

# Haptic behavior in social interaction

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Touch “*is the core of sentience, the foundation for communication with the world around us, and probably the single sense that is as old as life itself.*” Indeed, touch is “*the most intimate of senses*” [1].

From infancy to adolescence and through all of life, interpersonal haptic behavior plays a vital role in our lives. Human haptic behavior extends far beyond the sensory world to every aspect of the social world. Interpersonal touch expresses warmth, affection, intimacy, immediacy, and love [2–4] but can also threaten and even injure. Haptic behavior also plays a central role in promoting health and happiness throughout the lifespan [1, 5–8]. Within social relationships, touch differs based on sex differences and relational stage. Cultural differences in touch also exist. Finally, sometimes touch is avoided, either because people have a predisposition that causes them to be touch avoidant, or because there is a taboo against touch. These issues are explored in this chapter, starting with the social significance of touch.

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## The social significance of touch

Experts believe that touch is the first sense to develop and the last sense to depart when we die [1]. From the time babies are in the womb, tactile stimulation plays a critical role in human development. Touch provides a channel for connecting to others and learning about the world. As Moszkowski and Stack [9] noted, “*touch is an important modality through which infants and mothers communicate; it is also a vital means through which infants self-regulate and explore their surroundings*” (p. 307). People who are deaf

or blind are able to adapt to the loss of these senses and lead healthy, productive, and socially meaningful lives, but “*an existence devoid of tactile sensation is another matter; sustained physical contact with other humans is a prerequisite for healthy relationships and successful engagement with the rest of one’s environment*” (p. 28) [1]. Children who are deprived of contact with others are disadvantaged socially, emotionally, cognitively, and physically.

## Emotional, cognitive, and physical development

Considerable work has focused on the importance of touch for emotional and physical development in young human children and other primates. Harlow’s classic work compared baby monkeys’ preferences for nourishment *versus* contact comfort [10–12]. Harlow and his team raised baby monkeys in isolation from their mothers. They provided the baby monkeys with two types of ‘surrogate’ mothers, one had a hard wire body but contained milk while the other surrogate mother did not have any food, but was covered in soft terry-cloth that was warmed from a light bulb inside its body. Consistently, Harlow and his colleagues found that the baby monkeys preferred the warm and soft surrogate mothers and only went near the wire surrogates when they were hungry. The baby monkeys in this experiment were also unusually aggressive toward themselves and others, suggesting that being deprived of contact with real monkeys adversely affected their behavior.

Contact is just as important for humans. Montagu and Spitz summarized some of the

earliest and most compelling research supporting the link between health and touch in young children [7, 13–14]. This research, which came from records of 19th and early 20th Century orphanages and children's hospitals, showed that around 30–40% of infants in these institutions died before their first birthday, with many other children dying sometime later in early childhood. Those who did survive tended to be plagued with psychological and physical problems the rest of their lives.

Lack of touch appears to be a proximal cause of these high mortality rates. Although most of these children received adequate food and shelter, they were seldom held by caregivers who were stretched thin trying to attend to the large number of infants in these institutions. This lack of tactile stimulation produced physical symptoms such as lethargy, non-responsiveness, self-aggression (e.g., biting self, hitting one's head against the crib), and repetitious or anxious behavior (e.g., constantly rocking back and forth; laying in a fetal position all day). These symptoms, plus depression, a lack of motivation to live, and crowded conditions, likely made these children more susceptible to diseases. Sometimes, however, there was no readily apparent cause for death, with children simply shutting down and dying. Montagu referred to this ailment as *marasmus*, which means that a person literally 'wastes away'.

Research on institutionalized children as well as feral children (i.e., children who are isolated or raised with animals rather than humans) also provides evidence that people's brains develop differently when they are deprived of human interaction. Several studies have shown that children are especially likely to suffer from decreased cognitive ability when they have spent long periods of time in neglectful environments. For example, neglected children fare better the sooner they are placed with a nurturing family [15–17]. Dennis found that the earlier children were adopted and taken away from a neglectful environment, the higher their IQ scores were in adolescence [18]. Children adopted before the age of two had an average IQ of above 100; those

adopted between the ages of two and six had an average IQ of about 80; and those who remained in institutions had an average IQ around 50. Gerhart suggested that affectionate interaction with caregivers is critical for healthy brain development during the first 18 months of life, especially in terms of developing pathways for understanding social and emotional processes [19].

When researchers compare magnetic resonance images (MRIs) of brains of neglected children *versus* children raised in nurturing environments, they uncovered startling differences. The brains of the neglected children are smaller and not as well developed [20], with some studies suggesting that children who are rarely touched have brains that are about 20% smaller than children who receive frequent affectionate touch [21]. Children who grew up in isolation or lived with animals in the wild are likely to suffer especially significant cognitive problems, including difficulty with basic language skills. For example, one famous case of a feral child named Genie, who was locked up in a dark room alone for over 10 years, showed that it was impossible for a child to recover – both in terms of social competence and language development – after such a long period of isolation [22]. Feral children's brains also are especially underdeveloped in areas of the brain that process language and children raised in isolation also have severe problems adjusting to social interaction. Feral children who were raised with animal families (such as wolves or dogs) are more likely to acquire some of the social skills necessary to interact with humans, such as empathy and the ability to show affection.

Finally, touch has benefits for low-birth weight infants and other young children with health issues. Weiss, Wilson, Morrison, and Delmont videotaped mothers feeding their 3-month old low-birth weight infants and then checked back to see how the children were doing when they were one year old [23]. They found that children had better visual-motor skills and gross motor development if their mothers had used more stimulating touch when feeding them. Other research has shown that premature babies who