Making: Attachment, the Self-Organizing Brain, and Developmentally- Oriented Psychoanalytic Psychotherapy” was published in (2001) in the *British Journal of Psychotherapy*. In (2010) he elaborated on this concept and it was published under the title “The Right Brain Implicit Self: A Central Mechanism of Psychotherapy Change Process” in the book “*Knowing, Not-Knowing and Sort of Knowing*” (Ed. Petrucelli). In these papers Schore wanted to present some recent interdisciplinary advances that are forging tighter links between the common goals of classical analysis and attachment theory. He emphasized that the new developments that are re-coupling Freud and Bowlby come from neuroscience. Schore suggested that an integration of current findings in the neurobiological and developmental sciences can offer a deeper understanding of the origins and dynamic mechanisms of the system that represents the core of psychoanalysis, the system unconscious. In these papers he described a number of psychoneurobiological mechanisms by which attachment experiences specifically impact the experience-dependent maturation of the right hemisphere. Further he suggested that regulation theory describes the mechanisms by which the patient forms an attachment, that is a working alliance with the therapist. The major contribution of attachment theory to clinical models is thus its elucidation of the nonconscious dyadic affected transacting mechanisms that mediate a positive therapeutic working alliance between the patient and the empathic therapist. Complementing this, the neurobiological aspects of attachment theory allow for a deeper understanding of how an affect-focused developmentally oriented treatment can alter internal structure within the patient’s brain/mind/body system. This approach supports Bowlby’s assertion in his last writings that “clearly the best therapy is done by a therapist who is naturally intuitive and also guided by the appropriate theory”.

In his workshop at the 107th Conference of the German Pediatricians 2011 in Bielefeld, *Using Modern Attachment Theory to Guide Assessments of Early Attachment Relationships*, Schore refers mainly to the previously mentioned (2002) essay as well as to diverse other scientific findings since the first elaboration in 2002. Similar to the first publication in (1991), he defines a well-structured field of developmental neuropsychology in which new scientific findings supported his regulation theory. Furthermore, a vignette is offered to demonstrate the approach of regulation theory. In his keynote presentation at the conference, *Developmental Origin of Health and Disease*, he clearly pointed out the relevance of the pediatrician as being the first professional

to get insight into and pragmatic understanding of the early interactions between a particular caregiver and her baby. Via primary clinical observations, paediatricians may function as mediators recognizing early problems in developing parent-child relationships and therefore the first professional who can refer families to sustaining intervention programs. In the human sciences there is now strong support for the idea that the origin of illness in adulthood can often be found in developmental impairments which have occurred during the first years of life. The rapid increases in knowledge about attachment transactions, nonverbal communication, and interactive regulation that lay at the core of the mother-infant relationship allows the clinician to more deeply understand this psychobiological realm. This is of especial importance for dyads with a high-risk status that may predict later pathological dysfunctions as well as psychosomatic illness. A body of clinical research now shows that timely therapeutic interventions in phases of high developmental vulnerability have enduring positive effects. At the end of this section I offer my own thoughts about the application of Schore's work to day care and early childhood education.

In the final chapters of this book, more fields of application are demonstrated for regulation theory. In addition to the previously described significance of affect regulation theory for the developmental and clinical disciplines, this work has important implications both within and beyond the field of mental health. Indeed, the theory can not only increase our understanding of patients but also generate more effective models of treatment. This is articulated in Judith Schore's and Allan Schore's essay (2008) "Modern Attachment Theory: The Central Role of Affect Regulation in Development and Treatment" published in the *Clinical Social Work Journal*. The importance of regulation theory for decisions of the family court can be seen in the publication "Family Law and the Neuroscience of Attachment" (2011) published in the *Family Court Review* (together with J. Macintosh), as recent psychological knowledge about human relationships, attachment needs, and affect regulation can also influence legal decisions based on the best interests of the child. Furthermore, the vast realm of education and learning should be grounded upon this knowledge. The current *Zeitgeist* overly emphasizes left brain language capacities, cognitive flexibility, and executive functioning skills. But the field of early childhood should combine cognitive-linguistic enrichment with greater attention to emotional process and affect regulation in order to prevent significant adverse effects on the early developing right brain.

