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The Biology Of Affection

Kory Floyd and Colter D. Ray

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Summary and Keywords

Affectionate communication comprises the verbal and nonverbal behaviors people use to express messages of love, appreciation, fondness, and commitment to others in close relationships. Like all interpersonal behaviors, affectionate communication has biological and physiological antecedents, consequences, and correlates, many of which have implications for physical health and wellness. Investigating these factors within a biological framework allows for the adjudication of influences beyond those attributable to the environment. In particular, there are observable genetic and neurological differences between individuals with a highly affectionate disposition and those less prone to communicating affection, suggesting that variance in the tendency to engage in affectionate behavior is not entirely the result of environmental influences such as enculturation, parenting, and media exposure. In addition, the expression of affection is associated with markers of immune system competence and appears to help the body to relax and remain calm. The biological effects of affectionate communication are perhaps most pronounced in situations involving either acute or chronic stress. Specifically, highly affectionate individuals are less likely than others to overreact physiologically to stress-inducing events. Whatever stress reaction they do mount is better regulated than among their less affectionate counterparts. Moreover, highly affectionate individuals—or simply those who receive expressions of affection prior to or immediately following a stressful situation—exhibit faster physiological recovery from their elevated stress. Perhaps unsurprisingly, therefore, being deprived of adequate affectionate communication is predictive of multiple physical and psychological detriments, including elevated stress and exacerbated depression, social and relational problems, insecure attachment, susceptibility to diagnosed anxiety and mood disorders, susceptibility to diagnosed secondary immune disorders, chronic pain, and sleep disturbances.

Keywords: affection, health, biology, evolutionary psychology, hormones, immune system, affection deprivation

The Biology of Affection

Besides being cultural, social, political, economic, and religious beings, humans are also biological beings. As such, they are subject to their anatomical affordances and limitations and are affected by a host of physiological processes. These observations are largely uncontroversial when applied to some human behaviors, such as eating or exercising. They are frequently overlooked in examinations of social behavior, however, which is often presumed to be the exclusive province of nurture rather than nature.

A growing body of empirical work is challenging that presumption, however. As this article details, the communication of affection—which is among the most potent behaviors for the formation and maintenance of close relationships—has multiple genetic, neurological, hormonal, immune, and nervous system connections. This article begins by offering propositions regarding the adaptive nature of affectionate communication, which imply its biological roots. A brief primer to biological inquiry regarding communication behavior is then offered, followed by an explication of several lines of inquiry in to the biological causes, outcomes, and correlates of affectionate communication. This article concludes with suggestions for a broader application of the biological paradigm in the study of human social behavior.

The Evolution of Affection

Humans are a supremely social species. Unlike some of our primate cousins, who meander the world in gratifying solitude, we have a pervasive need to belong that motivates us to form, maintain, and protect close relationships, as well as to mourn their loss. Indeed, among the antecedents of individual happiness and life satisfaction, the presence of close relationships invariably ranks near the top of the list for predictive power (e.g., Demir & Weitekamp, 2007). According to Baumeister and Leary (1995), humans have a fundamental drive to belong that motivates them to seek, form, maintain, and protect strong social relationships.

Our need to belong explains why a lack of meaningful relationships is so detrimental to well-being. A formidable body of research confirms that experiencing social exclusion (Baumeister, Brewer, Tice, & Twenge, 2007), chronic loneliness (Cacioppo & Patrick, 2008), bullying (Hansen et al., 2006), stigmatization (Smart Richman & Leary, 2009), and ostracism (Oaten, Williams, Jones, & Zadro, 2008) are associated with a range of mental and physical problems. Such problems include depression (Leary, 1990), abuse of alcohol (Åkerlind & Hörnquist, 1992) and drugs (Orzeck & Rokach, 2004), obsessive gambling (Trevorrow & Moore, 1998), obesity (Hawkley & Cacioppo, 2010), cardiovascular problems (Sorkin, Rook, & Lu, 2002), and suicide ideation (Stravynski & Boyer, 2001). After reviewing more than 60 published studies on the topic, House and colleagues concluded that a lack of strong, positive relationships is as potent a risk factor for premature death as cigarette smoking, obesity, and hypertension (House, Landis, & Umberson, 1988). In fact, simply lacking social contact—whether in the context of close relationships or not—is physically and psychologically damaging, which explains why the harshest punishment issued in penitentiaries is solitary confinement (Arrigo & Bullock, 2008).

