Cognitive Science: Literary Emotions from Appraisal to Embodiment

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Abstract. This chapter sketches out some of the main trends in emotion research in cognitive science and how they have shaped the field of cognitive literary studies. I start by identifying a historical shift from so-called "appraisal" to "embodied" models of emotion in cognitive science. The latter approach has had a significant influence on humanities scholarship investigating the role of emotions in literary experience, as I show by examining a number of representative contributions. This discussion also brings into view some of the gaps in current approaches to emotion in cognitive literary studies. In the final part of the chapter I draw on research in the area of "enactive cognition" to address those gaps. I argue that enactivism can help develop a comprehensive account of how emotions are mobilized and, potentially, reconfigured by literary engagements.

Keywords. Appraisal, embodiment, defamiliarization, enactivism, literary reading

Literary writing and baby talk—the highly repetitive speech with which caregivers address preverbal children—seem worlds apart. The primary purpose of baby talk is to engage an infant in an affective exchange. Developmental psychologist Colwyn Trevarthen uses the metaphor of the "dance" to describe the rhythmic back-and-forth between the caregiver (typically, the baby's mother) and the child: "Even in the first weeks after birth mother and child can achieve such coordination of expressions and movements in a sort of circular dance of mutually completing and inter-woven bodily motions" (24). This kind of coordination is, of course, dramatically different from the cultural sophistication and highly mediated nature of the practices that surround what we call "literature"; yet evolutionary scholar Ellen Dissanayake convincingly argues that this patterning of vocalizations provides the basis for the experience of both poetic and narrative rhythm: our appreciation of poetry or stories may require advanced linguistic and cultural competencies, but it has its roots in simple, affective, and largely preverbal interactions experienced during childhood.

Consider, for instance, the classic game of peekaboo: as soon as the adult hides his or her face, reveals it, and then hides it again, an expectation is created in the spectating infant; the adult may manipulate that expectation by delaying the "peekaboo" moment. For Dissanayake, this structure of arousal and resolution generates what we may think of the "prelinguistic substrates" of suspense and surprise—two emotional effects that are central to literature. Dissanayake's argument converges with the account presented by a philosopher, David Velleman, for whom literary experience is fundamentally affective and deeply grounded in the body, particularly through the creation and management of arousal. The goal of this chapter is to discuss how cognitive science can illuminate the role of specific emotional responses within the general affective framework of literary experience highlighted by Dissanayake and Velleman.

In literature, emotions exist at multiple levels: they can be verbally referenced through emotion terms (e.g., "melancholic," "nostalgia," "saddened"); they can be implied by characters' actions and utterances (in narrative genres) or by the lyric I's words (in poetry); they can underlie the progression of story or the prosodic rhythm of poetry; lastly, they can drive the reader's affective involvement in a plot or poetic text.[1] Clearly, I cannot hope to offer a comprehensive mapping of these levels and how they have been conceptualized by the many scholars working at the intersection of cognitive science and literary studies (within the field of cognitive approaches to literature).[2] The idea of the *embodied* and *embedded* nature of emotions in literary experience will provide a through-line that will be picked up by various other contributions to this book: emotions tap into the embodied repertoire of affect, and they are always embedded in specific contexts of human interaction. I will start by offering a sketch of developments of emotion research in cognitive science; in a second step, I will turn to cognitively inspired work on literary emotions and survey some of ways in which it has investigated the various levels listed above; finally, I will home in on a significant paradigm in contemporary cognitive science, the so-called enactive approach, which foregrounds the intersubjective coordination behind emotional experience in literature.