In addition, affect regulation theory offers explanatory developmental models of behavioral disturbances and cultural effects beyond the human species. The destruction of early developing attachment structures can have long-lasting and enduring detrimental influences on the physiology, behavior, and transgenerational social culture of not only human but also animals. In the journal *Nature* (2005), as well as in *Ethology* (2007), findings in the fields of behavioral biology were published in order to explain "elephant breakdown" – a social trauma that results from human-induced early disruption of attachment bonds. In the future, interdisciplinary research may further develop trans-species concepts of development of brain and behavior.

In 2015 (November, Santa Fe) and 2016 (October, Chicago) Schore offered presentations on the topic of the gender's influence and the developing brain. He described in detail the differences in brain development of both sexes. Neglecting these differences and resulting needs can be dangerous.

This book offers the reader an entry and overview as well as a deeper look into Allan Schore's critical research, as well as the mind that created it. For those of you new to his work understanding its complexity may be challenging at first. But stay with it – it may open new horizons, and I would say, unimagined dimensions of knowledge and self-awareness.

I thank Allan Schore for agreeing with the concept of bringing him and his work closer to the field of mental health care workers, and for his interest and support during this evolving process.

References

- Bradshaw, G. A., & Schore, A. N. (2007). How elephants are opening doors: Developmental neuroethology, attachment and social context. *Ethology*, 113, 426–436.
- Bradshaw, G. A., Schore, A. N., Brown, J. L., Poole, J. H., & Moss, C. J. (2005). Elephant breakdown. *Nature*, 433, 807.
- Petrucelli, J. (2010). *Knowing, not-knowing and sort-of-knowing: Psychoanalysis and the experience of uncertainty*, 177–202. London: Karnac.
- Schore, A. N. (1991). Early superego development: The emergence of shame and narcissistic affect regulation in the practicing period. *Psychoanalysis and Contemporary Thought*, 14, 187–250.
- Schore, A. N. (1994). *Affect regulation and the origin of the self: The neurobiology of emotional development*. Mahwah, NJ: Erlbaum.
- Schore, A. N. (2000). Attachment and the regulation of the right brain. *Attachment & Human Development*, 2, 23–47.
- Schore, A. N. (2001). Minds in the making: Attachment, the self organizing brain, and developmentally oriented psychoanalytic psychotherapy. *British Journal of Psychotherapy*, 17, 299–328.
- Schore, A. N. (2002). Dysregulation of the right brain: A fundamental mechanism of traumatic attachment and the psychopathogenesis of posttraumatic stress disorder. *Australian and New Zealand Journal of Psychiatry*, 36, 9–30.
- Schore, A. N. (2003). *Affect regulation and the repair of the self*. New York, London: Norton. (dtsh.: Affektregulation und die Reorganisation des Selbst. Übersetzt von E. Rass. Stuttgart: Klett-Cotta 2007).
- Schore, A. N. (2010). The right brain implicit self: A central mechanism of the psychotherapy change process. In J. Petrucelli (Ed.) (2010), *Knowing, not-knowing and sort-of-knowing: Psychoanalysis and the experience of uncertainty*, 177–202. London: Karnac.
- Schore, A. N. (2014). Looking back and looking forward: Our professional and personal journey. *Neuropsychotherapist*, 10, 8–17.
- Schore, A. N., & McIntosh, J. (2011). Family law and the neuroscience of attachment, Part 1. *Family Court Review*, 49, 501–512.
- Schore, J. R., & Schore, A. N. (2008). Modern attachment theory: The central role of affect regulation in development and treatment. *Clinical Social Work*, 36, 9–20.

1

ALLAN SCHORE THROUGH THE LENS OF BOOK REVIEWS

With his (1991) essay “Early Superego Development: The Emergence of Shame and Narcissistic Affect Regulation” Allan Schore entered with a “beat of a kettledrum” into the scientific community. Since then his creativity, mental power and ability to approach new research with unusual openness for interdisciplinary thinking seems inexhaustible. This early essay contains, comparable with an overture of an opera, all the important and essential elements which he has worked through in the last 25 years. Three years later in 1994, this small but extraordinary creek became a mighty stream, developing into a powerfully flowing river that is continuously growing. With the publication of his first book *Affect Regulation and the Origin of the Self: The Neurobiology of the Emotional Development* (1994) a sequence of publications and presentations took a nearly incomparable course. In 2003, a double volume was published in which a selection of significant essays were collected – “Affect Dysregulation and Disorders of the Self” (2003b) and “Affect Regulation and the Repair of the Self” (2003a). The latter was translated soon after into a variety of languages including German, French, Italian, and Turkish, indicating the importance of his detailed work and the volume of his outstanding knowledge. In 2012 a fourth volume was published expanding his theories, *The Science of the Art of Psychotherapy*, which includes various and more recent essays. Worldwide, Schore is invited to present workshops as well as various lectures – in North and South America, Europe, Asia, and Australia. The acceptance and recognition of his work has been recognized with important honors, including an Award for Outstanding Contributions to Practice in Trauma Psychology from the Division of Trauma Psychology and the Scientific Award from the Division of Psychoanalysis of the American Psychological Association, Honorary Membership of the American Psychoanalytic Association, and the Reiss-Davis Child Study Center Award for outstanding contributions to Child and Adolescent Mental Health. In (2016), in testimony to the enduring recognition and influence of his seminal book, this publisher reprinted

