

# Observer

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## Why Love Literally Hurts

Anyone who's suffered a broken heart knows physical and social pain have a lot in common. Now, scientists are using empirical methods to demonstrate just how closely the two are related in the brain.



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*Award Address*

### ***Passionate Love: Looking Back and Looking Ahead***

Romantic love was a neglected subject when Ellen S. Berscheid and Elaine C. Hatfield began their careers more than 50 years ago; today, there is a rich body of research on passionate love — including some of the physiological mechanisms underlying it.

### ***What Implicit Processes Tell Us About Romantic Attachment***

**By Vivian Zayas and Emre Selcuk**

Researchers at Cornell University think that we can predict people's behavior toward romantic partners by studying early childhood experiences.



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### ***Presidential Column Beyond the Department: An Organizational Model for Interdisciplinarity***

**By Elizabeth D. Phillips**

If university administrators take simple steps to promote interdisciplinary research, psychology departments will reap big benefits.



# What Implicit Processes Tell Us About Romantic Attachment

## *Understanding adult attachment from different levels of analysis*

By Vivian Zayas and Emre Selcuk

**Y**ou might have a friend like Susie who tends to have problems maintaining romantic relationships. When she is involved with someone, she continuously obsesses about some aspect of her relationship and is vigilant for any sign that her partner is ready to leave her. Or, perhaps you know someone like Tom who also has problems maintaining relationships, but for different reasons. Tom values his independence and freedom almost excessively. When he is in a long-term relationship, you often wonder, “Why?” He seems happier spending his time alone rather than with his partner. Then you might know someone like Steven, who seems to have it all when it comes to relationships. Even from a brief glimpse of his interactions with his partner, it is easy to see the intimacy and mutual support, care, and affection.

We all might know our own Susie, Tom, or Steven and might have even reflected about why they differ in how they feel, think, and behave within their romantic relationships. Understanding why people experience their romantic relationships differently and the consequences of these differences for various significant life outcomes, from relationship well-being to mental and physical health, has been a central focus driving our research in the Personality, Attachment, and Control Laboratory at Cornell University.

An obvious way to study romantic attachment is to simply ask people to report on their experiences. Indeed, as social and personality psychologists, we routinely ask people to indicate the extent to which various statements reflect their romantic attachment experiences or their *adult attachment style*. Certainly, self-report measures that reflect how people think about their typical



attachment experiences are hugely important. An ever-growing body of research, pioneered by the theorizing of APS Fellows Cindy Hazan (Cornell University), Phil Shaver (University of California, Davis), and Mario Mikulincer (Interdisciplinary Center, Herzliya, Israel), shows that adult attachment style predicts a number of consequential outcomes within the relationship itself, such as relationship satisfaction and likelihood of dissolution and divorce. Adult attachment style also predicts consequential outcomes outside of the relationship, such as a person's psychological and physical well-being and substance abuse.

It is typically assumed that self-reports of romantic experiences are limited by the respondent's self-presentation and impression-management concerns. If Susie is unhappy with her partner, she may not want to express her negative feelings on a self-report measure, and she may not even want to acknowledge these feelings to herself. But, in addition and perhaps more importantly, individuals may simply not be aware of the various psychological processes coloring their adult attachment experiences, because some of the processes were formed and shaped by early life experiences and operate outside of conscious awareness.

The classic studies of Harry Harlow and keen observations of John Bowlby highlighted the pivotal importance of an infant's first attachment relationship in socioemotional development and later adult relationships. In the relationship with her primary caregiver, the infant learns about the “world” and about her “self.”

We might expect that experiences in romantic relationships are colored by representations of caregivers that formed in early



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life but that these processes have been dissociated from conscious awareness. So, the challenge for psychological scientists is to devise ways to measure these implicit processes and assess how they color present-day experiences.

We might expect that experiences in romantic relationships are colored by representations of caregivers that formed in early life but that these processes have been dissociated from conscious awareness. So, the challenge for psychological scientists is to devise ways to measure these implicit processes and assess how they color present-day experiences.

In addition to obtaining self-reports of individuals' experiences, scientists in our lab have been using a variety of cognitive and neuroimaging techniques to study how people *mentally represent* their most important relationship partners, such as their romantic partners, mothers, fathers, and friends. We have focused especially on understanding aspects of mental representations that operate automatically, effortlessly, and without any deliberate control or conscious awareness. Could differences in how people mentally represent significant others provide an answer to why people, such as Susie, Tom, and Steven, have such drastically different experiences in their relationships?