Emotion in Cognitive Science: A Short History

Cognition, write Edward Smith and Stephen Kosslyn in a cognitive psychology textbook, "occurs when you derive implications or associations from an observation, fact, or event" (3). Cognitive science is an umbrella term for a number of disciplines (psychology, neuroscience, psycholinguistics, etc.) that study how those "implications or associations" are derived by the mind. Unlike the earlier school of behaviorist psychology, which focused solely on externally observable behavior, cognitive science posits that "invisible" mental events play a central role in guiding action. Like behaviorist psychology, cognitive science uses experimental methods to test its hypotheses and models. It is customary to trace the history of cognitive science to the emergence of the field of Artificial Intelligence in the 1950s and 1960s (see Lakoff and Johnson, chap.6). As a model for understanding the mind, this first wave of cognitive science presupposes a fundamental analogy between human psychology and information processing in computational devices—more simply put, between the mind and computers. The human mind is seen as an input-output system, with perception providing the input and behavior constituting the output of internal mental operations (see Horst). Just as computers handle strings of binary code, the mind is thought to process mental states that are propositional—that is, language-like—and fundamentally abstract. These mental states or representations cannot be observed directly; rather, they are inferred from cycles of perception and overt action. Of course, this is a rough and somewhat caricatural portrayal of AI-inspired cognitive science, but the computational model of the mind did inflect the vocabulary and assumptions of early cognitive theories. David Marr's study of visual perception—*Vision*—is often hailed as one of the landmark achievements of computational cognitivism.

It will come as no surprise that emotions did not figure prominently in this strand of cognitive science. Surely, emotion and computers don't mesh well, and cognitive scientists were led to prioritize mental functions that can be more easily accounted for within a computational paradigm: perception, motivation, the abstract knowledge of so-called frames and scripts. Significantly, the journal *Cognition and Emotion* only launched in 1987, well after the heyday of computational cognitivism. In one of the articles collected in the first issue, psychologists Keith Oatley and P. N. Johnson-Laird develop a "cognitive theory of emotions" based on the insight—couched in typically cognitivist language—that emotions "are a form of internal communication that sets cognitive processors into one of a small

number of characteristic modes" (48). For Oatley and Johnson-Laird, emotions are instrumental in planning action and in guiding social relations. While they don't deny that emotions have a certain phenomenology (i.e., experienced qualities), what interests them is "the cognitive evaluation of the situations that create such junctures" (48). Evaluation denotes the unconscious computational processes through which an organism comes to assess a certain situation as, for instance, dangerous or beneficial to its well-being—an assessment that triggers, respectively, fear or happiness. Oatley and Johnson-Laird link this idea to Paul Ekman's (e.g., Ekman and Friesen) work on basic emotions, which—while not framed in explicitly cognitivist terms—allows them to posit the universality of emotional evaluations.[3]

For most of the history of cognitive research on emotion, evaluation has been discussed under the heading of "appraisal." One of the leading psychologists associated with this concept is Richard Lazarus. In a widely cited article in *American Psychologist*, Lazarus argues—in line with how Oatley and Johnson-Laird discuss "evaluation"—that "emotion is the result of appraisals of the significance of what has happened for personal well-being" (353), with appraisal being defined as "an evaluation of the significance of knowledge" (354). Consider, for instance, a situation in which I am driving on a busy highway, miss the right exit for my destination, and then become stuck in traffic for two hours before I can turn around. The frustration I experience is the emotional outcome of my cognitive appraisal of the situation, which involves knowledge (I will be late; I could have been on time if I had payed more attention to the signs), short-term goals (whatever I was going to do at my destination), and of course social pressure that reflects long-term goals (I do not want to be seen as unpunctual or distracted). For appraisal theorists like Lazarus—as well as Nico Frijda—the appraisal and the emotion are two distinct stages in the emotional process: while we can be conscious of our emotional responses, the underlying appraisal is cognitive in that it doesn't involve consciousness. Of course, a different combination of situation, motivations, and goals can result in a different appraisal, and therefore in an emotional response other than frustration: for instance, if I am driving to what promises to be a tedious meeting, I could feel relieved at the fact that the traffic jam gives me a perfect excuse not to attend it.