Affect Regulation and the Origin of the Self as part of the Routledge Classic Editions Series.

Allan Schore is a clinical psychologist and neuropsychologist and has been working since 1971 in private practice as a psychoanalytic psychotherapist. He is member of a number of psychological, neuroscientific and psychoanalytic associations. He is editor, co-editor and member of the editorial board of more than 45 scientific journals in the Anglo-American language area. He has consulting and teaching functions in many clinical, teaching, and research institutes. As of the beginning of 2017 his works have been cited in over 15,000 references in Google Scholar.

The publications of his volumes has led to a variety of book reviews such as M. Solms (1997); J. Isroff (2006); D. L. Thiselton (2004); M. Richlin (2005); M. H. Spero (1996); V. Kraft (2008); Naumann-Lenzen (2008) and M. Stark (2015). All writers have emphasized unisono that Schore has investigated human development from the early beginnings in an outstanding depth and wide range by summarizing and integrating the growing body of literature in the fields of developmental neurobiology, infant and attachment research, and related disciplines relevant to the function of affect regulation. The resulting conceptualizations explicate in detail the precise mechanisms by which the infant's brain might internalize and structuralize the affect regulatory functions of the mother, which can be observed primarily in circumscribed neuronal tissues. These findings describe an essential finding in epigenetical history (Solms, 1997).

The abundance of evidence he presents to support the theses in his books has been characterized as "exorbitant." In *Affect Regulation and the Origin of the Self* more than 2300 publications were used and cited (Spero, 1996). In *Affect Regulation and the Repair of the Self*, Kraft (2008) has described the scale of the references as an "independent chapter." Schore follows his train of thought free from dogmatic limits and is therefore able to integrate a vast array of information which is organized in an overarching way. Due to its complexity most of the book reviewers noticed that a good range of theoretical expertise is required in order to understand the broad spectrum of neurological research, and that the book cannot be read "by the way" or casually. Some themes are repeated in different contexts for different purposes so that unavoidable redundancies occur. On the other hand this recursive nature may facilitate revisitation and familiarization of the complex approach and findings. In his review, M. Solms proposes that Schore has not integrated Freud's drive concept into the core of his affect theory and has therefore underestimated the relevance of mainstream Freudian psychoanalysis for modern neuroscience. Partly in response, in 1997 Schore wrote the essay "A Century After Freud's Project: Is the Rapprochement between Psychoanalysis and Neurobiology at Hand?" in the *Journal of the American Psychoanalytic Association*. There he traced affect research from Freud to the contemporaneous decade of brain research and pointed out that despite updated conceptualizations such as psychoanalytic self-psychology, Freud's concept of drive has not been ignored but transformed.

All book reviewers emphasized Schore's detailed and complex elaboration of his central theses that it is the mother-infant dyadic system which regulates the

infant's psychobiological states and that interactive affect regulating events act as a mechanism for the social constructions of the human brain. This central theme is first outlined in his first book, where he offers interdisciplinary data in order to explain the neurobiology of emotional development, i.e., the discovery of the right brain neurobiological base of attachment. The quality of the mother-infant affective dialogue imprints itself upon a complicated neurological network and acts as a growth-facilitating environment for the postnatal maturation of a corticolimbic control system in the right prefrontal cortex that mediates regulatory, homeostatic, and attachment functions. This intricate wiring of the circuits in critical periods of the infant's developing brain is responsible for the future socioemotional development of the individual. Certain areas in the brain that are specific for each developmental phase pass through growth spurts. This conceptualization made it possible to integrate the previous conceptual gap between "nature versus nurture."