### **How Do Implicit Evaluations of Partners Color Experiences in Romantic Relationships?**

When interacting or simply thinking about one's partner, what are the thoughts and reactions that spontaneously come to mind? In collaboration with APS Fellow Yuichi Shoda at the University of Washington, we explored this question by developing a version of the Implicit Association Test specifically designed to assess implicit evaluations of one's romantic partner (Zayas & Shoda, 2005). This computer-based categorization task assesses the extent to which the mental representation of one's partner automatically, spontaneously, effortlessly, and often outside of conscious awareness activates positive (vs. negative) reactions. As such, this measure assesses implicit evaluations of partners, not based on what individuals directly tell us via self-report measures, but on what is indirectly inferred from the speed with which they perform various categorization tasks.

We found that individual differences in implicit positive evaluations of partners predicted important relationship outcomes, such as relationship satisfaction, commitment, and relationship length. Implicit positive evaluations of partners also predicted adult attachment style. Securely attached individuals, such as Steven, showed strong implicit positive evaluations of their partner, whereas avoidantly attached individuals, such as Tom, showed weaker implicit positive evaluations of their partner. Curiously, for individuals with an anxious attachment,

like Susie, there was no clear relationship. We speculate that those who are anxiously attached are likely to feel not only intense feelings of love and desire for closeness but also intense feelings of anger and fear of being rejected. As such, they may hold more ambivalent reactions, which in this case would have cancelled themselves out.

### **Does How You Feel About Your Mom Predict How You Feel About Your Partner, Even if You Aren't Aware of It?**

A central idea in adult attachment is that the emotional bond between adult romantic partners is regulated by the same underlying system that regulates infant-caregiver bonds. If so, can we see the seeds of Tom's and Susie's discontent, and Steven's satisfaction, with their romantic relationships, in their mental representations of caregivers? To answer this question, in the study described above, we also had the same group of participants complete another, separate task to assess implicit evaluations activated by thoughts of their mothers. We used supportive and rejecting words (instead of positive and negative words) to minimize the method overlap. This allowed us to use implicit measures to assess, for the first time, links between mental representations of mothers and mental representations of romantic partners.

We found that individual differences in implicit evaluations of mothers predicted attachment style with a current adult romantic partner. Individuals who possessed strong positive evaluations of mothers as supportive were more likely to be the Stevens of this world — i.e., securely attached to their adult romantic partner. Individuals who possessed weaker positive implicit evaluations of mothers as supportive were more likely to be the Toms of this world — i.e., avoidantly attached to their adult romantic partner. In addition, individuals possessing strong implicit evaluations of their mother were also more likely to show strong implicit evaluations of their partner. Interestingly, this association was not observed when we looked at participants' self-reported explicit feelings about their mother and partner. The overall pattern of results provides support for the idea that key aspects of mental representations that remain stable over time are those that operate automatically and at times nonconsciously.

### **Is Romantic Attachment Really Rooted in Early Caregiving? The First Longitudinal Evidence**

An obvious limitation in drawing any causal inference from these studies is that all measures were assessed concurrently in adulthood. Although representations are assumed to be relatively resilient to change, we cannot discount the tantalizing possibility that having a rewarding and secure relationship with one's partner could affect existing representations of mothers. Fortunately, in collaboration with APS William James Fellow Walter Mischel of Columbia University and APS Fellow Lawrence Aber of New York University, we had the opportunity to investigate the roots of adult romantic attachment in a sample of participants who have been studied since the early 1980s (Zayas et al., 2011). At 18 months of age, they took part in a semi-structured play interaction with their mothers, and the mothers' behaviors (e.g.,

tone of voice, facial expressions, and body posture) were coded for sensitivity to the child's cues. Over two decades later, we contacted these individuals again and asked them to complete self-report measures to assess their adult attachment style across four different relationships — their romantic partner, a close friend, their mother, and their father — and across close relationships in general.

Despite the 20-year gap and the drastically different methodologies used (behavioral assessment and self-reports), quality of caregiving experienced at 18 months predicted adult attachment style. Those toddlers whose mothers provided sensitive caregiving were, as young adults, more likely to report being less avoidantly attached to their romantic partners and close friends. They were also more likely to report being less anxiously attached to their partner. Interestingly, early caregiving predicted neither anxious attachment to friends nor anxious or avoidant attachment to mothers, to fathers, or in close relationships generally.

The fact that the strongest links to early caregiving were observed within romantic relationships is highly consistent with attachment theory. Although early in development individuals primarily turn to parents to meet their attachment needs, as they mature, they increasingly turn to peers. Eventually, in adulthood, romantic partners take center stage and become the primary attachment figures. Thus, any effect of early caregiving in shaping the psychological processes governing attachment behaviors should be seen most clearly in adult romantic relationships, which is the prototypical attachment relationship in adulthood.

