

The Cognitive Realism of Memory in Flaubert's *Madame Bovary*

Abbreviated title: Cognitive Realism in Flaubert

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Abstract: The 'cognitive realism' of memory in *Madame Bovary* is investigated by means of relevant research in the **cognitive sciences**, drawing conclusions which complement those of traditional literary criticism. In particular, Emma Bovary's memory is elucidated with reference to **cognitive-dissonance theory**: the human need for coherence between memory and self--image renders the trajectory of her married life psychologically explicable. The findings help account for critics' ambivalent or contradictory responses to Emma's story, and yield hypotheses concerning **readers' responses** more generally. They also suggest conclusions regarding the disjuncture between literary **Realism** (which corresponds to our assumptions about cognition) and cognitive realism (which corresponds to the underlying cognitive realities).

Memory connects readers and characters in the experience of a fictional world in several ways. Characters remember things that occurred earlier in the narrative, and we as readers remember along with them, perhaps judging the accuracy of a character's memory, or being reminded of something we ourselves had forgotten. Or characters remember events, people, thoughts, and feelings dating back further than the start of the narrative, and readers are thereby given a vicarious experience of something like remembering -- remembering what we never knew. Or, again, readers may remember what characters forget, or seem to have forgotten or misremembered. Remembering is an integral part of the process of making sense of a narrative, and of experiencing it as such.

In the most essential sense, of course, reading cannot occur at all without memory. Most basically, words and sentences previously read must be stored in ‘working memory’,¹ and enough details to convey the ‘gist’ (see e.g. Adolphs et al., 2001) must then be transferred to long--term memory if the text is a longer one, or if a text is read in separate sessions. The interactions between types of memory when reading are in fact complex and ongoing, whatever the length or nature of the text being read. Kintsch and Mangalath (2010: 3) suggest that what we know about a given word (its long--term memory structure), together with the context in which it is currently being read, creates a trace in working memory that makes available the currently relevant information about this word:

Long--term semantic memory is a decontextualized trace that summarizes all the experiences a person has had with that word. This trace is used to construct meaning in working memory. Meaning is therefore always contextual, generated from the interaction between long--term memory traces and the momentary context existing in working memory. Importantly for the study of complex and full--length literary texts, these interactions involve not only semantic traces but also syntactic constraints. (2010: 20)

In the reading and comprehension of any linguistic text, then, semantics, syntax, and processes of recall and inference interact in a complex memory--dependent operation through which meaning is generated. Fictional texts, however, unlike recipes, news articles, or essays, make memory and remembering not only functional prerequisites of the reading process, but also part of the explicit subject--matter, and hence the reader’s experience, of what is read. In fiction, through evocations of characters’ memories and by other means, experiences of remembering are induced that contribute

¹ ‘Working memory’ is the theoretical construct that denotes the ability to activate and retain limited information in the short term, as required for demanding cognitive tasks such as language comprehension, reasoning, and learning; the term is often now used to replace or include the term ‘short--term memory’, with its more passive implications. The term was coined by Miller, Galanter, and Pribram (1960), and expanded by Baddeley and Hitch’s (1974) and Baddeley’s (2000) models. See Baddeley (2003) for a review.

qualitatively to the aesthetic experience of reading as well as making reading itself cognitively possible.

In this paper, I will focus on the ways in which a famous fictional character remembers (or does not remember), and how this has affected critics' responses to her story, and may affect readers' responses more generally. I will outline relevant findings on aspects of memory from recent research in cognitive science, cognitive neuroscience, and psychology. I will consider the ways in which the evocations of memory in a Realist text correspond to -- and differ from -- these findings, which we may deem the cognitive realities of remembering, and hence how 'cognitively realistic' this text may be considered in the realm of memory.² I will ask what may be the effects on the reading experience of these correspondences with, or divergences from, our current best understanding of how memory works.³ My subject is a major nineteenth-century text usually categorized as 'Realist', Gustave Flaubert's *Madame Bovary*.⁴ In particular, I will focus on the means by which Emma's memory both

² 'Cognitive realism' denotes the capacity of a text to tap in directly to some aspect of a reader's cognitive faculties, by evoking this faculty in a cognitively accurate way. A text that is cognitively realistic corresponds to how we really remember, or see, or feel, and may therefore induce a particularly effortless imaginative response on the reader's part. The term was first used in Troschianko (2010a).

³ Dixon et al.'s (1993) distinction between 'text features' and 'text effects' corresponds to my own approach to the fictional text and its reader--orientated analysis.

⁴ Flaubert himself rejected the label of 'Realist', specifically with regard to the writing of *Madame Bovary*: 'On me croit épris du réel, tandis que je l'exècre; car c'est en haine du réalisme que j'ai entrepris ce roman' (to Mme Roger des Genettes, 30 October 1856, in *Oeuvres complètes*, XIII, 541). This does not, however, prevent our reading the text as an exemplar of Realism. The 'Realism' of this text was also one of the points of reference used by judges at the novel's trial for obscenity, conflating aesthetics and morality: Flaubert's technique 'conduirait à un réalisme qui serait la négation du beau et du bon', 428). Since then, critics have made many attempts to define Flaubert's relation to Realism: see e.g. Culler (2006: xxi-xxii) and Orr (2000: 208).

creates and reduces two types of a phenomenon known as ‘cognitive dissonance’. In this context, I will demonstrate the inseparability of memory from emotion in Emma’s mental life, and how her memories privilege the achievement of present coherence between memory and self--image over correspondence to past facts. In general, I will show that Flaubert’s evocation of the workings of memory in the title character is in general highly cognitively realistic, although there are also divergences from cognitive realism. This analysis of the cognitive realism of memory can help us to reach broader interpretive conclusions about Emma and her life that would not otherwise be possible. The scientifically informed analysis of memory in *Madame Bovary* allows us to go beyond a condemnation or exoneration of the protagonist on moral grounds. The initial serialized version of the novel was put on trial for its immorality, and acquitted following its defence as a salutary morality tale -- yet an understanding of the role memory plays in this text permits us to understand its protagonist not merely as an illustration of moral principles, but as a human being with whom we, as human beings, connect in explicable ways. Finally, by analysing *Madame Bovary*’s cognitive realism of memory, I will ask whether traditional literary Realism, as exemplified in this text and through the evocations of memory, can be considered ‘realistic’ in a cognitive sense.

An instinctive conceptualization of memory is that its function is the cognitive preservation of the past. As theories of Antiquity had it, an event, person, etc. makes an imprint on one’s mind rather like that of a stamp on wax,⁵ and this imprint can be consulted by the deliberate effort to recall the past. However, memory is in many ways less predictable, less static, and less passive than this notion implies. Memory is better thought of as a process of reconstruction than as one of reproduction:

⁵ See Plato’s *Theatetus* (191c, d). The ‘wax tablet’ conception of memory is one aspect of the more general tendency to conceive of cognition and consciousness as pictorial in essence. Plato, for instance, also describes vision in terms of an inner artist who (metaphorically) paints pictures of what we see in the soul (*Philebus* 39b, c). This pictorialist notion of consciousness has dominated philosophical and scientific thought ever since the Ancient Greeks (Troscianko 2010b: Ch. 1), and has also been prevalent in the ‘lay view’ of many aspects of human experience, from vision, imagination, and memory to consciousness more generally.