The bifurcation of cognitive evaluation and emotional response is the centerpiece of appraisal theories, and also the assumption that embodied accounts of emotion are most likely to resist. The so-called embodied approach to the mind developed in the wake of Francisco Varela, Evan Thompson, and Eleanor Rosch's seminal *The Embodied Mind*, a work based on a highly original fusion of cognitive science, phenomenology, and Buddhist thinking in the Mahayana tradition. Varela, Thompson, and Rosch argue forcefully against the computational analogy that, as we've seen, has been the guiding model of cognitive science. Mind is seen as intimately bound up with life, and as reflecting in multiple ways our nature as embodied and experiencing beings; from that perspective, cognition is not an abstract process of computation or mental representation, but the embodied and social interactions through which organisms "enact" a world, as the authors of *The Embodied Mind* put it (151). While emotion was not one of Varela, Thompson, and Rosch's chief concerns, their account—along with work in cognitive linguistics (Lakoff and Johnson) and other areas of the mind sciences—paved their way for closer engagement with the embodied component of emotion.

This trend saw the return of an earlier, pre-cognitive conceptualization of emotion, which can be traced back to an essay by William James, "What Is an Emotion?" (1884). James's approach frontloads the physiology of emotion—the external blushing and twitching but also the inner feelings of (for instance) light-headedness or stomach churning that define emotional experience. For James, these "bodily

changes follow directly the *perception* of the exciting fact, and . . . our feeling of the same changes as they occur *is* the emotion" (189–90; italics in the original). This seemingly modest statement contains a radical understanding of emotion, one in which the separation of appraisal and emotion proper vanishes. The key word is "perception": one can *perceive* a situation as dangerous (or as frustrating, relaxing, etc.), without the need for an appraisal that is separate from the perceptual act; emotion is, simply, the experience of how our body responds to this perception. Antonio Damasio and Jesse Prinz—respectively, a neuroscientist and a philosopher—are among the researchers who have revamped James's theory of emotion, grounding it in experimental research and philosophical arguments and setting it up as an alternative to appraisal theory. Let us go back to the traffic jam example to see how embodied theories of emotion would account for my frustration. From that standpoint, my emotion is not the result of a cognitive judgment or inference (I am stuck in traffic equals I will be late, therefore I feel frustrated). Rather, the frustration arises directly from the experience of being stuck in traffic: my perception of the cars not budging, the long line of vehicles ahead of me, the exit I was supposed to take still ironically visible in the rearview mirror. There may be inferences and judgments, of course, but they are not the *primary* cause of the emotion: it is the body, and more specifically the feeling of being stuck, that takes center stage. This is what Prinz calls an "embodied appraisal" (chap.3). It is important to understand how this embodied theory of emotion differs from standard appraisal-based accounts. First, while emotional experience may still be said to involve an "evaluation" in some sense of the word, it is nothing like the computational, inferential, or abstract processing of appraisal theory: we perceive a situation to be frustrating just as we perceive a clear sky to be blue, without any intervening abstract reasoning. Second, while appraisal theory tends to downplay the body and the lived experience of emotion and distinguish them dualistically from appraisal, the embodied approach ties them very closely together.

Also within the embodied camp, Giovanna Colombetti has developed a model of emotion in the "enactivist" tradition of Varela, Thompson, and Rosch's *The Embodied Mind*. Colombetti departs from Prinz's model in that her view of emotions doesn't involve any kind of internal, mental representation (a concept that plays an important role in Prinz's theory). We will return to this enactivist understanding of emotion and experience in the final section of this chapter. Of course, there are other important nuances and disagreements within both appraisal and embodied theories that I won't be able to discuss here. But with these basic ideas at hand, we can turn to work that seeks to bring the cognitive science of emotion to bear on literary experience.

Perspectives on Literature, Cognition, and the Emotions

Emotions in literature, as argued above, exist at many levels. Perhaps most fundamentally, there have been attempts since the late 1980s to link the concept of literariness—the defining features or qualities of literary discourse—to emotional experience. Writing in the third issue of *Cognition and Emotion* (1989), David Miall—one of the key figures in the field of empirical literary studies—argues that schema theory cannot fully explain why readers are drawn to literary texts. Along with frames and scripts, with which it is frequently associated, schema theory was one of the staples of computational cognitive science: simply put, schemata are abstract representations that organize knowledge within a certain domain (for example, the schema "driving" involves a car, a road, a steering wheel, etc.). Psychologists like Arthur Graesser had applied the concept of schema to the expectations that structure narrative comprehension. However, as Miall argues, the primary interest of literature is an emotional one: it has to do with the *subversion* of these expectations—a process of defamiliarization, to use the conventional

