

PATRICK COLM HOGAN

## The Brain in Love

In the following pages, I will consider what might constitute a neurocognitive account of romantic love and its relation to literature. Like all emotions, romantic love has eliciting conditions, expressive and physiological outcomes, characteristic modes of cognitive processing, actional outcomes, and so on. Undoubtedly, some of these change culturally and historically (e.g., the actional outcome of sending one's beloved sweets on February 14 is not universal). However, many aspects of romantic love are constant – a desire not only to experience sexual union with the beloved, but to be in close physical proximity with him/her; a painful feeling when separated; characteristic cognitive processing that involves the imagination of long-term union; certain sorts of physiological arousal, both sexual and non-sexual, etc. The ubiquity of this emotion is attested to by the cross-cultural and trans-historical breadth of its literary representation. As the last point suggests, beyond the usual problems facing any account of emotion, the relation of romantic love to literature poses several further questions. First, why is it that romantic love is so pervasive and so idealized as a prototype for happiness in narrative? This question is raised by the cross-cultural prominence of romantic tragi-comedy – the story of a hero and a heroine who fall in love, are separated (usually by their parents), then reunited to live happily ever after – a genre generated by that prototype. Second, how can we reconcile this pervasiveness and idealization with the fluctuating and unstable nature of romantic love in real life? Indeed, one might ask here why romantic love itself is not stable, why it comes and goes, why it varies in intensity even when present. Finally, literary critics tend to place a further demand on literary theory. To be valuable in a spe-

cifically *literary* context, a theory should not only make valid generalizations (e.g., concerning genre). It should help us understand the particularity of individual works. It should have interpretive as well as explanatory worth. This demand may appear to pose particular problems for a theory of narrative generation such as that put forth in *The Mind and Its Stories*. By that account, writing a story is, like other activities, guided by prototypes. The crucial prototypes for writing stories are, of course, story prototypes. The central argument of *The Mind and Its Stories* is that three such prototypes – heroic, sacrificial, and, most importantly for our purposes, romantic – recur across unrelated traditions of verbal art. These prototypes underlie most (though never all) narratives preserved and widely appreciated in any given tradition. The interpretive challenge faced by such an account is one of moving from this level of commonality to the level of individual distinctiveness.

The first section of the essay sets out a basic framework for a neurocognitive account of emotion, modifying and complicating an account presented in *Cognitive Science, Literature, and the Arts*. It begins with the view that there are distinct, brain-based emotion systems. These systems are shaped by both genetic and experiential factors. One set of emotion triggers – the »innate« triggers – are, in effect, fully genetically specified. A second, developmental group of triggers are genetically guided, but sensitive to particular sorts of experience in critical periods or »critical circumstances«. The third variety of triggers, emotional memories, are purely experiential. The first sort are constant across cultures and time periods. The second and third sorts may vary by culture and by individual. However, any such variation is constrained, by human biology and other factors.

The second section considers the relations among emotion systems. These systems are partially autonomous. However, they interact through mutual enhancement or inhibition. Thus one emotion (e.g., disgust) may inhibit the physiological expression of a second emotion (e.g., hunger), while enhancing the actional outcome of a third (e.g., fear, which shares with disgust the actional outcome of retreating before the object). This section also takes up six emotion systems – fear, anger, attachment, disgust, hunger, and lust. It argues that disgust inhibits, not only hunger, but also lust, and that fear inhibits lust as well. At the same time, attachment serves to inhibit both fear and disgust. This section goes on to argue that romantic love is not an emotion system *per se*. Rather, it is the integration of sexual desire with attachment, an integration in which attachment serves to inhibit emotion systems that would themselves inhibit sexual desire.

The third section turns to literature. First, it considers why romantic love is likely to be unstable and why it is also likely to define one central prototype for happiness. As a prototype for happiness, it serves to generate the cross-culturally predominant genre of romantic tragi-comedy. This section goes on to consider the place of social determination in emotion and literature. First, there may be differences in social patterns regarding emotion, due to differences in develop-

mental patterns or in common emotional experiences. However, at the same time, there may be social patterns that recur cross-culturally. One of these is the recruitment of romantic love toward social stability. This occurs prominently in the proliferation of marriage plots – the standard form of romantic tragedy.

The fourth section considers a peculiar aspect of attachment. Most emotions are oriented toward classes of objects. Fear or lust is often particularly excited by one object. But, in those cases, the object has fear or lust triggers of particular intensity or salience. In other words, the object is a particularly good instance of more general patterns. However, this does not seem to be the case with attachment. As psychoanalytic writers have suggested, attachment propensities are to some extent shaped by early critical period experiences. However, attachments arise in later life, and not only in relation to properties fixed in the critical period. Rather, they appear to arise in particular circumstances – for example, following childbirth or bereavement. I refer to these as »critical circumstances«.

The final section takes up the preceding arguments to analyze *Hamlet* not as a revenge tragedy, but as a play about attachment. The perennial attention to some unresolved critical questions – most obviously, »Why does Hamlet delay?« – results, in part, from assuming that the play is about revenge. If the play is, in fact, about attachment, then the issues change, for our understanding of Hamlet changes, as does our understanding of his relation to his father's ghost, to his mother, to Horatio, and to Ophelia. Specifically, there is no question of Hamlet taking revenge. Revenge is based on anger. But, from the beginning, Hamlet feels grief, the loss of an attachment relation. His efforts – with Ophelia, with his Mother, with Horatio – are all attempts at establishing a new attachment relation in the critical circumstances of his bereavement.

Nonetheless, in terms of the standard romantic plot, Shakespeare does something peculiar here. Usually, romantic works point toward the importance of breaking with one's parents and uniting with one's beloved. Indeed, this is what we find in Shakespeare's own plays that are primarily romantic. However, in some of his heroic plots, such as *Hamlet*, he makes the conflict between parental and romantic attachment much more complex and destructive, much more difficult to resolve. In that way, the crucial question raised – and, I believe, answered – by the play is not »Why doesn't Hamlet kill Claudius?«, but »Why doesn't Hamlet marry Ophelia?«.

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