When it comes to forming and maintaining satisfying personal relationships, few behaviors play as unparalleled a role as the communication of affection (see, e.g., Denes, 2012; Horan, 2012; Mansson & Booth-Butterfield, 2011). Individuals frequently use affectionate expressions to initiate close relationships or to accelerate their development; spouses and romantic partners often remember the first time they kissed or said "I love you" as a significant turning point in their relational progress (see Owen, 1987). On the contrary, a lack of affectionate behavior coincides with relational distress and complaints (Coyne, Thompson, & Palmer, 2002) and may actually precipitate relational dissolution in both heterosexual (Gottman & Levenson, 1992) and homosexual pairs (Gottman et al., 2003).

Affectionate communication comprises those behaviors that encode messages of love, appreciation, fondness, and commitment (Floyd, Hesse, & Generous, 2015), so it is unsurprising that it plays a central role in the development and quality of close relationships. Through expressions of affection, people connote that they care for their relational partners—whether romantic, platonic, or familial—and that they feel dedicated to those relationships, all of which further the goal of sustaining meaningful interpersonal bonds (see Floyd, IN PRESS-a).

Given that the highly social nature of the human species makes relationship formation an imperative, and given that affectionate communication advances that imperative, Floyd (2006A) proposed that the propensity to express affection is evolutionarily adaptive. Floyd's affection exchange theory purports that those with a stronger tendency to convey affection are advantaged in terms of survival (via the formation of mutually protective close relationships) and procreation (via reproductive opportunities in established sexual relationships). To the extent that such a tendency is genetically heritable, it would therefore be "selected for" by the processes of natural and sexual selection because of the advantages it offers. Recent research (e.g., Floyd & Denes, 2015) suggests a partial genetic basis for the propensity to express affection, which implies that it is at least partially heritable and therefore subject to natural and sexual selection pressures (see Floyd, IN PRESS-b).

Floyd (2006A) argues that as with other fundamental human needs—such as food, water, and sleep—the need for close relationships is physically rewarding when met and physically aversive when thwarted. If true, this would explain why giving and receiving expressions of affection—at least in the context of positive relationships—are associated with sensations of physical reward, such as warmth, serenity, and reduced pain and stress (Floyd, Hesse, & Pauley, 2009). In the same way that physical reward follows eating when one is hungry, drinking when one is thirsty, and sleeping when one is fatigued, communicating affection feels rewarding because it serves a fundamental human need for close interpersonal connections. For these reasons, therefore, it is reasonable to expect that affectionate behavior *feels good to people* because it *is good for them*.

These observations make room to understand affectionate communication as a biological behavior. The next section delineates the parameters of a biological frame for communication and explains how affectionate behavior can be understood in terms of its biological antecedents, correlates, and consequences.

Understanding Communication from a Biological Frame

Floyd and Afifi (2011) asserted that "all interpersonal communication acts are biological acts" (p. 87). Such a contention is virtually self-evident when one considers that no communicative behavior (verbal or nonverbal) can be enacted without the direct intervention and interaction of various anatomical and physiological systems. To say "I love you," for example, requires coordination between the cerebral cortex, spinal cord, and respiratory system, as well as the laryngeal complex and the muscles of the tongue, soft palate, and lips. To decode such an expression relies on the interaction of the tympanic membrane, the auditory ossicles, and the cochlea, as well as the spinal cord and cerebral cortex. Expressed simply, no communication is possible without biology.