‘instead of *reproducing* the original event or story, we derive a *reconstruction* based on our existing presuppositions, expectations and our “mental set”’ (Foster 2009: 12). The opposing pair, reconstruction and reproduction, can be thought of as serving similarly opposed functions, both of which memory has to some extent to fulfil. To be useful, memory has to *correspond* sufficiently well to the original experience: an animal that cannot preserve accurate records of past situations, responses, and outcomes on the basis of which to learn and adapt its behaviours is evolutionarily unviable. However, apart from the obvious storage and retrieval problems that would be encountered by a system that preserved analogue, or even highly detailed, records of each moment of all or most experiences, there is a second, positive requirement acting in the opposite direction from that of correspondence: coherence. As Conway (2005: 595) puts it:

Coherence is a strong force in human memory that acts at encoding, post--encoding remembering, and re--encoding, to shape both the accessibility of memories and the accessibility of [various aspects of] their content. This is done in such a way as to make memory consistent with an individual’s current goals, self--images, and self--beliefs.

Memory is dependent upon the behaviours and beliefs of the present as well as upon past realities, and as I will show below, this fact is central to the evocation of memory in *Madame Bovary*.

Memory, like all of cognition, is driven by specific goals, and not least by the need to avoid goal--change, and the risks this poses to the maintenance of a stable self--image. For instance, evidence that goes against a current life--goal such as establishing a career in academia -- the memory of reading about recent job cuts in departments in one’s own field, say -- may be dealt with by ignoring the information or seeking out opposing arguments to reduce this memory’s significance. There is evidence (Beike and Landoll 2000, Greenwald 1980, Holmes 1970) that dissonant memories are dealt with by strategies such as outweighing, justification, closure, and processing neglect -- although in other cases (see Förster, Liberman, and Higgins 2005: esp. 221) they may be disproportionately ruminated upon (so, one may instead recall those job cuts repeatedly, painfully but serving to keep the unfulfilled goal of one’s career choice in mind, maximizing the likelihood of noticing and acting upon future prospects in this or other fields). Given the many practical requirements for correspondence in the short--term, recent memories tend to ‘correspond’ more than

they ‘cohere’, whereas the opposite is true of long--term memory (Conway 2005: 597). This may be one reason why long--term memories are more frequently foregrounded in literary texts, including *Madame Bovary*: the distortions and suppressions carried out for the sake of identity--bolstering coherence are more revealing of fictional characters’ motivations and personality than is the correspondence--driven preservation of accurate detail in the service of transitory behavioural goals.

Textual evocations of memory are part of the more general evocation of character and of action: personality is conveyed in part by what is remembered (or not), and how and when it is remembered, whilst behaviours and interactions between characters are motivated in part by memories (and by things forgotten or misremembered). The characters in fictional texts are of interest to us as readers because they correspond to some extent to how real human beings think, feel, and behave, or because they diverge in comprehensible ways from the realities of human experience as we understand them. To the extent that we believe in the potential reality of the people and lives evoked by a fictional text, we will engage with them cognitively and emotionally. This is true even of genres such as fantasy and science fiction, which seem to reject a direct connection with familiar realities, whether by altering the nature of subjectivity (to that of elves or aliens rather than humans) or by transposing the action to remote or imaginary settings (outer space, or an imagined world in which the physical or cultural laws of this world do not hold). We engage with characters and their actions and interactions by drawing comparisons and contrasts with those we know and understand; even the most alienating sci--fi cannot be conceived of as anything other than a variation on the human, not least because human language (however tweaked to convey difference) has evolved to express human realities, and we have no other frame of reference than the human. Furthermore, there is no necessary conflict between fictionality and emotional response; we need not be reduced to the sterile conclusion that an emotional response to fiction ‘involves us in inconsistency and incoherence’ (Radford 1975: 78).⁶ There is evidence that caring about fictional characters in fact bears many similarities in

⁶ The ‘paradox of fiction’ is also a starting point or point of reference for a number of contributions to the edited volume *Emotion and the Arts* (ed. Hjort and Laver 1997).

cognitive terms to caring about other real people, especially strangers (e.g. Vermeule 2009).⁷ Detailed comparison of any aspect of fictional characters' cognition with our own does not, however, presuppose any naïve attribution of historical 'reality' or 'pseudo--reality' to these characters;⁸ we do not have to inquire into the possible real--life models for characters to acknowledge that their appeal is based on cognitive realism (as defined above), the analysis of which is an important means of enhancing our understanding of the connections that may be established between text and reader.

In *Madame Bovary*, the memories of the title character are the medium by which she experiences emotional dissonances, and by which she seeks emotional coherence at the expense of factual correspondence. The extent to which Emma's memories are affected by her emotions -- and are emotional in their manifestations -- powerfully illustrates how memory is a 'cognitive' function not in the sense of being affect--neutral, or 'rational'. Rather, memory is 'cognitive' in the psychologically valid sense of being inherently interconnected with all the other aspects of cognitive

⁷ See also a structuralist counterclaim -- that fictional characters are understandable despite being fundamentally unrealistic -- in Knight (1997: 441).

⁸ Flaubert's typically contradictory remarks on the relation or lack of it between himself and his heroine Emma seem expressly designed to prevent textual judgements based on tenuous autobiographical connections: he claims on the one hand that 'Madame Bovary n'a rien de vrai. C'est une histoire *totalelement inventée*; je n'y ai rien ni de mes sentiments, ni de mon existence. L'illusion (s'il y en a une), vient au contraire de *l'impersonnalité* de l'oeuvre' (to Mlle Leroyer de Chantepie, 18 March 1857, in *Oeuvres complètes*, XIII, 567) and on the other hand that 'Ma pauvre *Bovary*, sans doute, souffre et pleure dans vingt villages de France à la fois, à cette heure même' (to Louise Colet, 14 August 1853, in *Oeuvres complètes*, XIII, 383). The first statement separates the novel, as 'invented', from 'truth' or 'reality' in both a general and a personal sense; the second attributes to it not just an unquestioned realism, but a ubiquitous *reality*. (The oft--quoted statement 'Madame Bovary, c'est moi' is probably apocryphal; on the means by which it became a Flaubertian *idée reçue*, see e.g. <http://passouline.blog.lemonde.fr/2009/10/25/madame-bovary-cest-qui/>; accessed 24 November 2010.)

life that regulate behaviour, an important one of which is emotion. In evolutionary terms, emotion is an appraisal process which contributes to our assessment of a situation as requiring, for example, fight or flight responses. To feel is to judge an object or a situation with regard to what it *means to you*: what its meaning is for future personal concerns or actions (Frijda 2007: 93): there is no fundamental disjuncture between ‘thinking’ and ‘feeling’. The Platonic distinction between the two is the basis for common assumptions about ‘cognitive’ faculties such as thought and memory: that they ideally have no emotional component, and that if they do, they are reduced in validity by the ‘intrusion’ of emotion. But emotions have evolved as a crucial part of all cognition:⁹ in the case of memory, emotional stimuli induce a physiological state that aids survival in life--threatening situations by enhancing memory encoding, retention, and retrieval through increased neuro--chemical activity. For instance, the sight of a man similar to the one who once mugged you will induce emotions of fear as experienced during the original event, and your memories of that event, as enhanced by the re--experienced emotion, will be more vivid than memories of emotionally neutral events.¹⁰ Hence these memories are more likely to trigger the behavioural response appropriate in the first instance, that is, flight (which may now be experienced simply as nervousness, muscular tension, a ‘shiver down the spine’, and so on). There is thus also no fundamental disjuncture between ‘remembering’ and ‘feeling’: numerous well--documented effects modulate the interactions of memory and different types of emotion (see e.g. Levine and Pizzaro (2004) for a review), and many of these are manifested in the relation between past and present emotions throughout Emma Bovary’s life.