Our findings provide the first empirical longitudinal support for the idea that early caregiving experiences serve as the seeds for adult romantic attachment. But does this mean all hope for change is lost? Are the fates of our romantic relationships etched in early life? We do not think so. Experiences throughout development and into adulthood can profoundly alter a person's romantic experiences. For instance, according to the work by APS Fellow Jeffery Simpson (University of Minnesota), APS Fellow Andrew Collins (University of Minnesota), Jessica Salvatore (Virginia Commonwealth University), and their colleagues, if an individual with an anxious attachment style like Susie is in a relationship with a partner who is emotionally stable in the face of conflict, this can serve to dampen the negative consequences of insecure attachment on relationship functioning.

## Beyond the Relationship: Spontaneous Emotion Regulation Benefits

One of the most important functions of attachment figures, whether the figure is a parent in early life or partner in adult-

hood, is that they help us feel better if we are upset or hurt. A partner's touch, caring and supportive words, or even mere presence is enough to alleviate negative emotions, reduce the experience of physical pain, and dampen physiological distress. In a recent line of work, we (Selcuk et al., 2012) investigated whether simply thinking about one's romantic partner, in the absence of the partner's physical presence, could help regulate negative emotions after reliving an upsetting past experience (e.g., a time when one received a rejection letter for a highly coveted internship or lost a favorite pet). Recalling such ex-

periences reliably decreases mood and increases negative thinking. We found that simply viewing a photograph of one's romantic partner following the upsetting memory recall was sufficient to help spontaneously and effortlessly counteract the negative effects of the memory. Thinking about being supported by an acquaintance or viewing the photograph of an unknown other did not. Moreover, individuals who benefited the most from viewing their partner's photograph experienced fewer psychological and physical health problems in their daily life. But the ability to spontaneously obtain benefit from an attachment figure was not observed to the same extent for all participants. Securely attached individuals, like Steven, obtained the most benefit, whereas avoidantly attached individuals,

like Tom, obtained the least. Again, for individuals with an anxious attachment, like Susie, who are more concerned about abandonment and rejection, there was no clear relationship.

## The Downside: When the Relationship Itself Is a Source of Threat

Romantic relationships are typically a source of reward, joy, and relief. But unfortunately, they can also be a source of threat. Perhaps the most serious threat is the possibility of losing the relationship itself and of being rejected by one's partner. Cues of rejection can be subtle, such as showing a lack of attention or annoyance, or they can be overt, such as contempt or a clear expression of intention to break up. Because rejection is a personally sensitive topic, it is also fertile ground for presentation biases and distortions. Indeed, anxiously attached individuals, such as Susie, tend to be vigilant to these cues and ready to express distress. Avoidantly attached individuals, such as Tom, tend to downplay not only the importance of relationships but also the extent to which they feel distress due to threat. Are individuals' self-reported reactions to threats a reflection of their initial response, or do their self-reports reflect the downstream product of layers of processing to cope with the initial threat?



To study initial automatic responses to partner rejection cues, which occur within the first few hundred milliseconds of encountering the threat, our lab recorded event-related potentials (ERPs), a noninvasive technique that assesses the electrical activity that emanates from the scalp. We asked participants to listen to a series of sentence stems (“If I need help from my partner, my partner will be...”) and measured how their brain responded to various endings (Zayas et al., 2009). Participants showed heightened neurophysiological responses when stems were immediately followed by words such as *dismissing* and *rejection* compared to words such as *supporting* and *caring*. This heightened neurophysiological response to rejection vs. acceptance cues occurred within 250 ms of encountering the cue — approximately the time it takes to blink an eye — and documents the efficiency with which such interpersonal threats are processed. We also found evidence of individual differences. Anxiously attached participants like Susie were more likely to show an enhanced neurophysiological response to rejection cues, and avoidantly attached participants like Tom were more likely to show a dampened response. Thus, important individual differences with implications for adult attachment can be seen as early as within 250 ms of encountering a rejection cue.

## What Have We Learned?

Why do the Susies, Toms, and Stevens in our lives have such drastically different experiences in their adult romantic relationships? Our findings highlight the various ways in which people differ in the thoughts and reactions that are spontaneously activated

when thinking about their partners. These implicit processes color experiences within the specific romantic relationships. Moreover, given that everyone “carries” their relationships with them wherever they go, thoughts and reactions that effortlessly come to mind even when one is subtly reminded of a partner also have implications for functioning outside of the relationship — as related, for example, to emotion regulation and well-being. Our research is also contributing to understanding how implicit processes that give rise to individuals’ characteristic ways of experiencing their romantic relationships are rooted, to some extent, in the quality of their earliest relationships. ●

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