



AN ABSTRACT OF THE THESIS OF

Courtney L. Darr for the degree of Honors Baccalaureate of Science in Psychology  
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Communication, Positive Emotions, and Prosocial Behavior

Abstract Approved: \_\_\_\_\_

Sarina R. Saturn

Affection is one of the most fundamental needs of humans. The current study aimed at better understanding how affectionate communication positively influences others, specifically through prosociality. It was hypothesized that individuals who give or receive affection more frequently are more altruistic and tend to feel more empathy, love, and compassion towards others. Self-report responses about one's capacity for positive emotions and prosocial traits were compared between those who give affection often and those who receive affection frequently. Results found positive associations between given and received affection, positive emotions, and prosocial traits. Notably, received affection was more associated with altruism than given affection. These findings illustrate how affection is an evolutionary advantage and benefits interactions with acquaintances and strangers.

Key Words: Affection, Compassion, Love, Altruism, Prosocial Behavior

Corresponding e-mail address: darrco@onid.orst.edu

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Investigating the Relationship between Affection, Positive Emotions, and Prosocial  
Behaviors

By

Courtney L. Darr

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APPROVED:

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Mentor, representing Psychology

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Committee Member, representing Psychology

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Committee Member, representing Philosophy

---

Chair, Department of Psychology

---

Dean, University Honors College

I understand that my project will become part of the permanent collection of Oregon  
State University, University Honors College. My signature below authorizes release of  
my project to any reader upon request.

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Courtney L. Darr, Author

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## Investigating the Relationship between Affectionate Communication, Positive Emotions, and Prosocial Behavior

### **Introduction**

Affection is one of the most fundamental needs for all humans (Rotter, Chance, & Phares, 1972). Affectionate communication is defined as the expression of affectionate feelings, or the deliberate act of communicating feelings of closeness, care, and admiration for another (Floyd & Voloudakis, 1999). According to Floyd and Voloudakis (1999), affectionate communication is essential for the development, definition, and conservation of personal relationships. Affection aids the formation (Owen, 1987), maintenance (Bell & Healey, 1992), and communication of love and supportiveness (Booth-Butterfield & Trotta, 1994; Punyanunt-Carter, 2004) in romantic relationships. Additionally, affectionate communication maintains familial relationships (Floyd et al., 2005; Rittenour, Myers, & Brann, 2007) and benefits platonic friendships and even acquaintanceships (Floyd et al., 2005). Affection clearly plays an integral role in the development and preservation of a wide range of relationships, which contributes to greater individual well-being.

Many individual and relational benefits of receiving affection from others have been well researched. Received affection is associated with increased self-esteem (Barber & Thomas, 1986), increased life satisfaction (Barbato & Perse, 1992), as well as higher interpersonal competence (Rubin & Martin, 1998), academic performance (Steward & Lupfer, 1987) and communication satisfaction (Morman & Floyd, 1999). Affection improves physical well-being (Komisaruk & Whipple, 1998) and mental health

well-being (Downs & Javidi, 1990), and also reduces depression (Makinnon, Henderson, & Andrews, 1993) and loneliness (Downs & Javidi, 1990). In addition to many individual benefits, received affection contributes to relational benefits, such as higher quality of human relationships and increased love and relationship satisfaction (Floyd & Morman, 2000).

While there is an extensive amount of literature on the benefits of receiving affection, research on the advantages of giving affection has only been explored in recent years. When comparing individuals who communicate affection more frequently than low-affection communicators, Floyd (2002) found that high-affection communicators are happier and have higher self-esteem, increased mental health, and less stress or fear of intimacy. Affectionate communicators have a secure attachment style, more social support, are more likely to be in a long-term relationship or marriage, and are more satisfied with their relationships (Floyd, 2002). Compared to low-affection communicators, high-affection communicators receive more affection from others (Floyd, 2002). Later research by Floyd and colleagues (2005) suggests that while high levels of affection given may be partially explained by reciprocating received affection, expressed affection has benefits that are independent of the affection he or she receives. An individual can frequently give affection as well as frequently receive affection, but some benefits may only arise from solely giving or solely receiving affection. Further research on the benefits of expressed affection that are independent of the influence of received affection will help better understand the importance of communicating affection.