⁹ The term ‘cognitive realism’ is also based on a concept of cognition as encompassing emotion; when, in what follows, I refer to both ‘cognitive’ and ‘emotional’, it is as reminder and emphasis of their interconnection.

¹⁰ Emotionally enhanced memories may be more vivid, but they are not necessarily more accurate, since heightened emotion, especially extreme stress, can result in narrowed attention (the ‘weapon focus effect’) and perceptual biases (e.g. Ochsner 2000), and emotion can enhance memory for gist at the expense of that for detail (Adolphs et al. 2001).

Many of the interactions between memory and emotion which Emma experiences can be attributed to cognitive dissonance (Festinger 1957, Aronson 1969). Cognitive dissonance is the result of holding two incompatible cognitions simultaneously, or, more specifically, of being in a state or acting in a way that contradicts a fundamental element of one's self-concept or belief-system.¹¹ The element contradicted by a current state or action may be, for instance, the belief that one was born for passion and luxury, or the conviction that 'I am intelligent'; these both play important roles in Emma's self-concept. Cognitive dissonance -- the uncomfortable feeling caused by holding conflicting ideas simultaneously -- manifests itself directly as anxiety or unease (Emma experiences 'un insaisissable malaise' (83) in the early days of her married life), but can also have secondary effects on how emotional appraisals are made and how they and life events are remembered, as part of the attempt to reduce dissonance. Emma makes a single decision (to marry Charles) which results in the disappointment of her dreams of wealth, sophistication, grand passion, and all the other ideals she has gleaned from literature. This is a form of hedonistic dissonance (dissonance created by actions that result in negative consequences for oneself) which reduces all subsequent decisions (to blame Charles for everything, to have affairs, to spend more money than she and Charles have on clothes and furnishings, to kill herself) to vain attempts to negate or vindicate that initial decision. These later decisions in turn create moral dissonance (dissonance aroused when acting in a way that causes negative consequences for others), so that Emma's married life becomes defined by two major cognitive dissonances and the attempts to reduce them. Both the dissonances themselves and the cognitive combating of them occur through memories that are directed less towards accurate recall than towards cognitive and emotional coherence.

The progression of emergent dissonances and their attempted resolution, both through coherence--orientated operations of memory, can thus help us understand the entire trajectory of Emma's married life. Emma's rapid disappointment in her married life is itself a direct consequence of her memories of the romantic novels she read at the convent, which defined 'les mots de *félicité*, de

¹¹ For an early and a recent criticism of cognitive--dissonance theory, see Chapanis and Chapanis (1964) and Chen and Risen (2010).

passion et d'ivresse' (78) in a way that real life could never live up to. She reduces the resulting memory--induced dissonance in two main ways. Firstly, she does so by making Charles, and her marriage to him, into the unequivocal cause of her misery by means of a thread of reasoning running something like this: I am passionate and intelligent and deserve happiness, but I cannot be passionate or intelligent or happy with you, therefore you must be dull, stupid, and selfish. The hyperbolic but psychologically necessary conclusion is as follows: 'Pour qui donc était--elle sage? N'était--il pas, lui, obstacle à toute félicité, la cause de toute misère, et comme l'ardillon pointu de cette courroie complexe qui la bouclait de tous côtés?' (146). Charles's generosity, both emotional and material, his good sense, and his love of her are ignored in favour of the version of him which lets Emma be a victim, and allows her to preserve her self--concept as intelligent, since the greatest intelligence can sometimes be the victim of deception, or of momentary madness: 'Comment donc avait--elle fait (elle qui était si intelligente!) pour se méprendre encore une fois? Du reste, par quelle déplorable manie avoir ainsi abîmé son existence en sacrifices continuels?' (214). Memories of past reading--matter are responsible for how she defines her relation to her husband, he as the cause of unhappiness, she as the intelligent but briefly mad or mistaken victim.

Memories thus bring about a certain (limited) understanding of the present. They also reorder other existing memories such that they correspond with the new understanding of the present. For example, when watching the fictional marriage performed at the opera, Emma compares herself with the heroine, and her melodramatic metaphor of the abyss makes her the helpless victim, and her wedding day a day of mistaken joy on which all suffering began:

Emma rêvait au jour de son mariage; et elle se revoyait là--bas, au milieu des blés, sur le petit sentier, quand on marchait vers l'église. Pourquoi donc n'avait--elle pas, comme celle--là, résisté, supplié? Elle était joyeuse, au contraire, sans s'apercevoir de l'abîme où elle se précipitait... (247-48)

The wedding thus fulfils the role of the past 'catastrophe extraordinaire qui l'avait bouleversée [...] la cause de ce qui la faisait souffrir' (205). Attributing to the single event of her marriage, as 'extraordinary catastrophe', all subsequent unhappiness, and reordering her memories of the day accordingly, is an easier strategy than asking whether her whole self--concept might be

flawed, or whether her behaviours might need changing. This predominant focus on negative event outcomes and on the consequences of failure to attain certain goals is a clear manifestation of the state of sadness or mild depression which rapidly sets in after the marriage; as the quotations given in the last two paragraphs illustrate, Emma reflects far less on future goals than on past failures and disappointments. Sadness induces the cognitive--emotional 'appraisal tendency' to concentrate on failure and its consequences in order to aid adjustment to the failure and its implications for other goals (Levine and Pizarro 2004: 543) -- and the tendency is all the stronger given that such reflection also forms part of Emma's dissonance--reduction strategy.

The dissonance--reducing strategy of making Charles and the marriage the cause of all unhappiness has a further consequence for memory: it creates nostalgia for life before marriage. This is also more a consequence of the unhappiness of present circumstances, and the changed appraisals of the past that have arisen from this unhappiness, than it is an accurate record of past realities. When she is reminded of her days at the convent (319), or the years spent at home with her father, Emma engages in the common act of nostalgically enhancing the happiness of these past eras: her time at home is recalled as a series of bucolic images of simplicity, and through the abstractions of 'bonheur', 'liberté', and 'espoir' (205). Recent studies have demonstrated two interesting facts about memory of one's own past: firstly that people's reports of past emotion are dependent upon their current appraisal of the past events in question (e.g. Safer et al. 2002), and secondly, paradoxically, that nostalgia -- positive sentiments about a past stage of one's life, with or without the desire to return to that past -- may be due to positive feelings caused by the act of successful recall (Leboe and Ansons 2006). That is, the mere fact of managing to remember the past creates pleasure, which is then misattributed to a pleasant past. Given the time she spends and the pleasure she derives from reminiscing, this second phenomenon may well be contributing to Emma's nostalgia, and in any case it is clear that, conforming to the first finding, Emma's nostalgic memories have more to do with present unhappiness than with past happiness. The extent of the change which has occurred between past experience and present recollection is manifest to the reader who, reading of Emma's memory of the idyllic simplicity of her youth in the country (e.g. 204-5), recalls that at the time, we learnt of her that 'Mlle Rouault ne s'amusaît guère à la campagne, maintenant surtout qu'elle était chargée presque à

elle seule des soins de la ferme. Comme la salle était fraîche, elle grelottait tout en mangeant [...]’ (62-3). The extreme difference between the past experienced as present and the past remembered is highly revealing of Emma’s emotional state as she remembers, and here it is our memories as readers that allow us to identify the telling discrepancy. Nonetheless, this is unlikely to result in mere censure of her inconsistency, because, again, the essential cognitive realism of the mental manoeuvre is one which we can all recognize from our own experience, and makes her as much a character to be empathized with as one to be condemned. More broadly, the cognitively realistic intertwining of emotion and memory in the service of a coherent life--story complicates such condemnation, as our own emotions are engaged inseparably from our own memories, inferences, and reasoning, and the inseparability of Emma’s is both felt and understood -- even whilst our preconceptions about memory tell us that something is not as it should be.