English translation of Viktor Shklovsky's "ostranenie." Further, according to Miall, defamiliarization is closely correlated with affect: when literature departs from an established schema (be it a pattern of poetic meter or a convention regarding genre), it generates a feeling of surprise that is widely regarded by readers as *essential* to literary experience (hence the link with literariness). Miall was able to confirm this intuition in a series of empirical studies conducted in collaboration with Don Kuiken: by measuring reading times in conjunction with self-reported emotions, Miall and Kuiken demonstrated that, unlike ordinary discourse, literary language slows down reading (an important element of Shklovsky's theory of defamiliarization) and increases emotional involvement.

Also of interest in Miall's 1989 article is the fact that the focus on literary experience and affect results in a significant challenge to the appraisal model of emotion. Referring to Oatley and Johnson-Laird's article, discussed above, Miall writes: "It may be true that emotion often functions as an appraisal mechanism . . . . But these models of emotion seem less able to account for the affective components of the response to complex narratives of the kind studied in this article" (75). Well before the rise of embodied accounts of emotion, Miall's thinking on literature leads him to reassess the significance of appraisal, shifting the emphasis from the cognitive to the affective and embodied components of emotional responses. The centrality of affect in reader response explains why appraisal theories have never fared well—at least not in an undiluted form—in the field of cognitive approaches to literature.

Patrick Colm Hogan is the scholar who has most consistently investigated the role of emotion in literary experience, with particular focus on literary narrative from a cross-cultural perspective. The cognitivist concept of schema still plays a role in Hogan's *The Mind and Its Stories* (*The Mind and Its Stories* 61), but mostly as a foil to Hogan's interest in the much more concrete idea of "prototype." While a schema is fixed and abstract, a prototype is a matter of probability and (potentially embodied) experience: "prototypical" is what we are most likely to encounter in a given context. Hogan builds on Oatley and Johnson-Laird's work, but he doesn't foreground the inferential nature of appraisal; rather, he develops a different aspect of Oatley and Johnson-Laird's model—namely, how emotional experience is organized around prototypical sequences that fall into "what is, in effect, a narrative structure" (*The Mind and Its Stories* 76). For instance, we tend to associate frustration with quotidian mishaps (such as a traffic jam), not life-defining events (a close friend's death); likewise, frustration is likely to result in verbal and nonverbal expressions of annoyance, not in extreme violence. The usual scenario linking together a situation, a feeling, and a behavioral response is the prototype of an emotion.

Cross-fertilizing cognitive science with the theory of "rasa" (or aesthetic emotions) developed in ancient Sanskrit texts, Hogan argues that prototypes of emotional experience are mirrored in narrative structure, and more specifically in the genres of romantic and heroic tragicomedy. Hogan shows that, cross-culturally, "there are two prominent structures of literary narrative, romantic and heroic tragicomedy, derived respectively from the personal and social prototypes for happiness" (*The Mind and Its Stories* 98). Put otherwise, there are two emotional prototypes for happiness, focusing on personal life and social status (gaining political power, etc.); through their implicit narrative structure, these prototypes form the basis for two highly significant narrative genres that can be identified across cultures. Hogan's approach has developed significantly in his later study *Affective Narratology*, and his inventory of prototypes conveyed by stories has expanded. The concept of appraisal makes several appearances in Hogan's 2011 book, but he presents perceptual processes and their literary representation as more fundamental than cognitive or belief-based appraisal. Throughout Hogan's

work, it is the socio-cultural embeddedness of emotion that takes center stage via the link between emotional experience and ideology.