**Affection Exchange Theory**

The range of individual and relational benefits from affectionate communication can be supported by the Affection Exchange Theory (AET: Floyd, 2001). AET, a neo-Darwinian theory based on the principle of selective fitness, considers affectionate communication to be an adaptation that enhances human fertility and viability.

Affectionate communication increases survival by increasing pair bonding and its associated resources, such as companionship, protection, financial security, and love.

AET claims affection increases both short-term reproductive opportunities as well as long-term fertility motivations for offspring to become more acceptable mates.

Furthermore, AET proposes that both expressed and received affection prompts individual and relational benefits through its contributions to creating and maintaining romantic or platonic pair bonds (Floyd, 2005).

AET emphasizes the importance of affectionate communication in intimate relationships to improve reproductive viability. However, it is uncertain the extent that affectionate communication is associated with positive feelings and prosocial traits, which also can increase reproductive opportunities. Positive emotion dispositions and prosocial traits not only make individuals more suitable mates, but they also positively benefit less familiar individuals. Positive emotion dispositions, such as love and compassion, help influence the initial formation, and later maintenance, of relationships with others (Shiota, Keltner, & John, 2006). Prosocial traits, such as altruism and empathy, benefit less familiar individuals and even strangers (Batson, Ahmad, & Lishner, 2009). Understanding the potential relationship between affectionate communication,

positive emotion dispositions, and prosocial traits will increase understanding of the extent positive benefits of affection can impact others.

### **An Overview of Positive Emotion Dispositions**

Similar to the benefits of affection, positive emotional dispositions have many relational benefits that enable the establishment and preservation of intimate bonds with others. Positive emotion dispositions include states such as compassion, love, joy, awe, amusement, pride, and contentment (Shiota et al., 2006). These dispositions help individuals maximize the response to opportunities that increase long-term survival and reproductive fitness (Fredrickson, 1998). Similar to affection, several positive emotional dispositions, including compassion and love, are also associated with attachment security (Shiota et al., 2006). In the present study, dispositional love and compassion will be examined.

Love as an emotional disposition can be studied in a wide variety of settings and involves strong feelings of affection and care for another. The capacity to feel love includes the rush of feelings associated with the perception of another serving as a reliable caregiver and the acceptance of this care (Sroufe, 1996). Love can refer to romantic love, friendship, familial love, and love of some material objects (Fehr & Russell, 1984). As an emotional trait, love promotes positive bonds and attachment and is linked to prosocial personality dispositions such as the “Big Five” personality domain Agreeableness, or the ability to feel care for social harmony (Shiota et al., 2006).

Compassion refers to feelings of concern for another’s welfare. Compassionate emotions lead to nurturing behavior towards those in need, determined by signals of helplessness or vulnerability (Gotez, Keltner, & Simon-Thomas, 2010). Compassion

improves perception of available social support and greater compassion for them (Piferi & Lawler, 2006). The positive interaction between one's compassion for others and received support during a stressful experience can predict more adaptive profiles of stress reactivity (Cosley, McCoy, Saslow, & Epel, 2010). Maintained compassion is associated with enhanced psychological well-being (Sheldon & Cooper, 2008), higher self-efficacy, self-esteem, and lower ambulatory blood pressure (Piferi & Lawler, 2006). Similar to love, compassion also improves intimate connections and is associated with Agreeableness (Shiota et al., 2006). Both love and compassion are positive emotion dispositions that lead to many individual and relational benefits and may be linked to affectionate communication and behaviors.