Another form of emotional memory, regret, is the precursor to Emma’s second dissonance--reduction strategy, which is to seek confirmation of her self--concept as intelligent and deserving of happiness, passion, and luxury through affairs with other men. Emma begins to regret missed chances for happiness with other men. Her regretful memories of the ball at La Vaubyessard are part of a sequence of attentional, perceptual, and cognitive biases that clearly signal the importance of the Viscount (and all men such as him) to Emma’s search for emotional coherence. At the ball, Emma focuses only on the aspects of the evening which reinforce her concept of wealth and breeding as positive sources of pleasure, not noticing, for example, how Charles is ignored for hours on end, standing watching a card game he doesn’t understand (95). Her emotion reaches its peak when she is asked to dance by the Viscount, and the physical exertion of the dancing adds to the emotional excitement; finally, ‘elle se renversa contre la muraille et mit la main devant ses yeux’ (94). When, back at home, she sees and smells the cigar case dropped under their carriage on the way home by the passing horsemen, one of whom might have been the Viscount, she invests it with an imagined history, concocted around her memories of him (98).¹² Later, when she is being seduced by Rodolphe,

¹² Marder (1997: 59-60) notes how Emma uses the cigar case to ‘preserve her memory of the event [of the ball]’, but strays from demonstrable textual fact when she goes on to claim that this entails her

the equivalent role of the two men is made clear when the smell of him reminds her powerfully of the Viscount:

même elle sentait le parfum de la pommade qui lustrait sa chevelure. Alors une mollesse la saisit, elle se rappela ce vicomte qui l'avait fait valser à la Vaubyessard, et dont la barbe exhalait, comme ces cheveux--là, cette odeur de vanille et de citron; et, machinalement, elle entreferma les paupières pour la mieux respirer. (181)

Here an 'involuntary memory' (one not deliberately retrieved) is cued by the smell of the pomade, which resembles that used by the Viscount, and Emma closes her eyes so as to focus on this sensory input alone, and the memories it triggers. 'Involuntary memory' can be conceived of as arising from the interaction of a current life--situation and the immediate situation, the former possibly exerting a priming effect on the cues that appear in the latter (Berntsen 2007). The life--situation of an unhappy marriage primes the recollection of a closely related past event within the immediate situation of this new seduction, and the past event can be recalled because Emma is able to remember the smell of the Viscount's pomade clearly and without effort, nearly four years later, even though most of the other details (save the sense of regret) were forgotten in a matter of weeks: 'Et peu à peu, les physionomies se confondirent dans sa mémoire, elle oublia l'air des contredanses, elle ne vit plus si nettement les livrées et les appartements; quelques détails s'en allèrent; mais le regret lui resta' (97). The fact that it is a smell that triggers memory is psychologically significant: because the olfactory system synapses directly with the amygdala--hippocampus complex, which can be considered the 'neural substrate of emotional memory' (Herz and Schooler 2002: 22), olfactory information has direct access to emotional and memory--related neural areas, which makes smells an effective and emotionally potent trigger even for very old memories. When, as here, a smell is part of the original emotionally arousing stimulus, the connections between smell, memory, and emotion are intensified by attention--narrowing (Easterbrook 1959) and prioritized processing (Kensinger 2004). These lead to a long--

using it 'as if this thing could somehow objectify lost time', as 'a temporal lost object, a representational container capable of incorporating time'. Its non--metaphysical capacity to stimulate memory is significance enough.

term selective--memory effect consisting of memory enhancements in the long term for the central stimulus, and memory deficits in recalling peripheral elements (Christianson 1992). Furthermore, the 'post--stimulus elaboration hypothesis' proposes that more effort may be invested in retrospective elaboration of an arousing emotional experience than of a neutral one, and that the links between new and previously stored information thus created, and the deeper level of processing involved in creating them, result in better memory. 'Post--stimulus elaboration' is certainly what Emma engages in: she keeps herself awake after the dancing stops (87), to revel in the illusion of luxury that will soon end, presumably connecting this specific event with all her prior notions of romance, luxury, and happiness (80-1); and, back home, 'Ce fut donc une occupation pour Emma que le souvenir de ce bal' (97), and she procures ever more reading matter to keep investing the memory with further significance. She associates the cigar case with the Viscount; she associates him with his imagined mistresses (modelled, doubtless, on all the lovers in the books she has read, e.g. 80) and with Paris, and all the preconceptions she has of the capital. The lasting emotional response to the remembered stimuli is 'regret' (that the excitement couldn't last, that she didn't somehow act to make it last), itself a consequence of the second of Emma's dissonance--reducing beliefs: that she can be (and has been) passionate and happy with other men. This regret gradually makes it impossible for her to remember anything but the idealized sources of that regret, and, equally, makes those impossible to forget.

Emma's regret about not having acted to make anything happen with Léon during the first period of their intimacy is also fuelled by nostalgic recollections of him and the time spent with him, themselves fuelled less by love of him than by hatred of the present. The day after Léon's departure, she recalls him as more perfect than he ever was:

Comme au retour de la Vaubyessard, quand les quadrilles tourbillonnaient dans sa tête, elle avait une mélancolie morne, un désespoir engourdi. Léon réapparaissait plus grand, plus beau, plus suave, plus vague; quoiqu'il fût séparé d'elle, il ne l'avait pas quittée, il était là, et les murailles de la maison semblaient garder son ombre. Elle ne pouvait détacher sa vue de ce tapis où il avait marché, de ces meubles vides où il s'était assis. La rivière coulait toujours, et poussait lentement ses petits flots le long de la berge glissante. Ils s'y étaient promenés bien des fois, à ce même murmure des ondes, sur les cailloux couverts de mousse. Quels bons

soleils ils avaient eus! quelles bonnes après--midi, seuls, à l'ombre, dans le fond du jardin! Il lisait tout haut, tête nue, posé sur un tabouret de bâtons secs; le vent frais de la prairie faisait trembler les pages du livre et les capucines de la tonnelle... Ah! il était parti, le seul charme de sa vie, le seul espoir possible d'une félicité! Comment n'avait--elle pas saisi ce bonheur--là, quand il se présentait! Pourquoi ne l'avoir pas retenu à deux mains, à deux genoux, quand il voulait s'enfuir? Et elle se maudit de n'avoir pas aimé Léon; elle eut soif de ses lèvres.