With the first 1994 "voluminous opus magnum" (Naumann-Lenzen, 2008, p. 299 ff) Schore laid down a visionary and broad fundamental basis for his future research. The interdisciplinary perspective that integrated biology and psychology, as well as his creative and novel synthesis of various scientific disciplines in this and all of his later writings has given him the reputation of an "American Bowlby" as well as a comparison with Einstein (Issroff, 2006, p. 685).

In both of his volumes published in 2003, Schore scrutinized the clinical models of major twentieth century psychoanalysts, and utilized his interdisciplinary perspective to cast a modern neuroscientific view of the concepts of Sigmund Freud, Melanie Klein, Heinz Kohut, and John Bowlby, specifically on their thoughts concerning development, trauma, and restoration. More and more he focused on not only severe developmental trauma such as neglect, maltreatment and abuse, what he termed cumulative "relational" trauma, but also on the unavailability of a responsive attachment figure to comfort and regulate stress after more benign misattunements that are a daily part of the young child's experience. Furthermore he applied regulation theory and interpersonal neurobiology to the treatment of patients with a history of attachment trauma. Extrapolating the advances in mother-infant research, Schore offered the reader a clinical model of the affect regulating therapeutic relationship in which the patient undergoes a body-mind reorganization as he/she re-experiences in the patient-therapist transference-countertransference relationship his/her trauma and developmental arrests. With a focus on the expression and regulation of the patient's emotional (more so than cognitive) states and on the socioemotional communication and protoconversation between therapist and patient, developmentally oriented psychotherapy shifts from the talking cure to the communicative cure. Schore also emphasized that both Bowlby's attachment theory and Kohut's analytic self-psychology have contributed to this crucial paradigm shift in psychoanalysis.

Three years after the appearance of his next volume, *The Science of the Art of Psychotherapy*, in (2012) Martha Stark from the Harvard Medical School published a book review in which she emphasized that Schore, by dint of his meticulous

research and giftedness as integrative thinker, has earned the well-deserved distinction of being at the forefront of the affective neuroscience movement:

He manages to bring together the incisiveness and clarity of his analytical left brain with the creativity and synthetic ability of his intuitive right brain in the interest of capturing the beauty of something that few have dared to try and fewer still have been able to accomplish – to offer a compelling explanation for how exactly a psychotherapy works and what exactly its scientific underpinnings are.

(2015, p. 228)

Stark observes that Schore is highlighting a structural and functional difference between the two hemispheres and is appreciating their complex interdependence, complementarity, and synergy. His conviction, which is amply supported by exhaustive research, is that cognitive exchanges (a left brain function) between therapist and patient may well be necessary but rarely enough to effect enduring psychotherapeutic change. An affectively attuned psychotherapy will afford the patient an opportunity to rework relational trauma that had once been overwhelming but that can now, with enough affective support from the therapist, be processed, integrated, and adapted. Furthermore, Stark suggests that Schore goes to great lengths to stress the primacy of interactive regulation by both therapist and patient in the interest of creating transformative moments that will advance the therapeutic endeavor.

In Stark's view, Schore has made a masterful attempt to capture with words the essence of phenomena that are without words but she felt that his efforts to bring the clinical moment alive is only partially satisfying. She thought that the volume would have benefitted from the inclusion of more clinical examples that would have captured not just a moment in time but movement over the time. Finally, as others have mentioned earlier she described Schore's material as a bit redundant – although she personally found, as others do too, the repetitiveness to be reinforcing of his central ideas. To conclude, she emphasized that *The Science of the Art of Psychotherapy* is a must-read for health professionals and interested persons alike because "it is ultimately a book about what it means to be human and how it is that we can deeply and meaningfully connect to others" (p. 233).

To summarize these book reviewers, amongst many others, the description of Allan Schore as an unusual and creative scientist has been made repeatedly. He indeed has become a pioneer who has brought integrative psychodynamic psychotherapy into the 21st century. Convincingly, he has elaborated that the development of the self is a core issue of neuroscience and that the development of the self-structure is grounded in the caretaking affect regulation during the first year of life. The developing infant is existentially dependent on a maternal self object who unconsciously and right hemispherically "reads" the needs of the baby in order to regulate his emerging emotional states, which in turn allows for the imprinting of brain circuits that underlie the development of adaptive coping mechanisms. The major task of the maternal figure consists of vitalizing and soothing the infants in appropriate