### **Prosocial Behavior, Empathy, and Altruism**

Prosocial behaviors, or behaviors that are voluntary and benefit another, may be linked to positive emotion dispositions. Prosocial behaviors may be motivated by empathy. Empathy refers to the capacity or drive to identify the emotional state of another and to respond with an appropriate emotion or by adopting his or her perspective (de Waal, 2008). Empathy reflects feelings of compassion, tenderness, or sympathy, and empathetic responses are likely to occur when someone is in clear need (Batson, Fultz, & Schoenrade, 1987). A wide range of individual differences and factors impact one's level of empathy. For example, females tend to have higher scores on empathy tests (Baron-Cohen & Wheelwright, 2004). Situational factors (e.g., fatigue, mood, threat, or alcohol) can temporarily reduce one's level of empathy, and neurological conditions (e.g., autism and psychopathy) are also associated with reduced empathy (Wheelwright et al., 2006). Neurotransmitters and genetic factors also influence empathy; empathy is influenced by

the hormone oxytocin, and a naturally-occurring variation of the oxytocin receptor relates to higher empathy (Barraza & Zak, 2009; Rodrigues, Saslow, Garcia, John, & Keltner, 2009). Empathy as an other-oriented emotional response allows individuals to identify with others and respond in ways that benefit others.

Research suggests that empathy may be an underlying mechanism to other prosocial behaviors, which include altruistic actions. Altruism is defined as an “other-oriented” motivational behavior or state with the aim to increase another’s well-being (Batson et al., 2009). Altruism as a motivational state often cultivates helping or prosocial behaviors that improve the welfare of others (Burks, Durtschi, & Youll, 2012). It is possible that altruistic behaviors may be evoked by empathy. According to the empathy-altruism hypothesis, prosocial motivation elicited by empathy is geared toward the ultimate goal of promoting or protecting the welfare of someone in need (Batson, 1991). While alternative hypotheses suggest that egoistic or self-oriented motivations drive altruistic actions, these hypotheses have not received the same level of empirical support compared to the empathy-altruism hypothesis (Batson, Dyck, Brandt, Batson, & Powell, 1988). The increasing evidence that the human brain is hardwired for social connection provides greater support to the claim that the same empathy mechanism elicits altruism (Batson, 1991).

### **Previous Research Comparing Affection, Positive Emotions, and Prosociality**

There has been some research that examines the associations between affection, positive emotions, and prosocial behavior. Several studies support the claim that received parental affection influences prosocial behavior. Hoffman (1975) found that emotionally insecure children who receive little affection at home are less likely to help

others compared to secure children who receive a lot of affection, while Knafo and Plomin (2006) discovered that parental positive affection predicts children's later prosocial behavior. Past research on affection and altruism focuses heavily on children's received affection from parents; further research on an adult population as well as on the influences of given affection will help expand the understanding of the role affection plays in altruistic behaviors.

Research also suggests an association between positive emotions and prosocial behaviors. Sprecher, Fehr, and Zimmerman (2007) provided evidence that a compassionate person can enhance his or her mood from an altruistic act than a less compassionate person. Their study also found that women and individuals who score high in compassionate love are more likely to recognize that positive emotions are a byproduct of giving and receiving compassionate love. Furthermore, deYoung, Quilty, and Peterson (2007) found that altruism (as a facet of Revised NEO Personality Inventory: Agreeableness) weigh strongly on compassion. However, altruism also loaded almost equally on politeness, which makes it difficult to discriminate compassion from politeness. Future research can gain clarity on the connection between prosocial behaviors and positive emotions, which may be partially explained by affection.

### **Objectives of the Current Research**

The present study will aim to expand the understanding of affectionate communication and the AET and its impact outside of immediate relationships. Past research has examined the benefits of affectionate communication on individuals and close relationships including romantic relationships, familial relationships, and platonic friendships. The current study will investigate the extent that expressing and receiving



affection in one's relationships influence one's interactions with acquaintances and even strangers. First, the relationship between affectionate communication and positive emotional dispositions that aid the development and maintenance of relationships, such as compassion and love, will be examined. Second, the study will investigate the connection between affectionate communication and prosocial traits, such as altruism and empathy. The current study will help improve the understanding of how positive emotions and prosocial traits relate to affectionate communication and improve one's chances of becoming viable mates, as suggested through AET.

The current study intends to investigate how giving and receiving affection influence positive emotions and prosocial behavior. Based on previous findings, we hypothesized that giving and receiving affection will have a positive association with prosocial traits, such as altruism and empathy. The current research will explore whether a significant difference in altruistic behaviors exists based on giving affection or receiving affection. We also hypothesized that affection will be positively related to positive emotions, specifically compassion and love. In addition, possible differences in compassion and love between given and received affection will be explored. To test these hypotheses and research questions, we will analyze self-report responses about one's own capacity for positive emotions and prosocial traits amongst two different trait affection groups- those who give affection often and those who receive affection frequently.