(159-60)

This passage provides a potent evocation of regret as an emotional and coherence--orientated form of memory which makes up part of the delicate balance of Emma's conceptualization of herself and her situation. Already, a few months after the fact, the times she spent with Léon by the river have coalesced in Emma's memory into a generalized episode that 'stands for' all the individual instances: the sunshine, the place where he sat, the flowers, make this an extremely efficient, 'schematized' representation (see Barclay 1986) of a series of more equivocal events (e.g. 127-30, 143). This summarized memory emphasizes the invariant quality of the attraction between Léon and Emma at the expense of changing and less straightforwardly idyllic details. It does so with a cognitive efficiency that is perfectly constructed to allow Emma to attribute all her present unhappiness to her failure to act in this regard. The fact that Léon appears, along with all the other increases in the desirability of his appearance and character, also as 'plus vague' is a further function of his status as remembered, and as the object of schematizing regret. The direct juxtaposition of the darkness of Emma's mood and the completeness of Léon's remembered perfection is a clear expression of the extent of her regret, and shows this regret -- like nostalgia -- not to be something that emerged directly from the original experience but to be a consequence of her current emotional state, which has induced memories that improve on past realities.

The initial parallel which is drawn here between Emma's current state and the morning after the ball is also, of course, instructive, in that it increases still further the generalizing equivalence between all the men in her life, and between all the missed chances and their consequences for happiness. Emma engages in retrospective reasoning, supported by generalized and idealizing

memories, to find the cause of her current bleakness in her inaction where Léon was concerned, just as she did with the Viscount. Savitsky, Medvec, and Gilovich (1997) found that (even controlling for differences in their life impact) inaction regrets, which felt like psychological ‘unfinished business’, were more often ruminated over in the long term, therefore more easily recalled, and increasingly likely to be the lasting object of regret than action regrets. Gilovich and Medvec (1995) attribute this temporal pattern of regret (inaction regrets becoming more salient in the longer term) to three possible factors. Lasting inaction regrets may be due firstly to the greater ease with which we comprehend causal factors that compel behaviour than those that inhibit it, and secondly to a tendency towards increased confidence that past obstacles could have been overcome. The rhetorical questions in Emma’s thoughts (‘why didn’t I act?’) make clear that these factors are playing a part in her regret. Thirdly, long-term inaction regrets may be due to an asymmetry in consequences: with inaction regrets, the possible benefits of having acted are of an open-ended nature, so can grow in imagined scope over time, whereas the negative outcomes of a regretted action remain static and can thus be countered by various compensation strategies. This enhancement of formerly possible benefits of acting occurs strongly in Emma’s case, and within twenty-four hours: her past inaction represents, as Davison and Feeney (2008: 387) put it, ‘a blank canvas of possibilities for what “might have been”’, and she fills this canvas with the superlative abstractions of ‘charm’, ‘joy’, and ‘happiness’.

Regret of ‘an accumulated, unfocused pattern of inaction’ (Gilovich and Medvec 1995: 381) is powerful in Emma’s case: she had many opportunities to say or do something explicit to initiate an affair with Léon, but she did not do so (although this pattern of inaction culminated in the moment of Léon’s parting, when she failed to beg him to stay, or to tell him how she felt, 153). As soon as he is gone, she dwells on his supposed perfection, and by extension on the happiness she might have found with him, such that, as Davison and Feeney (2008: 398) have it, ‘the emergent quality of general regrets makes them [...] more like retrospective judgements than straightforward recollections’. When we learn of Emma, in the midst of her affair with Rodolphe, that ‘Elle se repentait, comme d’un crime, de sa vertu passée, et ce qui en restait encore s’écroulait sous les coups furieux de son orgueil’ (214), the simile equates the general pattern of inaction with a specific (criminal) action. This cognitive-linguistic reduction of a repeated into a singular event allows Emma’s virtue to be much

more easily dismissed, destroyed, and left behind than it could be were it to be remembered as a recurrent part of herself. The simile, as linguistic feature and figure of thought, connects language and cognition in a way that completes the shift from regret of inaction to justification of (adulterous) action. The simultaneous naturalness and cognitive sleight of hand of the move towards dissonance--reducing adultery makes this stage of Emma's life as comprehensible as it is disconcerting. The cognitively realistic nature of these contradictions makes Emma's reminiscences more than tritely poetic fancies -- or rather, it gives these fancies their significance and necessity, and hence makes them powerful evocations of the fallibilities of human cognition, as well as of the irritating indulgences of a deluded woman. Many readers may be inclined to stand in judgement upon such idealizing excesses, but the location of these excesses in the complex network of motivation described above makes them hard to dismiss as complete trivialities.

Emma then takes first Rodolphe and later Léon as lovers, using these other men to confirm the reality of her identity: she can be passionate, intelligent, happy, with them if not with her husband. Memories of past reading are also crucial here: at the opera, 'Elle se retrouvait dans les lectures de sa jeunesse, en plein Walter Scott' (246), and soon afterwards, partly as a consequence of this heightened romantic state, she succumbs to Léon's seduction. But being with these other men creates the second dissonance: she now also experiences moral dissonance (aroused when acting in a way that causes negative consequences for others) because of how she is hurting Charles and acting against social mores. At the inevitable point where the affairs with Rodolphe and with Léon begin to turn sour, she responds, on both occasions, with renewed passion, born of a desperation in which regret and desire conflict. With Rodolphe, the desire and the regret coexist: 'elle redoubla de tendresse; et Rodolphe, de moins en moins, cacha son indifférence. Elle ne savait pas si elle regrettait de lui avoir cédé, ou si elle ne souhaitait point, au contraire, le chérir davantage' (203). With Léon, she allows herself a brief moment of emotional honesty, but the regret it implies is not made explicit, and desire soon succeeds it: 'elle s'avouait ne rien sentir d'extraordinaire. Cette déception s'effaçait vite sous un espoir nouveau, et Emma revenait à lui plus enflammée, plus avide' (302). Thus in both these cases, Emma's memories of the ways in which she has 'compromised herself' contribute to enhance both her regret and her desire.

The ‘effort--justification paradigm’ of cognitive--dissonance reduction proposes that the more extreme (effortful or degrading) the means of achieving an aim, the more highly the aim, once reached, will be valued (Aronson and Mills 1959). As predicted by this model, Emma’s regrets at having acted as she has do not make her denounce herself and her lovers, but instead make her seek to reduce the dissonance created by her knowledge of her immorality and lack of delight by exaggerating the perfection of her lovers and the force of her pleasure, and memories play an important role in this exaggeration, both countering and enhancing Emma’s present dissatisfaction: ‘en écrivant [à Léon], elle percevait un autre homme, un fantôme fait de ses plus ardents souvenirs, de ses lectures les plus belles, de ses convoitises les plus fortes [...]’ (308).¹³ Léon, as Emma longs for him, is created out of a potent mixture of memory, desire, and regret in which no single element can win out over the others, since Emma’s second form of cognitive dissonance is only partially resolved.