To understand communication from a biological frame does not deny the fact that many communicative acts are also cultural, historical, political, religious, economic, and aesthetic. These are all pervasive influences on communication and social behavior. Rather, examining communication as a biological act means considering the mechanics of its production (i.e., which anatomical structures and physiological processes are necessary to enact the behavior) as well as its biological causes, outcomes, and/or correlates. As described above, the phrase "I love you" requires specific biological systems and events to encode and decode, but its enactment may be precipitated by sensations of sexual arousal produced by elevated testosterone or vasopressin. The expression may also be correlated with autonomic arousal in the sender (in the form of elevated skin temperature and pupil dilation) and may result in elevated dopamine reward in the receiver. Exploring these aspects of the behavior does not impugn the importance of the behavior's social or cultural meanings; rather, it reflects aspects of the behavior that are overlooked in a sociocultural, political, historical, or religious frame.

The academic discipline of communication has been slow to embrace a biological frame for understanding behavior, based in part on the fear that calling a behavior "biological" equates to conceding that it is biologically determined. Such a conclusion would appear to suggest that individuals have little control over their behaviors and that environmental influences such as enculturation, parenting, education, and media are benign. In point of fact, however, arguing that communication and biology are inseparably related in no way implies that communication is biologically determined. It is certainly true that biology affords the ability to communicate. As Floyd and Afifi (2011) noted, "The ability to communicate does not dictate the *manner* in which we communicate, however, any more than the ability to write dictates the words we use or the ability to sing dictates the songs we enjoy" (p. 95; italics in original).

A biological frame therefore adds to—rather than detracts from—our understanding of communication phenomena. To date, several studies have applied such a frame to the study of interpersonal communication (for reviews, see Floyd, 2014a; Floyd & Afifi, 2011), including the study of affectionate communication. The subsequent section explicates findings related to several health correlates and consequences of affectionate behavior in close relationships.

Discussion of the Literature

The use of a biological frame to study affectionate communication has yielded many noteworthy findings and has advanced our understanding of communicative behavior by accounting for more than environmental influences. This section overviews the biological foundations of affectionate communication and highlights the major benefits of receiving affection in terms of managing stress, improving immunocompetence, and promoting relaxation. Subsequently, the physical health detriments of not receiving enough affectionate communication are discussed.

Affectionate Communication Has Biological Foundations

Individuals vary in their propensity to communicate affection, which has led researchers to consider what accounts for that variation. A fair proportion of the variance is likely the result of enculturation and upbringing (see, e.g., Floyd & Morman, 2000). Nonetheless, research has also identified both genetic and neurological antecedents for the tendency to communicate affectionately. With respect to genetic factors, Floyd and Denes (2015) investigated how genotypic variation on the oxytocin receptor gene polymorphism rs53576—linked in previous research to other forms of prosocial behavior (e.g., Rodrigues, Saslow, Garcia, John, & Keltner, 2009; Tost et al., 2010)—interacts with attachment style to predict a predisposition for affectionate communication. In line with previous findings, people possessing two G alleles had higher levels of trait expressed affection than those with two A alleles or an AG combination. Moreover, this difference across genotypes was more pronounced for those low in attachment security. These findings suggest at least a partial genetic basis for the propensity to communicate affection, particularly for those with insecure attachment styles.

Highly affectionate individuals also differ from others with respect to their neurological activity. Lewis, Heisel, Reinhart, and Tian (2011) used electroencephalography (EEG), a measure of fluctuating electrical activity in neurons, to examine a potential association with trait expressed affection. The study revealed highly affectionate participants to have asymmetrical electrical activity in their anterior cortex. Specifically, highly affectionate adults had more activity on the left side of the anterior cortex than on the right, this asymmetry did not hold for those with lower levels of trait expressed affection. This asymmetry in brain activity supports the notion of a broader set of approach–avoid tendencies that have previously been studied in the prefrontal cortices (Davidson, 1993). Just as more affectionate individuals showed more activity in the left side of their anterior cortex, prior research has found the left side of the prefrontal cortex to mediate approach tendencies (Davidson, 1998). Although communication research on affection has typically relied on self-report measurements, these two studies are exemplars of a new foray into correlating self-report and anatomical measures in affectionate communication research.

