

to emphasize the essential neurophysiological difference between performing voluntary motor actions and being in a state of involuntary motion, e.g. due to reflex stimulation, which also give a stereotyped quality to such involuntary motions.

Of KORNER and GROBSTEIN's⁹ work only a non-essential part is quoted (holding the baby in the vertical position), while essential qualifying statements are omitted by ZELAZO et al.⁷: "Walking activity ... was prevented by the motor restraint imposed by being held to the shoulder ... resulting in the state of alert inactivity. In fact, by preventing the distracting effects of the infant's motor activity, the physical restraint may have enhanced the likelihood of alert behavior", according to KORNER and GROBSTEIN⁹. Such a situation constitutes an extreme opposite to the elicitation of stereotyped reflex motions, yet ZELAZO et al.⁷ cite this in support of newborn 'walking' exercises!

Characteristically and in line with the present discussion about environmental interference with e-r factors, ZELAZO et al.^{4,7} claim that ultimately the normal development of voluntary walking is accelerated in their 'exercized' newborns. However, ZELAZO et al.⁷ state that the Babinsky reflex later disappeared in their 'exercized' Ss at a 'normal age'. This would in essence contradict ZELAZO's⁴ claim that these Ss showed *precocious* 'instrumental control of walking'⁴. The Babinsky reflex disappears only with the maturation of the pyramidal tracts. The normal age for this to occur is only about 11 months of age. Had these 'exercized' Ss indeed showed *precocious* 'voluntary walking'⁷, their Babinsky reflex also would have to disappear *precociously* and not at a normal age! (There appears to be also wishful thinking at work in the parents of these 'exercized' Ss, of which over 80% claimed that their newborns 'smiled' during the 'walking'. However, the full open mouth smiling response occurs only as a rule very close to three months of age!)

In an attempt which appears to indicate that ZELAZO et al.⁷ even strive ultimately to go beyond the control of 'walking' in the newborn (— if ever they could —), they further cite PIAGET's^{10,11} theorizing about the develop-

ment of 'sensorimotor intelligence', where the infant's reflexes become gradually integrated into voluntary motor actions. Such an attempt⁷, however overlooks that PIAGET's^{10,11} observations are only about reflexes of the *upper* part of the infant's body. This does not appear to be accidental, because its neurological substratum matures much earlier than that of the *legs*. Furthermore PIAGET^{10,11} does not mention reflexes which served their main function during *intra-uterine* life, and which need external postural assistance for their elicitation post-natally. (A few months after birth the 'walking' reflex becomes suppressed through cortical inhibition. It had apparently served survival in utero by helping to bring the head into the vertex position¹², the most propitious presentation to be born in.)

These researchers⁷ in their quest 'to dispel the myths concerning motor development in infants'⁷ are facile in attaching labels to the raising of neuro-ethical questions, which point to potential obstacles in their way: They even refute as 'poor data' questions raised on the basis of clinical (fortunately — at the present state of our knowledge in this area — *not* experimental) findings of detrimental effects of the use of 'baby-walkers' and 'baby-bouncers'¹³ even in children older than newborn.

What could be at the basis of emotional judgements entering a discussion of the newborn's motor development? It appears that the positions of 'nativists' vs. 'environmentalists' tend to clash where the possibility of an integrated position is neglected: the acceptance of genetically programmed e-r *potentials*, which need to meet with environmental stimuli, usually around an *optimal* period of time, in order to become actualized.

Any environmental manipulation of e-r factors, in order not to be potentially harmful to the neurologically immature child, would have to take place only during optimal periods of time, e.g. when the neurological substratum has matured in an appropriate way to deal in an integrating manner with the environmental manipulation.

It seems ironical that those environmentalists, who apparently fear a limitation of their control if they would concede potentially 'innate' (more precisely: environment-resistant, e-r) factors, are the ones, who by attempting over-control, could actually lose control, because the consequences of such over-control are not known.

ANNELIESE A. PONTIUS

New York University, School of Medicine,
550 First Avenue, New York (N.Y. 10016, USA),
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⁹ A. KORNER and R. GROBSTEIN, *Child Devel.* 37, 867 (1966).

¹⁰ J. PIAGET, *The Origins of Intelligence in Children* (Int. University Press, New York 1952).

¹¹ J. PIAGET, *The Construction of Reality in the Child* (Basic Books, New York 1954).

¹² W. LANGREDER, *Dt. med. Wschr.* 74, 661 (1949).

¹³ M. J. SIMPKISS and A. S. RAIKES, *Lancet* 7753, 747 (1972).

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