Most of the scholars who work on emotion within cognitive literary studies—for instance, Suzanne Keen (*Empathy*) and Blakey Vermeule—share Hogan's and Miall's assumption that abstract appraisal is not enough to explain the role emotions play in literary reading.[4] By its very nature, literature destabilizes clear-cut distinctions between rational or abstract thinking—cognition in the narrow sense—and bodily affects. Remember Dissanayake's argument about the affective "substrate" of literary experience: in various ways, literary texts tap into a repertoire of embodied interactions that predate, in developmental terms, the acquisition of linguistic skills and cultural competencies, and yet provide the emotional structures of expectation and surprise that underlie literary reading. Further, while many literary scholars argue that emotions are grounded in our biology and evolutionary history, they tend to see them as situated in a socio-cultural context that modulates the evocation, experience, and expression of emotion. Literature enjoys a privileged position vis-à-vis that context, being both a reflection *of* and a reflection *on* broader dynamics in a given culture and society. Necessarily, then, literary emotions are the result of complex interactions between biological predispositions and cultural knowledge and evaluations—the kind of interaction that Nancy Easterlin theorizes in her "biocultural" theory of literary interpretation.

So far we have encountered literary emotions as affect produced by the literary deviation from schematic knowledge (in Miall's work) or as more particularized templates defining the main literary genres (in Hogan's studies). Of course, there are other kinds of emotional responses intersecting with these broad emotional structures, and they have also been approached from a cognitive angle. In literary narrative as well as poetry, readers are confronted with fictional personas—the poet, a protagonist, a set of minor characters. As we relate to these figures, sympathy as well as empathy may emerge, complicating and enriching our emotional engagement with other levels of a literary text. While often used interchangeably in everyday discourse, sympathy and empathy are distinct responses (see, e.g., Coplan). Sympathy is best defined as "feeling-for," or experiencing emotions in response to another person's (or character's) feelings: someone's sorrow may elicit compassion, for instance. Empathy, by contrast, involves "feeling-with" or a partial overlap of feelings, such as when I feel sad while comforting a grieving friend. Empathy is related to what we commonly refer to as "identification"—a form of imaginary perspective-taking that, as scholars such as Frank Hakemulder have argued, is central to literary experience. Empathy and sympathy are not mutually exclusive, which explains why in everyday language (and also in many psychological theories; see Davis) empathy is seen as involving "empathic concern," which is essentially a form of sympathy. However, keeping empathy and sympathy distinct at a conceptual level brings into view the complexity of emotional responses to literature, which frequently asks readers to move back and forth between a sympathetic and an empathetic stance toward a character, or even obstructs sympathy while encouraging empathetic perspective-taking—for instance, when we engage with a morally deviant character.[5]

Readers' emotional responses to characters and situations in both literary poetry and prose tend to build on memories of their own emotions. This is the last level of emotional engagement with literature I'll draw attention to: in *Such Stuff as Dreams*, Keith Oatley discusses it as "relived emotion" (124–26). We never approach literature as a blank slate, but tend to link it to our identities, personalities, and emotional memories—what I called the reader's "experiential background" (*Experientiality* 55–71). This implication of past experiences is part of the reason why some texts will resonate more than others with

a certain reader, but it also explains why literary emotions are so effective at *shaping* readers' past emotions into something new. Kuiken, Miall, and Sikora's empirical work on "self-modifying feelings" in reading confirms the idea that the evocation of emotion in a literary context can prompt readers to gain novel perspectives on personal memories and identity.

Toward an Enactivist Account

As a final step, I will present an account of literary emotions inspired by work on so-called enactive cognition, particularly Colombetti's already discussed book as well as the arguments advanced by Ezequiel Di Paolo, Marieke Rohde, and Hanne De Jaegher (Di Paolo et al.; De Jaegher and Di Paolo). This enactivist model is not meant to supersede the approaches to literary emotions outlined in the previous section; rather, it intends to offer an integrative framework whereby literary engagements—including emotional responses—are grounded in a view of cognition that offers a strong alternative to traditional cognitivism. Indeed, more than any other contemporary theory of the mind, enactivism resists the mind-body and cognition-affect split that underlies first-wave, computational cognitive science. The starting point of enactivism, as discussed above, is that an organism's embodied interaction with its physical and socio-cultural milieu is inherently evaluative, without any need to posit a mechanism of abstract appraisal distinct from bodily engagement. This does *not* imply that so-called higher cognitive functions such as abstract reasoning and language production play no role in cognition; but even these advanced skills are grounded in more basic modes of physical interaction with the world.

