

Haptic behavior in social interaction

Peter A. Andersen and Laura K. Guerrero

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.

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

are massaged by nurses gain more weight and are released earlier from the hospital than are babies who are not massaged [21]. Healthy babies also benefit from frequent and appropriate levels of tactile simulation [24].

Attachment

Secure attachments are another ingredient in the recipe for healthy social and physical development. Research on attachment originated with Bowlby's work [25–26]. Based on his own observations of institutionalized children, Bowlby concluded that deprivation of maternal contact has life-long consequences for humans [27]. Children who were separated from their mothers often showed distress, followed by detachment and/or ambivalence. When the separation continued over time, children become increasingly aggressive and/or avoidant. Bowlby believed that humans have an innate and adaptive propensity for forming attachments with others. In his view, humans are hard-wired to engage in proximity-seeking behaviors that help them develop and maintain healthy attachments with other people from childhood through to old age. When attachment bonds do not develop properly in early childhood, children become insecure, have more unresolved nightmares, and have negative perceptions of themselves and/or others.

Children who form secure attachments with their caregivers learn to trust others, explore their environments freely, and develop multiple attachments to various people across the lifespan [28]. Those who are unable to form secure attachments are likely to avoid, fear, or obsessively search for intimacy and emotional closeness with potential attachment figures [29]. According to attachment theorists, interaction with caregivers provides a foundation for later attachments. Young children are most likely to develop a secure attachment style when the caregiver is attentive, responsive, and sensitive to their needs. An avoidant attachment type can emerge as a defense mechanism against neglect or over-stimulation, and anxious attachment

is often the product of inconsistent parental communication (i.e., the caregiver is neglectful sometimes but loving other times). Research has shown that more than 85% of children who are abused or neglected have disorganized or insecure attachment styles even after they have been removed from the negative environment [30–31].

Although research suggests that attachment styles can be modified based on new experiences and social interactions, securely attached children are still more likely to develop secure attachments with others as adults than are insecurely attached children [32]. In romantic relationships, adults who have secure attachment styles are more likely to use a variety of affectionate behaviors, including touch [33–34]. Research also suggests that people who have positive recollections of being cuddled, hugged, and touched in other positive ways by caregivers when they were children tend to have happier relationships [35] and to be more self-confident as adults [36].

Touch in social and personal relationships

Touch is certainly a critical component of healthy child development; it is also highly consequential in adulthood. Haptic behavior conveys a myriad of messages, ranging from comfort, love, and sexual interest to violence and dominance [37–38]. Patterns of touch have also been shown to vary based on sex (i.e., men *versus* women) and type of relationship.

The bright side of social touch

Affectionate touch is an important immediacy behavior that reflects physical and psychological closeness [39], helps maintain relationships [40], and can directly and unambiguously communicate one's feelings [3]. Adults who give and receive affectionate communication, including



FIGURE 1. AS DEMONSTRATED BY THESE SISTERS, TOUCH IS A BONDING GESTURE THAT COMMUNICATES PHYSICAL AND PSYCHOLOGICAL CLOSENESS AS WELL AS INTERPERSONAL WARMTH.

touch, tend to report and exhibit more physical and mental health [41–42]. When people give or receive affection, stress-related adrenal hormones tend to decrease, while oxytocin tends to increase [3]. Oxytocin is a hormone associated with lactation, sexual satisfaction, and positive moods. Thus, heightened levels of oxytocin can occur in response to various types of touch, ranging from hugs, to breastfeeding, to sexual activity. In medical settings, touch by nurses appears to have a calming effect that reduces patient anxiety [43–44].

Haptic behavior also constitutes the primary way that people communicate comfort. In one study, Dolin and Booth-Butterfield had college students describe what they would do to comfort a roommate who was going through a distressing romantic breakup [45]. The vast majority of respondents mentioned touch as a way of comforting their roommate. The most commonly mentioned behavior was hugs, followed by pats on the arm or shoulder. Other forms of haptic behavior reported included holding the

roommate's hand, letting the roommate cry on one's shoulder, and stroking the roommate's hair. Clearly, touch is an important means of communicating comfort.

The dark side of social touch

On the opposite end of the spectrum, violent touch can have a host of deleterious effects on people and relationships. Such touch is not uncommon. Estimates suggest that around 16% of married couples, 35% of cohabiting couples, and 30% of dating couples can remember at least one time in the past year when violent touch was used in their relationship [46], with behaviors such as shoving, pushing, grabbing, and shaking particularly prevalent [47].

