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THE LINK BETWEEN GAZE AND NEONATAL IMITATION IN THE DEVELOPMENT OF MACAQUE SOCIO-COGNITIVE SKILLS

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We recently showed in macaques that there is a link between the capacity at birth to match self and others' gestures (i.e. neonatal imitation) with the development motor skills. We hypothesized that an action-perception mechanism at birth could be predictive of a more general developmental pattern related to specific socio-cognitive skills. Among these skills the capacity to follow the gaze of others in primates has been considered to be and important developmental landmark. We have tested two cohorts of nursery-reared rhesus macaque infants who were assessed for neonatal imitation skills when 1 week old and on a gaze following task when 9 months old. Preliminary data show that a simple torso and head -turn cue, elicited low levels of gaze following in infants who did not imitate facial gestures. When using a more advanced head-turn only, particularly high levels of gaze following were found in infants who had shown high levels of neonatal imitation and had been reared with constant contact to other infants. Together these results suggest that the capacity to match self and others' behavior is somehow linked with other social competences that are expressed later in development and probably rely on mirror mechanisms that either overlap in the brain and/or are communicating within a functional network.

Keywords: neonatal imitation mirror neurons gaze cognition