## Methods

### Participants

Ninety-one participants took part in the study, including 56 females and 35 males. All participants were undergraduate students at Oregon State University currently enrolled in a psychology course. Students were recruited through the online SONA registration system available for students in psychology classes who would like to partake in psychology studies.

### Materials

**Trait affection.** Participants completed two measures to assess trait affection. Given trait affection was measured using the 10-item Trait Affection Scale-Given (TAS-G; Floyd, 2002), which asks participants to rate how much affection they typically give to others. The 6-item Trait Affection Scale-Received (TAS-R; Floyd, 2002) determines how much participants receive affection in general. Both measures were answered on a five-point Likert scale ranging from *strongly disagree* to *strongly agree* (See Appendix A).

**Altruism.** Altruism was measured by the eight item Altruism subscale within the 240-item Revised NEO Personality Inventory (NEO PI-R; Costa & McCrae, 1992). The NEO PI-R examines the Big Five personality traits (Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness) as well as several different facets of each domain. The Altruism subscale (within the Agreeableness domain) measures how much concern a participant has for the welfare of others on a five-point Likert scale ranging from *strongly disagree* to *strongly agree*.

**Compassion.** The compassion subscale of the Dispositional Positive Emotion Scales (DPES; Shiota, Keltner, & John, 2006) is a five item assessment of a participant's tendency to generally feel compassion towards others or feel concern for another's well-being. In the current study, a modified five item Likert scale ranging from *strongly disagree* to *strongly agree* was used instead of the original seven item Likert scale format.

**Love.** The compassion subscale of the Dispositional Positive Emotion Scales (DPES; Shiota, Keltner, & John, 2006) is a six item assessment of a participant's tendency to generally feel love. Love as a disposition can include strong feelings of affection and care for another as well as the feelings associated when one perceives another as a reliable caregiver and accepts his or her care. In the present study, a modified five item Likert scale ranging from *strongly disagree* to *strongly agree* was used instead of the original seven item Likert scale format. Both the Compassion and Love subscales of the Dispositional Positive Emotion Scales can be found in Appendix B.

**Empathy.** Empathy was measured using an eight item version of the Empathy Quotient (EQ-8; Loewen, Lyle, & Nachshen, n.d) derived from the original 60-item Empathy Quotient by Baron-Cohen (EQ; Baron-Cohen, 2003). The scale determined the capacity of participants to recognize another's emotions. The current study used a modified five item Likert scale ranging from *strongly disagree* to *strongly agree* instead of the original four item Likert scale format of the Empathy Quotient (see Appendix C).

**Empathetic Concern.** A seven item subscale of the Interpersonal Reactivity Index (IRI-EC; Davis, 1983) was used to measure Empathetic Concern, or the tendency to feel sympathy for unfortunate others. The Empathetic Concern subscale of the Interpersonal

Reactivity Index was measured on a five item Likert scale ranging from *not at all like me* to *very much like me* (see Appendix D).

**Charitable donations.** Similar to methods used in national survey research (e.g., Frank, 1999), participants were asked to determine what percentage (0%-100%) of their ideal annual salary they think they should spend on a variety of categories to equal 100% in total. Ten categories were used: food, luxury items, recreation, clothing, donations, gifts to others, bills, education, travel, and other. The current study focused on categories linked to prosociality, such as donations and gifts to others (see Appendix E).

### **Procedures**

Participants completed each self-report scale through an online survey system outside of the laboratory environment. These scales were part of a larger set of questionnaires that took participants about one hour to complete.

## Results

Average scores for trait affection, compassion, love, altruism, empathy, and empathetic concern were all out of a maximum score of five. Participants scored averages of 3.55 for given affection ( $SD = 0.86$ ) and 4.53 for received affection ( $SD = 0.79$ ). Out of the Dispositional Positive Emotion Scales (DPES), participants reported average scores of 4.01 ( $SD = 0.59$ ) for compassion and 3.17 ( $SD = 0.73$ ) for love. Participants scored an average of 3.70 ( $SD = 0.55$ ) on altruism. Scores on the two empathy scales were very similar; on average participants reported a score of 3.71 ( $SD = 0.65$ ) on the EQ-8 and 3.72 ( $SD = 0.65$ ) on the IRI-EC.

