

Critical Notice

The neurobehavioral and socio-emotional development of infants and children. By Ed Tronick. New York and London, Norton, 2007. £32. ISBN 13: 978-0-393-70517-1; ISBN 10: 0-393-70517-X.

For almost 40 years Ed Tronick has laboured to see inside the most powerful system in human life, the mother–infant relationship. Like many men before him – Piaget, Spitz, Winnicott, Bowlby, his mentors Bruner and Brazelton, and the more recent Trevarthen, Stern, Emde, Fonagy and Hobson – he is like the father looking on with utter fascination at the timings and mistimings of the partnership that determines so much of what follows. His method is meticulous, based largely in the laboratory. During the 1970s Tronick explored the effects on an infant of his mother’s motionless face, at around the same time that Colwyn Trevarthen and his then student Lynne Murray were investigating infant reactions to perturbations of maternal expression (Trevarthen, 1974), including ‘voluntary immobility’ (Trevarthen, 1977, p. 267). Tronick presented his face-to-face/still-face (FFSF) research paradigm in 1975 and published it in 1978 (Ch. 19). The mother is asked to look at the baby without altering her expression for a minute or so. The result is an infant that cannot hold himself together. He can see her but she does not do what he usually expects, which is to respond to his actions and moods in ways that help him to make sense of his own mental and physical states. The mutual regulation of emotional states is the focus of Tronick’s work, a science of intimacy.

There are 36 chapters and over 800 references, around one-tenth of which include Tronick’s name. Most of the chapters are papers published over the past two decades in peer-reviewed journals, including this one. There is something here for everyone, but more than enough for any one reader. In spite of repetition in successive papers, the story of intersubjective relationships develops compellingly. Readers of this journal who are sceptical of psychoanalytic concepts – even of attachment ones – will find Tronick’s approach systematic and persuasive. There is an enormous amount of statistical data, a methodological feast of carefully coded observations of mother–infant interaction broken down into minute parts. This is an independent model of attachment, owing more to Brazelton at the start than to Bowlby, who, he says, put too much stress on the protective function of attachment. Tronick shows how emotions qualify all development.

The mother–infant pair becomes ‘two interacting cybernetic systems’ (p. 250), ‘... the adult is part of

the infant’s regulatory system; as much a part as any internal regulatory process’ (p. 276). Their attunement, which is accurate to hundredths of a second, is far from constant, nor should it be. Around 70% of the time the couple are not synchronised (p. 203). ‘Far too often, we romanticise the mother–infant relationship and expect it always to be reciprocal’ (p. 217). On the contrary, says Tronick, ‘one can see that some amount of dissynchrony ... can have positive effects’ (p. 217). It is the mismatches and the intensely pleasurable reparations that follow – optimally every few seconds – that drive child development. In more recent years Tronick has explored how psychotherapy proceeds in a similar error-activated way. Both in child development and in therapy there is the potential for ‘a powerful experience of fulfillment as one paradoxically becomes larger than oneself’ (p. 292). ‘To rephrase Descartes, I interact, therefore I am’ (p. 408). Charles Darwin’s systematic observation of his son William aged 3 months provides possibly the first scientific account of the reconnecting process: ‘... he was exceedingly amused by a pinafore being thrown over his face and then suddenly withdrawn; and so he was when I suddenly uncovered my own face and approached his’ (Darwin, 1887). Tronick makes more of this. ‘The extent to which the infant is able to successfully repair interactive errors produces a sense of effectance, whereas an inability to successfully resolve them induces a feeling of helplessness’ (p. 204); ‘... the final withdrawing of the young infant when he no longer seeks to pull his mother into the interaction reminds us of the withdrawn behavior and huddled postures of isolated monkeys’ (p. 273).

If disconnections remain unrepaired the infant learns to expect failure as a matter of course. ‘Both partners become complicit in maintaining the disorganisation’ (p. 162). Depressed mothers play less with their babies, around 10% of the time compared with non-depressed mothers’ 42% (p. 187). Even when they are engaged, the responses of mothers who are depressed are ‘poorly timed and often intrusive’ (p. 172). The infant who has adapted to repeated disappointments devotes most of his efforts to regulating himself while monitoring his mother’s mental state, in effect becoming parentified (Macfie, McElwain, Houts, & Cox, 2005). This exhausts his capacities, leaving little space for ordinary social development. Although girls show greater vulnerability to intrusive mothering, Tronick notes that boys are more emotionally demanding from the start, and are more liable to become angry when their offerings are repeatedly misread. ‘Thus it is not aggression

per se that distinguishes boys from girls but their emotional regulatory differences' (p. 287), one source of the excess of psychopathology in boys (Kraemer, 2000). Prolonged mismatch has consequences for their physiological regulation, too, being detectable in higher heart rate and cortisol levels. Mind and body are not separate in the infant.

Though the laboratory studies are central to the book, there is much else besides. Tronick is a polymath, showing in a way rarely seen in British texts a familiarity with biochemistry, physiology (e.g., of milk fluid balance regulation), immunology, anthropology, philosophy, paediatrics, child psychiatry and psychology, systems theory, psychoanalysis and attachment theory. The first chapters are about Brazelton's Neonatal Behavior Assessment Scale (NBAS), the behaviour of premature babies, and the effects of maternal use of cocaine. There is a section of papers on cultural variations in maternal care. Gusii mothers of Kenya turn away just at the point the infant gets excited, effectively downregulating his state. 'The power of gaze in interpersonal relationships is seen in the elaborate Gusii belief system built upon concepts of the "evil eye" and the danger of being seen at vulnerable periods of life' (p. 136). 'Communication seems to be mediated through touch rather than gaze' (p. 138). Gusii culture requires tribal solidarity rather than individualism for its survival. In contrast, the Efe people pass their babies around, so that they become attached to many people (mostly women), but when inconsolable still need their mothers. These children are more socialised than in the West and at the same time protected from total deprivation in the event of the mother's death. Tronick cites the important point that 'child abuse is more likely to occur in societies where mothers are seldom relieved of their child care responsibilities' (p. 116). He also describes, with fine photographs, the manta pouch of the Quechua who live in the harsh high altitudes of southern Peru. This 'remarkable piece of cultural technology' (p. 133) keeps the child warm, humid and asleep in an enclosed space on his mother's back while she manages sheep and goats. In spite of relatively low oxygen and high carbon dioxide levels inside the

pouch, the child's development is slowed but not compromised. By 6 years these children are themselves able to take responsibility for the herd.

Some of the writing is awkward and the data dense, yet there are outstanding chapters: the introduction, 'the primacy of social skills in infancy', 'depressed mothers and infants; the failure to form dyadic states of consciousness', 'gender differences and their relation to maternal depression', 'dyadically expanded states of consciousness and the process of therapeutic change', and more. In a pouch inside the back cover is a DVD showing in a way that words cannot convey the powerful impact on the infant of the still-face paradigm, followed by some reflections from Tronick himself. 'When you reconnect ... you create something new ... you grow, and babies are about growing.' Get the book and look at this recording first. There is also a filmed demonstration of the Brazelton Neonatal Behavioral Assessment of substance-exposed infants.

While not a clinical text, one application of this monumental body of work is clear: 'clinicians should be alert to the possible need to direct intervention efforts to the mother-infant dyad, as well as the mother herself' (p. 303).

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