This solution is an essentially unstable one, since the exaggeration of her own desire and her lovers’ perfection only makes more, and more thrilling, affairs necessary, which will in turn lead to more dissonance thanks to disappointment and regret. There is, ultimately, no way of stabilizing this situation or of neutralizing its conflicting elements, except deep self--analysis and fundamental life changes -- or death. The two coexisting dissonances and their incomplete resolutions are connected by a fragile set of coherence--orientated memories that could, at any moment, be collapsed by memory itself. When Emma’s memory fails her in the shock that follows Rodolphe’s final refusal of financial

¹³ Emma’s excessive purchases are her final tactic: they serve to offset her unhappiness, her regret, and the wrongness of her decision to marry, and she justifies the purchases through the extent of her ‘sacrifices’, and by assuring herself and Charles that they are ‘indispensable’. But the more she spends, the greater her regret (‘quand ses yeux se reportaient [...] sur toutes ces choses enfin qui avaient adouci l’amertume de sa vie, un remords la prenait, ou plutôt un regret immense et qui irritait la passion, loin de l’anéantir’, 313) and her sense of impurity (‘Elle aurait voulu, s’échappant comme un oiseau, aller se rajeunir quelque part, bien loin, dans les espaces immaculés’, 309) and thus her desperate, passionate need for happiness from them, exactly as with her lovers.

help, she does still remember her love (of whom, it is not specified), and this memory is experienced as though she is losing her soul through it, as through a wound:

elle ne se rappelait point la cause de son horrible état, c'est--à--dire la question d'argent. Elle ne souffrait que de son amour, et sentait son âme l'abandonner par ce souvenir, comme les blessés, en agonisant, sentent l'existence qui s'en va par leur plaie qui saigne. (326-27)

The desire for a solution to her predicament makes Emma transfer the entire cause of her suffering on to what she designates her 'love', makes her memory recall nothing but this love (see below, p. 000, on post--traumatic amnesia), and hence exchanges the pain of shame, guilt, and responsibility for the much gentler agony of a love remembered as innocent and unrequited. A little later, as she lies dying, the mention of the nurse induces an emotionally unbearable response in her: 'Et, à ce nom, qui la reportait dans le souvenir de ses adultères et de ses calamités, madame Bovary détourna sa tête, comme au dégoût d'un autre poison plus fort qui lui remontait à la bouche' (331). Having visited the nurse with Léon, the word recalls him and all that he represents in terms of infidelity and its consequences; it is as if she has drunk another, stronger poison than the arsenic she has already swallowed. The metaphors of physical harm -- the wound and the poison -- by means of which memory is invoked make it a powerful equivalent to the actual cause of her death: arsenic (whose location she remembered perfectly, 328) was the immediate means of suicide, but her memory is the cognitive cause. Memory creates the first cognitive dissonance, and serves to reduce but not to negate it and the second; ultimately it keeps both present in Emma's mind, as a conflict between the memories that tell her she is as she believes herself to be, and deserves all she desires, and those that remind her what lengths she has gone to to reassure herself of precisely that.

Madame Bovary is the story of a woman whose memories, in spite and because of the extent to which they help create coherence within her own self--image and life--story, do not permit her any

peace.¹⁴ The famous ‘impersonality’ of Flaubert’s narrative mode in this novel,¹⁵ in which the focalization shifts between omniscience, a limited external focalization with access to none of the characters’ perspectives, and, primarily, variable internal focalization that adopts various of their perspectives in turn, means that Emma’s weakness, shallowness, and failure to learn from experience are presented not as pre-judged flaws, but as parts of the experience of being human. The single seemingly unequivocal, unironized judgement brought to bear on Emma is that she has been corrupted by the reading of literature: ‘Pendant six mois, à quinze ans, Emma se grissa donc les mains à cette poussière des vieux cabinets de lecture’ (80).¹⁶ The overtly judgemental nature of this statement, conveyed through the basic metaphorical equivalence of the dirty with the immoral, may, however, be better read as ironically undermining the easy answers of such received wisdom, and as suggesting that the problem lies in Emma’s attitude to literature rather than in literature itself.¹⁷ The source of

¹⁴ See Auerbach (1957: 431) on Flaubert’s innovation in ‘directly captur[ing] the chronic nature of this psychological situation’. The novel has given rise to its own psychological condition, ‘bovarysme’, defined by *Le Nouveau Petit Robert* as ‘Evasion dans l’imaginaire par insatisfaction; pouvoir “qu’a l’homme de se concevoir autre qu’il n’est” (J. de Gaultier)’ (2000: 287), but the preceding analysis has shown that no special diagnosis is required to comprehend Emma’s psychology.

¹⁵ See Flaubert’s correspondence above, n. 8. Auerbach (1957: 432) coins the term ‘objective seriousness’ to describe Flaubert’s impartiality, but the connected claims that he exercises no ‘psychological understanding’ (432) and does not provide any ‘naturalistic representation of consciousness’ (428) are hard to accept unreservedly.

¹⁶ See also Riffaterre (1981: 6) (‘I need hardly point out that *Madame Bovary* is a fiction about the dangers of fiction’) and Culler (2006: 146) (‘If there is anything that justifies our finding the novel limited and tendentious it is the seriousness with which Emma’s corruption is attributed to novels and romances’).

¹⁷ Williams (1973:53-55) argues that Emma’s character determines how she responds to literature, rather than literature moulding her character.

Emma's 'corruption' may thus be seen as consisting in her belief that literature can and should be immoral: she lets it redefine the emotional abstractions of 'bonheur' and 'félicité' and their constituents ('liberté', 'espoir', 'charme', 'passion/ivresse'), and makes them central to her appraisals of life (see above, pp. 00). Emma's clichéd response to a certain sort of novel is, then, what this novel presents as the cause of the original dissonance, which makes her marriage seem instantly such an unbearable disappointment and sets the rest of the progression above in motion.

Tracing the means by which memory serves both to mitigate and to exacerbate that dissonance, and others arising from it, enables us to see Emma as more than a wicked woman,¹⁸ or a misguided fool,¹⁹ or a victim of society,²⁰ men,²¹ womanhood,²² fate,²³ language,²⁴ or romantic fiction (see above, n. 16), or even a sufferer of mental illness.²⁵ A study of Emma's memories allows us to understand her as merely -- and fully -- human, and as such provides scope for flexible readings that need not posit one single destructive trait or agent or 'tragic flaw'. A better comprehension of the

¹⁸ Henry James (1919 [1878]: 205) condemns her in an early review as 'ignorant, vain, naturally depraved'.

¹⁹ Barash and Barash's *Madame Bovary's Ovaries: A Darwinian Look at Literature* (2005: 101) argues that an evolutionary approach to literary criticism can help us understand how 'smart women [like Emma Bovary] really do make foolish choices'.

²⁰ Cook (1973: 304): 'Emma is rather a reflector of meagerness than a meager reflector'.

²¹ Ferguson (2002: 771-72) argues that Charles 'actually does fail Emma', and Bourgeois (1968: 126) contends that Homais plays the role of 'le serpent biblique', 'le diable', who is 'à la base de chaque malheur qui s'abat sur l'héroïne et finalement l'écrase et la tue'.

²² See Sabiston (1973: 339) on the 'prison of womanhood' in which Emma is incarcerated, in part because she has "internalized" the values of her society.

²³ See e.g. Paskow 2005: 331-33.

²⁴ See Tanner 1979: esp. 363-65.

²⁵ Beizer (1994: 138) diagnoses Emma with hysteria (see also Goldstein 1991); Marder (1997) pronounces her to be sick with 'temporal bulimia'.

inevitable nature of the progression from cognitive dissonance to distortions of memory, to the state that means suicide is the only escape, helps to explain why it is possible to engage with the protagonist as a human being rather than as simply sinner or sinned--against.