For Di Paolo, Rohde, and De Jaegher, who extend Varela, Thompson, and Rosch's groundbreaking work, a living organism enacts a world through embodied, explorative interactions that are guided by bioculturally defined *values*. When, for instance, a mouse scurries into a hiding place to escape a cat, the rodent's movements express the biologically basic value of self-preservation. The emotional response that is evidently bound up with the mouse's behavior involves no high-level cognitive appraisal but only an embodied, perceptual evaluation of danger. The problem, of course, is how this account of basic values can be extended to the level of culturally mediated engagements in human communities. Di Paolo, Rohde, and De Jaegher argue that intersubjectivity and cultural practices multiply the values available in a given milieu, from mere survival to the sophisticated evaluations involved in (for instance) family life, politics, and the arts. Nevertheless, the negotiation of values remains modeled after an embodied engagement, just "scaled up" to account for the complexity of the human value landscape.

Interacting with other individuals, and with cultural practices more generally, is seen as a process of intersubjective coordination: "[Patterns] of coordination can directly influence the continuing disposition of the individuals involved to sustain or modify their encounter. In this way, what arises in the process of coordination . . . can have the consequence of steering the encounter or facilitating (or not) its continuation" (De Jaegher and Di Paolo 492). Particular values can be introduced into this structure of coordination and affirmed, rejected, or reconsidered on the basis of the ensuing intersubjective dynamic. Storytelling is an excellent example of social coordination at this level. For example, the plot of the animated series *Tom and Jerry* revolves around the proverbial enmity of cats and mice. Repeatedly, Tom attempts to catch and kill Jerry, but the latter always manage to escape through cunning and physical agility. The fundamental values at stake here is, again, survival, but it is much more mediated than in the real-world example of the mouse scurrying to safety. The storyteller—in this case, not a single individual but the result of the creators' collective work—dangles certain values before the audience, generating suspense on the basis of expectations established by previous narrative

experiences as well as familiarity with the *Tom and Jerry* franchise: how is Jerry going to survive Tom's nth assault? How are Tom's carefully premeditated attacks going to backfire on him? Ultimately, who is going to have the upper hand in this quasi-epic struggle? These questions are here expressed propositionally (that is, as verbal sentences); but in the thick of the audience's coordination with the story—and with the storyteller behind it—these questions are much more likely to register as a patterning of affective states. These states will include a sequence of what Meir Sternberg would call "suspense, curiosity, and surprise," which may, in turn, build on specific emotions such as fear of Jerry's death or satisfaction at Tom's inevitable comeuppance.

In this way, as I argue in *The Experientiality of Narrative*, narrative is an intersubjective practice that allows storytellers and audiences to introduce and negotiate non-actual values: we can sit back and laugh at the struggle between Tom and Jerry because the values that emerge in our engagement with the show do not bear on our well-being directly. Thus, Yanna Popova's enactivist theory of narrative posits that "the interaction between narrator and reader is best captured as a kind of rhythmic coordination between tension and release in the narrative pace itself" (83). This "rhythm," as we know from Dissanayake, derives from the affective structure created in infancy by the caregiver's interactions with preverbal children, but language and culture make it possible to involve within the rhythmic coordination of storyteller and audience a much wider gamut of values. Such values are responsible for the literary emotions discussed in the previous section. Think about Hogan's theory of emotion prototypes and literary genres: ideas of personal fulfilment through romantic love or social realization through political power are culturally shared values that steer, like emotional tracks, the storyteller-audience coordination in certain directions. Importantly, while this coordination is mediated by language, concepts, and cultural knowledge, it is rooted in an intersubjective context that is fundamentally embodied and affective. The emotional prototypes embedded in romantic and heroic plots thus function as "dynamical patterns"—in Colombetti's (69–70) terminology—that guide, without determining completely, the coordination between authors and audiences.