A series of Spearman correlations were conducted to determine the strength of relationships between trait affection (both given and received) and positive emotions. The correlations are shown in Table 1. Given affection had a significant correlation with compassion ( $\rho = 0.35$ ,  $p < 0.001$ ). Received affection was also significantly associated with compassion ( $\rho = 0.28$ ,  $p < 0.001$ ). A significant correlation was also found between love and given affection ( $\rho = 0.34$ ,  $p < 0.001$ ). Similarly, love had a significant association with received affection ( $\rho = 0.37$ ,  $p < 0.001$ ).

Table 1

<i>Associations between Dispositional Positive Emotions and Trait Affection</i>		
	TAS-G	TAS-R
DPES - Compassion	0.35*	0.28*
DPES - Love	0.34*	0.37*

\*  $p < 0.001$

Additional Spearman correlations were used to establish the strengths of relationships between given and received affection and prosocial traits. The correlations

are shown in Table 2. A significant relationship was found between given affection and altruism ( $\rho = 0.35$ ,  $p < 0.001$ ). Received affection was also significantly correlated with altruism ( $\rho = 0.48$ ,  $p < 0.001$ ). Significant associations were found between affection and the two empathy measures as well. Based on the Empathy Quotient, empathy and given affection had a significant correlation ( $\rho = 0.35$ ,  $p < 0.001$ ). Empathy and received affection were also associated ( $\rho = 0.53$ ,  $p < 0.001$ ). When examining empathetic concern, correlations were found between both given affection ( $\rho = 0.34$ ,  $p < 0.001$ ) and received affection ( $\rho = 0.33$ ,  $p < 0.001$ ).

Table 2

<i>Associations between Altruism, Empathy, and Trait Affection</i>		
	TAS-G	TAS-R
NEO PI-R Altruism	0.33*	0.48*
Empathy Quotient	0.48*	0.53*
IRI - Empathetic Concern	0.34*	0.33*

\*  $p < 0.001$

The “Charitable Donations” measure was compared against five of the previous measures: TAS-G, TAS-R, Altruism, DPES-Compassion, and DPES-Love. The correlations are shown in Table 3. While most associations were not significant ( $p > 0.05$ ), it is important to note some of the significant associations with potential prosocial behaviors. Money spent on donations was associated with given affection ( $r = 0.24$ ,  $\rho < 0.05$ ). Additionally, money spent on gifts to others were correlated with altruism ( $\rho = 0.24$ ,  $p < 0.05$ ).

Table 3

*Associations between Annual Salary Measure, Trait Affection, Altruism, and Dispositional Positive Emotions*

	TAS-G	TAS-R	Altruism	DPES- Compassion	DPES-Love
Food	0.09	0.21	0.05	0.07	0.25*
Luxury Items	-0.24*	-0.08	-0.10	-0.20	0.002
Recreation	-0.15	-0.01	-0.02	-0.03	0.03
Clothing	-0.08	-0.08	-0.17	-0.05	0.13
Donations	0.24*	0.08	0.15	0.09	-0.03
Gifts to Others	0.06	0.02	0.24*	0.03	0.14
Bills	0.04	0.08	0.08	0.05	-0.20
Education	-0.20	-0.21*	-0.15	-0.14	-0.13
Travel	0.13	0.14	0.20	0.05	0.14
Other	0.27*	0.20	0.10	0.06	0.07

\*p<0.05

## Discussion

The current study examined the associations between giving and receiving affection, positive emotion dispositions, and prosocial behavior. Significant associations were found amongst both given and received affection with compassion and love. Similar to previous studies that recognize that affection, compassion, and love all individually improve intimate connections (Floyd & Voloudakis, 1999; Shiota et al., 2006), the current study found evidence that a positive relationship exists amongst these traits. Given and received affection were also associated with empathy and altruism. These findings support and expand upon previous research that note the relationship between empathy and altruism (Batson, 1991) as well as the relationship between received parental affection and altruism (Hoffman, 1975; Knafo & Plomin, 2006). Prior research has acknowledged a positive association between compassion and altruism (deYoung et al., 2007; Sprecher et al., 2007), which is consistent with the positive associations between affection and compassion, as well as affection and altruism. Additionally, significant associations were found between charitable donations and given affection, as well money spent on gifts and altruism. These findings illustrate the connection between prosociality and affection.