Emma's weakness lies in her inability to realize what her mind is doing to her, and, through such awareness, to change her mental practices for the better. But the mutually reinforcing nature of the patterns that are soon established makes this an understandable failing. The common conceptualization of memory as an essentially passive means of preserving the past, which may fail to preserve but does not tend to distort, is what makes Emma succumb so unwittingly to her distorting memories and their effects, and what makes the reader likely to feel at once alienated from her and drawn into her story by its cognitive realism.²⁶

I have demonstrated that the evocation of memory in *Madame Bovary* is cognitively realistic in fundamental ways. Is, then, the cognitive realism of Emma's memory in this text flawless? The answer, of course, is no: there are slight deviations from cognitive realism in Flaubert's evocation of various aspects of Emma's memory. For instance, her 'post--traumatic' amnesia is an occurrence common in films and novels but extremely rare in real life (McNally 2003: 186), and its evocation thus corresponds to common preconceptions about how memory works rather than to the realities. The imagery of memory as death may also be considered hyperbolic, despite the completeness of Emma's mental and emotional entrapment as demonstrated above. However, divergences such as these do not significantly detract from the fundamental cognitive realism of the biography of a mind

²⁶ This sense of incontrovertible realism seems to have been an effect that Flaubert deliberately sought in writing the novel: 'Ce qui est atroce de difficulté, c'est l'enchaînement des idées et qu'elles dérivent bien naturellement les unes des autres' (to Louise Colet, 19 June 1852, in *Oeuvres complètes*, XIII, 206). Williams (1973: 16) cites this remark and parses it as expressing Flaubert's efforts to achieve a presentation of mental causes and effects 'consistent with some notional standard of psychological feasibility'; this 'standard' may now be seen to constitute 'feasability' not just in the notional sense of conforming to a (possibly erroneous) lay view, but also in conforming to psychological realities.

created through memory and cognitive dissonance, and indeed serve to render more vivid some aspects of this account. The frequency with which amnesia is evoked in fiction and films means that its occurrence here will be accepted as plausible by many readers, and will be likely to induce a sense of comfortable recognition as far as the evocation of psychology goes, as well as the thrill of recognizing a supposed psychological marker of deep trauma.

Those aspects of the evocation of memory which are cognitively realistic are likely to have a different, more complex, effect. Our instinctive conceptualizations of memory as a passive storage capacity, which either manages or fails to provide us with accurate reproductions of past events, may make evocations of memory such as those found in *Madame Bovary* unsettling, because their emphasis on distortions for the sake of mental and emotional coherence contradict the lay view. However, these evocations may also be compelling because of their cognitively realistic nature²⁷ -- and the possible duality of response thus created may help explain the dualities often present in critics' responses to Emma's story: condemning yet simultaneously empathizing or sympathizing with her, or even admiring her. Tillett (1966), for example, condemns Emma as a 'dramatizer of self' (5) who is 'completely selfish' and lacks all 'warmth of heart' (3) but also sympathizes with her plight as 'a young woman far superior in intelligence and sensibility to her acquaintances, ambitious, sighing for life in Paris, suffering from frustration, unwisely married, driven by despair to death' (5). Henry James (1919 [1878]) states this conflict explicitly, through a sequence of reflections on Emma's character and the reader's response to it. James describes Emma as 'ignorant, vain, naturally depraved' (205), and seems to espouse the opinion that women like her 'deserve but a limited degree

²⁷ Neither type of response presupposes a specific, articulate awareness on the reader's part of what has caused it -- as Flaubert knew and intended, effects can be felt without their textual trigger being noticed: 'Le lecteur ne s'apercevra pas, je l'espère, de tout le travail psychologique caché sous la forme, mais il en ressentira l'effet' (to Louise Colet, 2 January 1854, in *Oeuvres complètes*, XIII, 450). Flaubert's preparatory 'psychological work' for the novel was extensive, and included the reduction of specificity in characters' psychological developments, so as not to jeopardize their effect on the reader as desired above (see Williams 1973: 37, 43).

of sympathy' (204); but he also declares that 'she remains a living creature, and as a living creature she interests us' (204), and by means of this argument from 'typicality' and from vividness of evocation he concludes:

one is dragged into the very current and tissue of the story; the reader himself seems to have lived in it all, more than in any novel we can recall. At the end the intensity of illusion becomes horrible; overwhelmed with disgust and pity he closes the book. (206)

Here the duality of responses that may be induced by the novel is expressed in its most extreme form, and attributed to a large extent to Emma's character and her morality or otherwise; the judgement on her morality is in turn modulated by the 'poignant and convincing' way in which her character is evoked and the 'illusion' of reality thereby upheld (206). In discussion of the works of Franz Kafka, it has been argued that the evocation of vision and imagination in his characters creates a paradoxical duality of response, by corresponding to the reality of how these processes work but not to our preconceptions about them (Troscianko 2010a and 2010b). Something similar seems to occur in *Madame Bovary*: the evocation of morality through memory may, through the intensity of the illusion it creates, be at once disturbing, even off-putting, and convincing and compelling.

The question of how generalizable claims about readers' responses to texts are is a delicate one, which may be best resolved through empirical testing (see Troscianko 2010b: Ch. 5). In this paper I wish to suggest that the accurate evocation of scientifically demonstrated generalities in human cognition through cognitive realism is likely to have certain effects on many readers, broadly speaking in a duality of response (both unsettling and compelling), and more specifically in the form of equivocal moral judgements of Emma Bovary. My intention is not to deny the importance of individual expectations and tendencies in reading, nor therefore to claim that all readers respond identically: for instance, in feeling sympathy for Emma. Rather, I wish to offer ways of engaging with the fact that readers' responses to literature have similarities as well as differences, affected as they are by stable textual features and cognitive universals as well as by individual variation and context. As I hope to have shown, meaningful statements about the cognitive features and effects of *Madame Bovary* and literary Realism are possible on the basis of a scientifically informed understanding of certain aspects of memory. Generalizations about textual effects on such a basis may be considered

valid as an interpretive framework, even though individual responses can and will differ to some degree.

How, then, does *Madame Bovary* compare with other major exemplars of literary Realism as regards the evocation of memory? In many other nineteenth-century Realist texts, memory is used as a neutral, functional plot device: in Dickens's *Great Expectations* (1993 [1861]) for example, Pip narrates from memory, and although his reliance on memory, and its possible imperfections, are indicated at intervals ('My first most vivid and broad impression of the identity of things seems to me to have been gained on a memorable raw afternoon towards evening', 3), no real distortions or other salient characteristics of this cognitive faculty are ever foregrounded,²⁸ and the narrative depends on Pip's capacity for 'total recall'. This is the case in most texts using first-person narration, because of the functional requirements of the form, and also in some third-person narratives: in Henry James's *The Portrait of a Lady* (1995 [1881]), memory serves to emphasize certain mental revolutions ('It was extraordinary the things she remembered. Now that she was in the secret [...] she remembered a thousand trifles; they started to life with the spontaneity of a shiver', 595) but its evocation is in general encompassed by the simple dichotomy of recall and forgetting. This is not to say that other Realist texts do not thematize memory or use its complexities to contribute to characterization or imagery or the shaping of plot: this occurs in many texts that employ third-person narration (with a variety of forms of focalization), such as Stendhal's *Le Rouge et le Noir* and *La Chartreuse de Parme*, and Balzac's *La Peau de chagrin*, *Le Colonel Chabert*, *Eugénie Grandet*, *Le Père Goriot*, and others in *La Comédie humaine*. Eliot's *Middlemarch* (1996 [1874]) evokes the idiosyncrasies of memory in a way comparable to *Madame Bovary*, presenting memory's counter-intuitive changeability ('The memory has as many moods as the temper, and shifts its scenery like a diorama', 484), and the

²⁸ A rare mention of a failing of the narrator's memory ('Forasmuch as they hang in my memory by only this one slender thread, I don't know what they did, except that they forbore to remove me', 457) does not alter the evocation of memory as an essentially passive and preservative capacity; it merely acknowledges that this type of memory can fail sometimes.

emotional transformations of the past which it can bring about ('pain must enter into its glorified life of memory before it can turn into compassion', 727). However, the fact that many of these observations on memory are presented as generally valid characteristics, rather than as cause and effect in the course of a character's experiences, may mean that their effect on the reader is manifested primarily as retrospective reflection on what the text 'teaches us' about memory, and less as an immediate emotional response such as that of being compelled yet simultaneously unsettled.