Sometimes violent touch is used as a form of *intimate terrorism* that occurs when one partner (usually the male in a heterosexual relationship) intentionally and strategically uses violent touch (and threats of violent touch) to control the other partner [48–49]. Other times violent touch occurs less strategically as part of *common couple violence* where partners resort to violence as a way of trying to gain control of an argument (rather than control of the other person). Often, common couple violence is the result of an escalation of conflict and is less severe than intimate terrorism [38]. Violent touch is also associated with deficits in interpersonal skill, with people more likely to resort to violence when they do not have the communication skill necessary to manage the conflict [46].

Differences in touch based on sex and relational stage

Considerable research has investigated whether men and women differ in terms of how much touch they give and receive. Some studies have found that men initiate more touch in public settings and professional contexts [50–51], but reviews of literature have shown that, in general, women tend to give and receive touch more than

men [52]. One reason behind this finding is that touch between male friends is less acceptable in US society than is touch between women or opposite-sex friends or partners. Interestingly, however, Floyd's work has shown that femininity and masculinity are not related to affectionate communication as one might expect [3]. Floyd's work showed that feminine individuals are likely to report using affectionate behavior, as one would expect, but so are masculine individuals (albeit to a lesser extent). Perhaps men who are comfortable with their masculinity feel free to show affection, including touch, without worrying about being stereotyped as unmanly.

In heterosexual romantic relationships, whether men or women touch more appears to be partially dependent on relational stage and age. Three observational studies of public touch showed that men are more likely to initiate touch in the beginning stages of relationships [53–55]. In Guerrero and Andersen's study, couples were unobtrusively observed as they stood in lines at movie theaters or the zoo [53]. A team of coders began observing the couples when they first started standing in the line. After touch patterns were recorded, the researchers approached the couple and asked them a few questions about their relationships. Men were likely to have initiated the first touch if the couple described themselves as in a new or casual dating relationship. Conversely, women were more likely to have initiated the first touch if the couple was married. Guerrero and Andersen suggested that social norms dictate that men have the prerogative to initiate touch in the beginning stages of a romantic relationship, but women, who often focus more on maintaining intimacy in their relationships, are more likely to touch once the relationship has become intimate and committed.

The Willis and Dodd study produced similar findings [55]. Men under the age of 20 who were in the early stages of a romantic relationship initiated the most touch. Women in their 40s were more likely to initiate touch than women in their 20s or 30s, especially if they were in a stable relationship. Another study by Hall and Veccia

demonstrated that although men and women touched each other equally overall, age made a difference – men under 30 years of age were more likely to initiate touch than were older men [56].

Couples also display different levels of touch based on relational stage. Guerrero and Andersen's observational study showed that couples in serious dating relationships displayed twice as much touch as couples in casual dating or married relationships [57]. Yet spouses in married relationships were most likely to reciprocate (or match) one another's touch. In serious dating or escalating relationships, people may use touch to show their budding commitment to one another and to let others know that they are a couple. Thus, touch may be a means of escalating a relationship. For married couples, such touch may be superfluous; instead spouses may show intimacy through especially high levels of reciprocation. McDaniel and Andersen replicated these same findings of a curvilinear relationship between touch and relational stage with an international sample during airline departures [58]. Additionally, Emmers and Dindia also replicated these findings by investigating reports of private touch. In their study, couples reported the most private touch when they thought their relationships were moderate to moderately high in intimacy [59]. At very high levels of emotional intimacy, couples reported that private touch leveled off or dropped somewhat.

Cultural differences in haptic behavior

In addition to sex and relational stage, culture exerts a substantial influence on haptic behavior. As a result haptic interpersonal behavior varies considerably around the world from culture to culture [60–63] in terms of type of touch, location, total amount, and whether touch is manifested in public or private [58, 64–65]. The consensus of these studies is that the least haptically active region on earth is Asia, including Myanmar – formerly Burma – China, Hong Kong, Japan, South Korea, the Philippines, Taiwan, Thailand, and Vietnam [58, 65–67]. Northern