Several notable findings from the study include differences between given affection and received affection as well as monetary links to prosociality. First, it is important to recognize differences between given and received affection. While most traits were relatively similarly related to affection communication and affection receipt, individuals who give affection frequently scored higher on compassion than those who receive frequent affection. Past studies support the finding that compassionate individuals are



more likely to express affection (Shiota et al., 2006). Second, the current study found that received affection was more associated to altruism than from given affection. It is possible that a reciprocal effect influences affection receivers' altruistic behaviors (deYoung et al., 2007). Alternatively, slightly higher empathy quotient scores amongst those with increased received affection may support the empathy-altruism hypothesis (Batson, 1991), but the empathetic scores compared to those given affection were not substantial enough to make a conclusion. Further research is necessary to understand the nature of altruistic differences between given and received affection. Finally, it is important to acknowledge that money spent on donations and given affection were positively associated. These findings suggest that individuals who give affection frequently may be likely to show care outside of their intimate relationships, such as through charitable donations.

The present study had multiple strengths in its research design to acknowledge. First, examining both given and received affection helps expand the literature on affectionate communication and its benefits as a two-way process. Understanding how giving affection is related to positive traits and behaviors is essential, especially since benefits of given affection have only been examined in recent years (Floyd, 2002; Floyd et al., 2005). Second, the survey design of the study was convenient for participants to complete and easy for researchers to analyze. Participants were able to complete the survey anywhere and at their leisure, which made the study simple for participants to complete. The close-ended survey answers and anonymity removed any potential for subjective bias of participants by research assistants and allowed for clear objective

results. Furthermore, surveys were anonymous and confidential, which may allow participants to reflect honestly about themselves.

While the study has multiple strengths, it is important to acknowledge several limitations of the study. First, even though there were many significant correlations between affection, positive emotions, and prosocial behavior, these correlations do not determine any direct causal relationships. It is unclear based on the results if affectionate communication directly causes increases in one's level of positive emotions and prosocial behaviors or vice versa. Second, the self-report design of the study may allow for fluctuated responses by participants trying to be perceived more positively by researchers. While the confidentiality measures aim at reducing these exaggerations, it is still possible that participants responded with higher scores to seem more desirable rather than providing honest reflections. Additionally, the design of the study is limited with only one type of measure used (self-report scales). Future replications could include an additional method of measurement, such as physiological or observational measures, to better support the findings from the self-report measures.

Several possible directions for future research arise from the current study to better understand the relationship between affection, positive emotion, and prosocial behavior. A replication of the study could involve a different population. The participants were all young adults at a four-year university in the northwestern United States. This population may have different life experiences or opportunities that impact their capacity to feel or expressed the traits studied. Further research could involve a wider range of ages in order to determine if the current findings can be generalized across age groups or if generational differences exist. Replications in different regions or amongst individuals of

different cultures and backgrounds could also determine if there are any group differences. Another route for future research could involve incorporating a laboratory manipulation to compare against self-report data. In a lab setting, a manipulation could incorporate tasks to measure one's prosocial behaviors and compare those results with self-report measures on affectionate communication. Finally, future research could focus on the role of oxytocin in the relationships between affection, positive emotions, and prosocial behavior. Since oxytocin is linked to empathy and has many influences on emotional and social processing (Barraza & Zak, 2009; Kogan et al., 2011; Rodrigues et al., 2009), future research can provide a closer examination of how oxytocin may influence affectionate communication and prosocial behavior.