The audience's past experiences are also part of this intersubjective encounter, as Kuiken, Miall, and Sikora's empirical work on self-modifying feelings in reading demonstrates. This idea is in line with the enactivist tenet that the organism's past history always shapes its present interactions, defining its horizon of meanings and values. When we approach literature, we build on our experiential background to work out the text's significance. The interaction between our personal values and those brought into play by a text further influences the overall patterning of our coordination. The traffic between the reader's background and literature moves in both directions, though: through a process of defamiliarization, the emotions generated by reading may create new memories that leave a mark on our core values and reshape our self-concept (see Hakemulder 84–95; Caracciolo, *Experientiality* 70)—typically, in subtle ways, but more pronounced effects may be possible, too. Although defining literature is a complex matter and falls well beyond the scope of this chapter, there is a clear correlation between judgments of literariness and a text's capacity to leave an imprint on our background in both personal and societal terms.

The affective coordination between author and audience highlighted by the enactivist approach always involves more than these two agents. At one level, literary reading is shaped by institutions and practices that influence the overall coordination by making certain values more readily accessible. For example, we may approach the same text as leisure reading or for the purposes of literary analysis: these broad interpretive frames, in Erving Goffman's sense, will steer readers' evaluation of the text,

including their emotional engagement, which is likely to become more salient in reading for pleasure. Literary analysis, by contrast, has a long history of backgrounding emotional responses in favor of more conceptually or historically oriented reading strategies.[6] These socio-cultural frames, and the institutions that disseminate them, also participate in the coordination as part of the author's and readers' background. Finally, fictional characters complicate the emotional patterning of reader-author coordinations through the already mentioned interplay of empathetic perspective-taking and sympathetic concern. In all kinds of narratives values tend to cluster dynamically around characters, as the discussion of *Tom and Jerry* demonstrates, but literary texts may create particularly complex arrangements of sympathy and empathy where, for example, different sets of values become attached to the author and to an unreliable narrator or morally transgressive protagonist. These intricacies can be easily accommodated within an enactivist account that focuses on emotional evaluation and coordination in the intersubjective practice of literary reading.

Conclusion

To borrow Colombetti's (54–56) dynamical systems theory-inspired vocabulary, enactive cognition offers a view of literary engagements in which the emotional "topology" of the coordination between readers and authors is shaped by several "attractors" (that is, factors that impinge on and orient the reader's evaluations): first, the general affectivity involved in the manipulation of expectations and schemata through literary language; second, the reader's experiential background and the emotionally charged memories it contains; third, the emotional pathways provided by established generic forms and how they bring into play socio-culturally shared values; fourth, the way in which fictional characters refract the reader's emotions. The interactions between these attractors are complex and only partially understood. The main takeaway of the enactive approach is that the embodied model of emotions can be extended to a practice as distant from basic perception as literary reading. This is a theme already emerging from the work of most cognitive literary scholars, as we've seen, who resist—more or less explicitly—the theoretical positions of computational cognitive science, with its strict focus on abstract and inferential appraisals at the expense of the experiential and bodily underpinnings of emotion.

Enactivism serves as a unifying framework for existing approaches while offering a robust alternative to the binary distinctions of appraisal theories of emotions. Such binaries include cognition proper vs. emotional experience and abstract mental processes vs. bodily feelings. The enactivist framework also allows us to reduce the divide between affect—understood as bodily arousal, which is relatively undifferentiated and often intersubjectively shared—and more targeted emotional responses to literature. Literary emotions tap into an affective structure of coordination with deep biological and developmental roots: the complexity of the resulting emotional patterning and the variety of socio-cultural values it sets in motion explain much of literature's power to influence readers and their culture at large.

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[1] Patrick Colm Hogan offers a comprehensive account of these emotional levels in literature in his book *Literature and Emotion*.

[2] See the *Oxford Handbook of Cognitive Literary Studies*, edited by Lisa Zunshine, for a helpful overview.

[3] More specifically, Oatley and Johnson-Laird see emotions as an inbuilt mental mechanism or “module” (another favorite cognitivist word). The modular theory of mind was introduced by Jerry Fodor in 1983 and has had substantial influence on AI-inspired cognitive science.

[4] For a particularly lucid articulation of this position, see Keen (“Introduction” 6, note 5).

[5] For further discussion of the multidimensionality of character engagement, see Eder and Caracciolo (*Strange Narrators*).

[6] See Korthals Altes for a Goffman-inspired discussion of frames and cognition in literary interpretation.