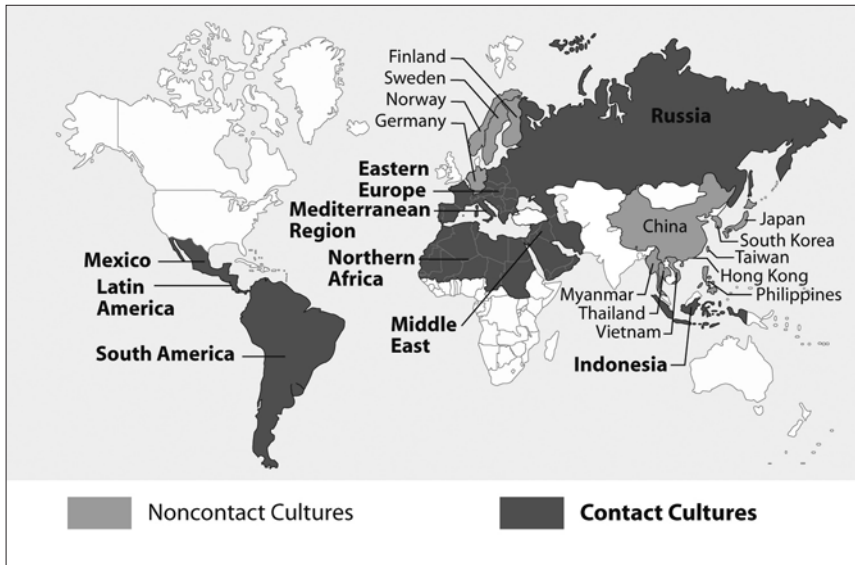


FIGURE 2. IMMEDIACY ORIENTATIONS OF SELECTED COUNTRIES AND REGIONS

European cultures, such as those from Finland, Germany, Great Britain, Norway, and Sweden are also relatively low in contact (albeit not as low as Asia). Anglo-Americans, the primary culture of the United States, and Canada are also among the least interpersonally haptic regions.

Countries where people display high levels of haptic activity and close interpersonal distances have been labeled contact cultures [61]. The Mediterranean region including France, Greece, Italy, Portugal, and Spain, along with most of the Latin America region, are the most interpersonally haptic active areas of the world. High levels of interpersonal haptic behavior have also been observed in most Arab countries (including those in northern Africa), Eastern Europe (including Russia) and Indonesia, where touch between members of the same sex (and especially between men) is expected and acceptable even though public touch between members of the opposite sex is sometimes taboo [65, 68–71]. Australia and the United States are moderate in their haptic contact level. Why is this the case?

As shown in Figure 1, with the exception of Eastern European countries, low-contact cultures are generally located in cool climates far-

ther from the equator cluster whereas high-contact cultures tend to cluster in warmer locations. These latitudinal explanations for differences in haptic behavior include variations in energy level, climate, and metabolism [72–73]. In cooler climates the long harsh winters tend to create a more task-oriented culture whereas cultures in warmer climates tend to be more interpersonally oriented and interpersonally ‘warm’. Warmer latitudes tend to host higher-contact cultures even within the United States [73], with students at sun-belt universities more touch-oriented than those in the frost belt. Similarly, Pennebaker, Rimé, and Blankenship [74] concluded:

“Logically, climate must profoundly affect social processes. People living in cold climates devote more time to dressing, to providing warmth, to planning ahead for food provisions during the winter months. ... Those living in warmer climates wear fewer clothes... and are more likely to see, hear and interact with their neighbors year ‘round.” (p. 329)

It is no coincidence that the most haptically active cultures are located nearer the equator where both skin and other people are more visible and available.

Touch avoidance

Just as cultural differences exist in touch, individual differences do as well. Due to both genetic and cultural factors some individuals are touch avoidant whereas others approach touch positively. If touch is as valuable and important to our social life as the previous discussion suggests, then avoiding touch would affect our self and our relationships with others in powerful ways. For several decades we have been exploring the mysteries of touch avoidance and have learned a lot about it.

The roots of touch avoidance research go back four decades to the work of Jourard who found men and women show a consistent trait of more or less 'touchability' that is an important communication predisposition and would affect the nature of their interpersonal relationships [75–76]. Investigating and measuring touch avoidance began by the mid 1970s [60, 77].

Touch avoidance is an attitudinal predisposition against most forms of interpersonal touch [60, 77] that has consistently been associated with less touch [53, 57], negative reactions to actual touch [78], greater interpersonal distances [79], reduced intimacy [80–83], less self disclosure [60, 84], and less relational satisfaction for oneself and one's partner [53, 85].

Two dimensions of touch avoidance have been revealed, a same sex dimension and an opposite sex dimension [60, 67, 77]. Relatively older individuals are more touch avoidant although it has not been established if this is a maturation effect or a cohort effect [60, 86]. Since it is primarily opposite sex touch avoidance that is associated with age, suggests a hormonal explanation; younger people in their prime reproductive years are more likely to approach opposite sex touch rather than avoid it [87]. But we may also be socialized to avoid touch as well, particularly same-sex touch. Same sex touch avoidance is, in part, a function of homophobia [88].

Touch avoidance is negatively related to self-esteem. Research suggests that children who have nurturing parents may be less touch avoidant, be more socially confident, and more

socially skilled [60, 84]. A stereotype exists that individuals with high self-esteem are standoffish and aloof, but these results suggest the opposite; people who are comfortable with themselves are more comfortable with touch.