The current study provides clear support for a significant positive relationship between affection, positive emotions disposition, and prosocial behaviors. These findings have important implications for understanding how affection influences individuals, their intimate relationships, and other individuals that they may help in some way. The study supports recent research indicating the importance of both giving and receiving affection. Giving and receiving affection in intimate relationships may inadvertently benefit acquaintances and strangers by increased prosocial behaviors, as well as by one's increased positive emotion dispositions that influence the initial formation of relationships. Affection creates an evolutionary advantage for many individuals and their reproductive opportunities, as proposed through AET. The current study emphasizes that the evolutionary advantage from affection may be larger than previously thought with its connections to prosociality.

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## APPENDIX A

**Trait Affection Scales**

The next set of items asks about how much affection you tend to give and receive. In each case, please indicate how much you agree or disagree with each statement.

1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
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1. I consider myself to be a very affectionate person.
2. I am always telling my loved ones how much I care about them.
3. When I feel affection for someone, I usually express it.
4. I have a hard time telling people that I love them or care about them.
5. I'm not very good at expressing affection.
6. I'm not a very affectionate person.
7. I love giving people hugs or putting my arms around them.
8. I don't tend to express affection to other people very much.
9. Anyone who knows me well would say that I'm pretty affectionate.
10. Expressing affection to other people makes me uncomfortable.
11. People hug me quite a bit.
12. People are always telling me that they like me, or care about me.
13. I don't get very much affection from other people.
14. I get quite a bit of affection from others.
15. Most of the people I know don't express affection to me very often.
16. Many people I know are quite affectionate with me.

TAS scale scoring ("R" denotes reverse-scored items):

Trait affection given: 1, 2, 3, 4R, 5R, 6R, 7, 8R, 9, 10R

Trait affection received: 11, 12, 13R, 14, 15R, 16

## APPENDIX B

**Dispositional Positive Emotion Scales**

Please indicate how much you agree or disagree with each statement.

1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
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*Compassion*

1. It's important to take care of people who are vulnerable.
2. When I see someone hurt or in need, I feel a powerful urge to take care of them.
3. Taking care of others gives me a warm feeling inside.
4. I often notice people who need help.
5. I am a very compassionate person.

*Love*

1. Other people are generally trustworthy.
2. I develop strong feelings of closeness to people easily.
3. I find it easy to trust others.
4. I can depend on people when I need help.
5. People are usually considerate of my needs and feelings.
6. I love many people.

## APPENDIX C

**Empathy Quotient – Eight Item Version**

Please answer what is true to you.

1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
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1. I find it easy to put myself in somebody else's shoes.
2. I am good at predicting how someone will feel.
3. I am quick to spot when someone in a group is feeling awkward or uncomfortable.
4. Other people tell me I am good at understanding how they are feeling and what they are thinking.
5. I find it hard to know what to do in a social situation.
6. I often find it hard to judge if something is rude or polite.
7. It is hard for me to see why some things upset people so much.
8. Other people often say that I am insensitive, though I don't always see why.

## APPENDIX D



**Interpersonal Reactivity Index – Empathetic Concern**

1 Not at all like me	2	3 Sometimes like me	4	5 Very much like me
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1. I often have tender, concerned feelings for people less fortunate than me.
2. Sometimes I don't feel very sorry for other people when they are having problems.\*
3. When I see someone being taken advantage of, I feel kind of protective towards them.
4. Other people's misfortunes do not usually disturb me a great deal.\*
5. When I see someone being treated unfairly, I sometimes don't feel very much pity for them.\*
6. I am often quite touched by things that I see happen.
7. I would describe myself as a pretty soft-hearted person.

\* denotes reverse scoring

## APPENDIX E

**Charitable Donations**

What percentage (0% - 100%) of your annual salary do you think you should spend on each of the following? Please make sure that the total expenses you indicate equals 100%.

Food	_____
Luxury Items (electronics, cars, artwork, etc...)	_____
Recreational activities (sporting events, concerts, vacation trips, etc...)	_____
Clothing	_____
Donations	_____
Gifts to others	_____
Bills (phone service, electricity, rent/mortgage, etc...)	_____
Education (school tuition, academic courses, books, etc...)	_____
Travel (gasoline, plane fare, commute expenses, etc...)	_____
Other	_____
<b>Total</b>	_____