Affectionate Communication Helps to Manage the Stress Response

Stressors are common in everyday life, whether minor annoyances such as a traffic jam or major sources of distress such as losing a job or being diagnosed with a chronic illness. The manner and magnitude of the body's response to such stressors plays a pivotal role in maintaining wellness. It is adaptive for the body to mount a stress response appropriate to the stressor, yet it is maladaptive to overrespond to minor stressors or underrespond to major ones. Several social and physical factors exert influence over the body's stress response, and a growing body of research indicates that the exchange of affection can be instrumental in regulating stress response and recovery.

To understand how affectionate communication affects the stress response, it is instructive to consider first the physiology of stress. Among the most common markers of stress is the diurnal (i.e., 24-hour) variation in the adrenal hormone cortisol. Cortisol is released by the hypothalamic-pituitary-adrenal (HPA) axis in response to the perception of threat (Dickerson & Kemeny, 2004) and can be measured in relation to a specific stressor (Starcke, Wolf, Markowitsch, & Brand, 2008). In the absence of acute stress, cortisol follows a diurnal rhythm in which it peaks shortly after awakening, drops sharply during the first half of the day, then wanes more slowly until reaching its lowest point around midnight (Giese-Davis, Sephton, Abercrombie, Durán, & Spiegel, 2004). Chronic stress reduces diurnal variation, making the amount of 24-hour variation a useful marker of stress load (Giese-Davis et al., 2004).

Other biological markers are also used to index the stress response. These include the prohormone dehydroepiandrosterone sulfate (DHEA-S), whose ratio to cortisol is a stable indicator of stress (Cruess et al., 1999). As noted below, oxytocin (Floyd, Pauley, & Hesse, 2010), blood glucose (Floyd, Hesse, & Haynes, 2007), heart rate (HR; Ditzen et al., 2007), and blood pressure (BP; Grewen, Anderson, Girdler, & Light, 2003) have also been measured in relation to stress.

Research on the association between affection and stress has focused on three primary relationships, each of which is indexed below. First, affectionate communication acts to buffer individuals against the effects of stressors. Second, affection aids the body in properly regulating the stress response. Finally, affection plays a role in accelerating recovery from acute stressors.

Affectionate Communication Acts as a Stress Buffer

The ability to avoid overreacting to a stressor is adaptive, insofar as it protects the body against unnecessary damage. Several studies have demonstrated that aspects of the social environment, including the presence of close, supportive relationships, can serve to buffer or protect individuals from overreacting physiologically to threats (e.g., Cohen & Wills, 1985). More recent research has found that the presence of affectionate communication can produce a similar protective effect.

In a laboratory study by Grewen et al. (2003), for instance, participants were separated into two groups prior to being assigned to deliver a speech. Those in the experimental group held hands with their romantic partner for 10 minutes and then shared a 10-second hug, whereas those in the control group had no tactile contact. In reaction to the public speaking stressor, participants who held hands and hugged beforehand evidenced significantly lower systolic and diastolic blood pressure compared to controls.

Similarly, Ditzen et al. (2007) found that women who engaged in affectionate touch with a romantic partner prior to a laboratory stressor demonstrated lower resting heart rates and lower cortisol levels. Even participants who self-reported more verbal and social supportive affection in their close relationships (rather than actually experiencing touch) prior to a laboratory stressor had lower cortisol levels and resting heart rates (Floyd, Mikkelson et al., 2007B). These findings suggest that those who have more affectionate communication in their close relationships experience a less pronounced increase in cortisol levels when facing life's stressors.

A possible explanation for the stress-buffering effect of affectionate behavior relates to the pituitary hormone oxytocin, a peptide hormone that influences the parasympathetic nervous system and promotes overall relaxation. After recording their received affection for one week, 100 healthy adults were subjected to laboratory stressors in a study by Floyd et al. (2010). During the stressor, participants' levels of cortisol and oxytocin were monitored. Results indicate that those who received more affectionate communication during the preceding week had higher increases in oxytocin during the stressor. The researchers suggested that the elevated levels of oxytocin may have buffered the stress reactions of participants who received higher levels of affection.