Across the touch avoidance literature and across the regions of the United States as well as European and Asian populations, males have consistently been found to be more avoidant of same-sex touch whereas females are more avoidant of opposite-sex touch [53, 57, 60, 67, 84]; an exception to this pattern may be found in Arab cultures, where male-male touch is frequent and acceptable. An alternative way of understanding this finding is that people from many different cultures avoid males. This cross cultural finding may be due to the fact that women throughout the world have greater consequences associated with sexual activity than men [89]. However, Crawford found that androgynous men had significantly lower same sex touch avoidance than very masculine men [90]. Likewise, Eman, Dierks-Stewart and Tucker found that androgynous and masculine individuals are less touch avoidant than feminine individuals, especially in opposite sex touch [91]. This suggests that more masculine individuals are socialized to engage in opposite sex touch but not same sex touch.

Touch taboos

One of the paradoxes of touch is that because it is such intimate, involving behavior, much of it is prohibited or constrained. In North America and Northern Europe, there are a number of haptic behaviors that constitute tactile transgressions and should be avoided [65, 92–93]. As we previously discussed, substantial cultural differences in tactile behavior make generalization to the entire world risky. However, the following nine principles, taken from Andersen and Jones, are helpful in understanding common touch taboos [65, 93].

The first principle is that touch must be relationally appropriate. Touch between supervisors and employees or among strangers may be exces-

sively intimate and threatening. Too much touch on a first date can be relationally inappropriate and threatening. Nonfunctional touch should be avoided since it is perceived as excessively intimate and creates negative attributions.

Second, hurtful touches should always be avoided. This includes bone-crushing handshakes, play wrestling that gets too realistic, and aggressive nonconsensual sexual behavior. Even accidental touches such as bumping into someone or stepping on their toe are considered a tactile transgression that requires an apology.

Third, it is best to avoid startling another person with haptic behavior. Sometimes people try to startle friends as a joke, but most people do not think it's funny. Such inappropriate touches can cause relational problems and create undue anxiety for the recipient.

Fourth, touch should not be used to displace or relocate another person. Grabbing a spouse by the hand and dragging them along to speed them up or moving a person out of the way with a hand on the back in a crowd can produce surprisingly strong negative reactions. In most places a person has a right to the territory they presently occupy and relocating them is a tactile transgression.

Fifth, touches should not interrupt other people. Kissing your wife or husband during a phone call, hugging a child in the middle of his or her homework, or fondling your lover in the middle of a favorite television show are perceived as annoying rather than affectionate. Particularly annoying is the buttonholing technique where a person touches another person who is engaged in a conversation to get her or his attention.

Sixth, critical statements should not be accompanied by touch. Such a 'double whammy' is unsupportive and often perceived as unnecessarily aggressive or condescending. Imagine someone patting your arm while saying, "*You need to work harder if you hope to write a good report*". Even if the person used touch to try to soften the comment, it could be perceived as condescending or contemptuous.

Seventh, it is important to consider the situation where touch occurs. It may be fine to kiss

one's spouse in the bedroom but maybe not in the boardroom or the classroom. Many people are uncomfortable with public displays of affection, so it is important to avoid certain types of touch in public settings unless you know how your partner will react.

Eighth, avoid touch that other people can interpret as unenthusiastic or insincere. This is particularly true of handshakes and hugs. A limp wristed handshake or an unenthusiastic hug is worse than not touching at all. Such half-hearted haptic displays send decidedly negative interpersonal and relational messages.

Finally, people should refrain from touches that other people perceive as inappropriate. Previously we documented the fact that various cultures, different families, and individuals have diverse tactile preferences. It is the touch initiator's responsibility to avoid bothering anyone haptically. People should refrain from any touch that the receiver dislikes, rebuffs, or asks to be stopped. Remember, "no" means no. Respect people's right not to be touched.

Summary

Haptics go beyond sensation or perception; touch is a fundamental part of human relationships and has the power to attract or repel, help or hurt, love or wound. Within social relationships, touch differs based on sex differences and relational stage. Various cultures perceive touch in a variety of disparate ways. While most people seek touch with loved ones and close friends, many people avoid touch, especially with strangers but even in close, intimate relationships. Beyond cultural rules about touching, touch avoidance, an interpersonal predisposition that causes some people to dislike and avoid touch, can have negative effects that undermine their closest relationships. In short, haptic behavior is the *sine qua non* of interpersonal interaction in all close relationships and perhaps the most basic and fundamental form of human communication.

Selected readings

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