Affectionate Communication Aids Stress Regulation

In addition to its buffering effects, affectionate communication aids stress regulation. Two studies, in particular, have documented a correlation between affectionate communication and HPA axis regulation. In the first study, 20 healthy adults provided saliva samples taken at four points in time throughout a typical workday: after waking up, at noon, in the late afternoon, and prior to bedtime. Results indicated a strong correlation (r = .56) between diurnal cortisol variation and affectionate communication (Floyd, 2006B).

In a follow-up study by Floyd and Riforgiate (2008), 20 healthy adults also providing four saliva collections over the course of the day. Additionally, both the participants and their spouses reported their levels of verbal, nonverbal, and social supportive communication. The saliva samples were analyzed for cortisol and DHEA-S. Results again showed a significant positive association between receiving affectionate communication and more diurnal cortisol variation. Furthermore, the participants' cortisol: DHEA-S ratio was also predicted by their spouses' reports of affectionate communication.

The stress-ameliorating effects of affectionate communication can even be experienced in the day following an affectionate interaction. In a 36-week diary study with 49 female participants, Burleson, Trevathan, and Todd (2007) found that those who experienced physical affection or sexual behaviors on one day reported lower stress and a better mood upon awakening the following day.

The tendency to communicate affection is also associated with other biological markers related to stress. For example, women who self-reported receiving more hugs from their husbands were found to have lower resting blood pressure and more circulating oxytocin (Light, Grewen, & Amico, 2005). Moreover, trait levels of affectionate communication have been shown to be negatively associated with blood glucose (which is elevated by stress; Floyd, Hesse et al., 2007).

Affectionate Communication Accelerates Recovery from Stress

Affectionate communication not only aids stress regulation and protects against overreactions, it also helps people recover more quickly from stressful episodes. Rate of recovery is clinically significant because a prolonged stress response can damage muscle tissue and bone density, among other effects (Sapolsky, 2002). In one study, Floyd, Mikkelson et al. (2007A) exposed participants to a series of laboratory stressors and then assigned them randomly into one of three groups. Those in the experimental group were instructed to spend 20 minutes writing an affectionate letter to someone they cared deeply about. Participants in the comparison group spent 20 minutes thinking about someone they cared deeply about, and those in the control group spent 20 minutes sitting quietly. Stress recovery was indexed by participants' cortisol levels (relative to their baseline levels) at the end of the 20-minute period. Results indicated that those who wrote affectionate letters recovered from the stressor most efficiently, whereas those in the comparison and control groups did not differ from each other.

Affectionate Communication Is Related to Immunocompetence

The human immune system comprises a collection of anatomical structures and physiological processes tasked with protecting the body from disease. Individuals differ in the strength of their immune systems—their *immunocompetence*—and some of the variation is attributable to environmental characteristics (see Hertz-Picciotto et al., 2008). That includes characteristics of the social environment; for instance, research has demonstrated immunosuppression as a function of marital discord (Kiecolt-Glaser et al., 1988) and psychosocial stress (Herbert & Cohen, 1993).

Indexing immunocompetence is challenging because there is no single standard, global marker representing the strength of the immune response (Farnè, Boni, Corallo, Gnugnoli, & Sacco, 1994). Among the markers that have been used to assess immunocompetence, however, are the cytotoxicity of natural killer (NK) cells and levels of antibodies for the Epstein-Barr virus (EBV). NK cells are lymphocytes that attack virally infected cells and impede tumor formation. Their efficacy in killing target cells is called their *cytotoxicity*, so higher levels of cytotoxicity reflect greater immunocompetence. EBV is a human herpesvirus best known as the cause of infectious mononucleosis. Most adults harbor the virus in a latent state. When EBV becomes active, the immune system responds by elevating the level of EBV antibodies; lower levels of antibodies reflect greater immunocompetence because they indicate the immune system's ability to keep the virus in a latent state.

Two studies have documented associations between affectionate communication and immunocompetence, although their results conflict. Floyd, Pauley et al. (2014) measured trait expressed affection in a group of healthy volunteers and collected blood samples for immune analysis. Their results indicated that trait affection was linearly related to NK cell cytotoxicity ($\beta = .43$), although they were unrelated to the number of NK cells. The researchers also found that trait affection was linearly related to circulating levels of immunoglobulin M (IgM), an antibody that provides immediate response to infection and leads other immune cells to destroy invading substances ($\beta = .36$).

The findings of Floyd, Pauley et al. (2014) indicate that the tendency to express affection is associated with greater immunocompetence, at least as indexed by NK cell cytotoxicity and IgM levels. Floyd, Hesse, Boren, and Veksler (2014) reached a contradictory conclusion, however, in their study of EBV. After measuring trait expressed affection and collecting saliva samples for immune analysis, the researchers showed that trait affection was directly related to the number of EBV antibodies (Spearman's $\rho = .24$). Because higher levels of EBV antibodies reflect a reduced ability of the immune system to keep the virus in a latent state, this finding suggests a negative association between affectionate communication and immunocompetence. The authors speculated that because some affectionate behaviors—kissing, sexual intercourse, etc.—involve salivary exchange, they may facilitate viral transmission and elevate the likelihood of infectious disease (which is why people typically curtail such behaviors when they have a cold, a flu, or other contagious illnesses).

At best, then, the data relating affectionate communication in immunocompetence are inconclusive. The immune system is a complex entity, and it is possible for a given behavior to enhance the competence of some dimensions of the system while simultaneously impeding others, which may account for the difference in findings with NK cell toxicity and EBV antibody levels.

Affectionate Communication Promotes Relaxation and Calm

Finally, the communication of affection is associated with indices of calm and relaxation—such as reduced cardiac output and elevated calm-inducing hormones—when the body is in a restful state. Calm and relaxation are relevant to health and wellness insofar as they promote cellular restoration and may buffer individuals against the effects of subsequent stressors.

Two studies, for example, have demonstrated associations between affectionate communication and lower resting heart rate. Floyd, Pauley et al. (2014) found that resting HR was negatively associated with trait expressed affection, and to a moderately strong degree (β = -.40). Those whose typical communication style is characterized by a tendency to be affectionate, in other words, evidenced a lower resting HR. Similarly, Floyd, Mikkelson et al. (2007B) measured affectionate communication in participants' primary relationships, specifically, and found that resting HR was negatively associated with affection expressed verbally (β = -.38) and through socially supportive behaviors (β = -.35), although the association with nonverbal affectionate expressions was nonsignificant.

As a behavioral trait, the tendency to communicate affectionately is also associated with lower resting systolic and diastolic blood pressure. Floyd, Hesse et al. (2007) measured participants' trait expressed affection and controlled for the effects of received affection (i.e., to isolate the influence of the affection individuals express to others, net of the influence of affection they receive from others). Their analyses showed that trait expressed affection had strong negative relationships with both resting systolic BP (β = -.55) and resting diastolic BP (β = -.48).

Holt-Lunstad, Birmingham, and Light (2008) taught married couples to conduct a "warm touch enhancement" procedure that involved massage to the neck, shoulders, and hands. Participants learned the procedure in a laboratory training session and then practiced the technique at home during a four-week intervention. Compared to couples in an attention comparison group, those who practiced warm touch experienced increased oxytocin and decreased alpha-amylase (a protein enzyme indicative of sympathetic nervous system arousal). Husbands in the warm touch condition also had significantly lower systolic blood pressure at the end of the intervention than did husbands in the comparison group. Earlier, Grewen, Girdler, Amico, and Light (2005) used the same warm contact intervention with married couples in a laboratory setting while also accounting for effects of spouses' relative emotional and social support. They found that greater support predicted higher levels of oxytocin both before and after warm touch. Greater support also predicted lower systolic BP after warm touch, but for women only (see also Grewen et al., 2003).

Deprivation of Affection Is Associated with Physical Health Detriments

Whereas receiving affection is associated with immunocompetence, stress buffering, and relaxation, the experience of affection deprivation—the condition of not receiving an adequate level of affectionate communication—has been linked to physical health detriments, including pain, sleep disorders, secondary immune disorders, and stress (Floyd, 2014B, 2015).

In a series of studies, Floyd (2015) found significant associations between affection deprivation and chronic physical pain. Such connections are suggested by neuroimaging research demonstrating that physical pain and social pain (such as would be expected to accompany states of social deprivation, including loneliness and affection deprivation) activate similar neurological responses. Specifically, the anterior cingulate cortex and its dorsal subdivision (dACC) are activated during the experience of both social and physical pain (Bush, Luu, & Posner, 2000; Eisenberger & Lieberman, 2004). Given that the body treats physical and social pain similarly, Floyd (2015) argued that affection deprivation would predict the experience of physical pain and results supported that hypothesis.

The same series of studies also documented an association between affection deprivation and poor sleep quality. Using mediation analysis, Floyd (2015) showed that the experience of pain partially mediated the relationship between affection deprivation and sleep quality, such that those who lacked affection felt more pain, which led to more frequent sleep disturbances.

Pain and sleep are not the only experiences associated with affection deprivation. In a cross-sectional study of 509 adults from across multiple countries, Floyd (2014B) found that affection deprivation is positively related to alexithymia (an impaired ability to encode and decode emotion), depression, loneliness, stress, and the number of diagnosed secondary immune disorders. On the contrary, affection deprivation is negatively related to relationship satisfaction, social support, and general health. These findings support the contention that affection serves an important role in maintaining health and well-being, such that being deprived of adequate affection correlates with multiple biological and social detriments.

Conclusions

The tendency to communicate affectionately with others may have deep evolutionary roots, insofar as affectionate behavior helps humans form and maintain the close personal relationships necessary to ensure their survival and procreation success. To the extent that this claim is valid, one would expect to find affectionate communication reflected in physiological processes that benefit the individual. Such processes cannot be adjudicated solely via the self-report and observational methods that have commonly characterized communication research. Rather, studying affectionate communication using a biological frame allows researchers to identify the genetic, neurological, endocrine, immune, and nervous system processes that complement social, cultural, and environmental influences on behavior.

This body of research has shown specifically that the propensity for affectionate communication is not entirely environmentally determined, but has both genetic and neurological substrates. Affectionate communication also protects individuals from exaggerated stress reactions, helps them regulate their stress response, and accelerates their recovery from elevated stress. Further, it aids immunocompetence and promotes relaxation and calm. Unsurprisingly, therefore, the lack of adequate affection is associated with a host of problems, many of which have specific biological roots.

Although much is now known about the biology of affectionate communication, much remains to be discovered. One nascent line of inquiry is the nature of the relationship between affectionate communication and the pain response. As noted, some studies have already connected affectionate communication to the experience of chronic pain. Ongoing experiments are testing the ability of received affectionate touch to modulate the response to painful stimuli, similar to the way that Coan, Schaefer, and Davidson (2006) demonstrated that touch modulates the stress response. To the extent that affectionate behavior can ameliorate the pain reaction, individuals can use such behaviors to modulate the experience of pain for their loved ones.

It is worth noting that affectionate communication is just one of many communicative behaviors that can be studied from a biological frame. As Floyd and Afifi (2011) detailed, a variety of interpersonal behaviors lend themselves handily to a biological approach, including social anxiety and public speaking fear; social support; conflict, aggression, and violence; attraction and bonding; imagined interactions; and emotional communication. These and many other communicative behaviors can benefit from empirical attention to their biological and physiological antecedents, correlates, and consequences that would augment—rather than replace—attention focused on their cultural and social dimensions.

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Kory Floyd

Hugh Downs School of Human Communication, Arizona State University

Colter D. Ray

Hugh Downs School of Human Communication, Arizona State University