Realist texts of course vary in the extent to which they make memory a central and complex facet of character and narrative, but taken together they do not contradict the deep-rooted 'wax tablet' conception of memory. Popular contemporary fiction of such genres as science fiction, crime, romance, and fantasy, which, despite superficial differences, bear fundamental resemblance to nineteenth-century Realism, also tend not to enforce any such contradiction. This conception remains the default: metaphors of memory as a static storage system are deeply embedded in the history of human thought.²⁹ Plato's wax tablet is echoed by numerous thinkers, culminating in Freud's 'mystic writing pad', which is then superseded by computer metaphors; and, in another strand, St Augustine's 'great storehouse', or 'wonderful system of compartments' in inner space becomes, in the Middle Ages, a library, and is reprised in its earlier form by such popular authors as Conan Doyle: Holmes describes his theory of the 'brain-attic' in *A Study in Scarlet* (1999 [1887], 15). Such metaphors are part of the fabric of our thought about memory.

At this point it is worth mentioning that although *Madame Bovary* is often described as a quintessentially Realist text,³⁰ some critics have also questioned its status as Realist, citing in particular its use of *style indirect libre* and its lack of action in the conventional sense as establishing a

²⁹ See Draaisma (2000) for details of the following examples.

³⁰ To quote two contrasting, but perhaps representative, authorities: Henry James states that 'Realism seems to us with "Madame Bovary" to have said its last word' (1919 [1878]: 202), whilst the current Wikipedia entry for the novel declares that it 'now stands virtually unchallenged not only as a seminal work of Realism, but as one of the most influential novels ever written' (http://en.wikipedia.org/wiki/Madame_Bovary; accessed 18 January 2011).

greater affinity with (high) Modernism.³¹ The term 'Realism' is problematic as a tool for literary analysis, largely because it seems so instinctively meaningful and familiar: it is easy to attribute normative status to an art form that aims at 'close resemblance to what is real; fidelity of representation, rendering the precise details of the real thing or scene'.³² But 'close resemblance' and 'fidelity' are as open to interpretation and selection as are 'what is real' and 'the real thing or scene'. The approach espoused here has taken the term 'Realism' and re--appropriated it as one with a specific and easily definable meaning, making the connection established with generalizable features of readers' minds -- rather than any other stylistic or formal, philosophical or ideological considerations -- the prime criterion of classification. This is not to imply that classification is or should be the primary aim of literary criticism, but the urge to categorize is unavoidably human (Knight 1981), and making our tools maximally effective can only be a good thing.

My analysis of the evocation of memory in the text may contribute to an understanding of those textual elements which do not entirely correspond to expectations about what a Realist text is or should be, since this analysis allows us to answer precisely the sorts of questions about *Madame Bovary* which some critics have claimed to be unanswerable and therefore to define the entire text as non--Realist. Fleming (1989) contends that in Emma's actions and reactions we may perceive 'efficient causes' but that satisfying explanations are impossible to derive for questions such as why Emma is seduced by Rodolphe or Léon: 'The answer seems to be merely: because the choices at any one time are limited to the two extremes of virtue and vice, and we have not had the latter in a while' (767).³³ Fleming's conclusion is that 'Emma is not a character with a personality at all, but rather a

³¹ See e.g. Ferguson 2002. See also Palermo Di Stefano (2003: 62, n. 85): 'ce qui frappe, c'est l'insignifiance des *faits* par rapport aux *conséquences psychologiques*'.

³² *Oxford English Dictionary*, 3rd edition, December 2008; online version November 2010, <http://www.oed.com:80/Entry/158931>, accessed 6 December 2010.

³³ See also Gregor and Nicholas (1962: 49): 'Emma is no more fated to love Rodolphe than she is to marry Charles -- the most we can say is that both episodes are credible, both entirely and depressingly predictable.'

walking textbook of seductions' (772) -- but this means he has to account for the sympathy we seem nevertheless to feel for Emma by saying we sympathize not with her but with the 'constraints' that first create the seductions. The notion of sympathizing with constraints in the absence of a character is difficult to reconcile with any plausible account of the actual experience of reading *Madame Bovary* (or any other text). The conclusions yielded by the present discussion permit a less reductive and less problematic understanding of the connections that may be established between protagonist and reader.

The fact that Emma's psychology can be seen as so wholly 'unrealistic' (or even absent),³⁴ where the current analysis has shown at least one aspect of it to be highly realistic, begs the question of whether the prime requirement of a Realist text is that it correspond to our assumptions about what our experience of reality is. Are we reluctant to bestow the label 'Realist' unless our expectations about psychology are met? If so, Realism is trapped in the paradox that we require it to 'reflect reality' but in so doing require it to reflect our preconceptions about reality, which in the realm of cognition often result less from reality than from the fitness for purpose of our cognitive faculties, which creates certain sorts of illusion.³⁵ In the case of vision, for example, we have the impression of taking in much more visual information than is actually the case because we can usually look again when we need to, and because the information we do register is generally adequate to our current needs.³⁶ In the case of memory, we retain sufficient details that 'correspond' in a straightforward way that those which are distorted in order to 'cohere' are assumed also to correspond to the original reality -- and by definition fit with our beliefs about ourselves and our past actions and reactions --, while those which are suppressed for the sake of coherence by definition fail to alter this impression most of the time. Only when comparison with someone else's memories of the same event, or with an objective record of that event, proves our 'memories' to have been inaccurate, or when a conflicting

³⁴ See also Cook (1973: 303): 'It is a commonplace of contemporary criticism that *Madame Bovary* has no psychology.'

³⁵ Currie (2010) makes this argument for the reading of all literature, not just Realism: that we want and enjoy wrong but familiar information about psychology, not unfamiliar truths about it.

³⁶ See e.g. O'Regan and Noë (2001) and Troschianko (2010a: 154-8).

memory resurfaces after a change in life circumstances, do we realize the extent to which our memories serve our own changing psychological needs.

It could be argued that the whole of ‘consciousness’ is the subject of a ‘grand illusion’ (see Noë ed. 2002), in that we acquire, by various cognitive means, the impression of the singularity, coherence, and continuity of a self--in--the--head, which corresponds neither to the neural actuality of multiple parallel pathways and centres of activation, nor to the fragmentary and ever--changing nature of subjective experience and physical embodiment. If in general our beliefs about our own experience are subject to illusions, it may be claimed that any fictional text which corresponds to those beliefs (i.e. a traditional Realist one) will by definition be cognitively unrealistic: Realism (as epitomized in the nineteenth century and still predominant in popular literature today) chimes with our assumptions about cognition, whereas cognitive realism chimes with the facts (which may feel uncomfortable, as well as compelling). Of course matters are complicated by the fact that a single text may be ‘Realist’ in some aspects and ‘cognitively realistic’ in others, but in broad terms the generalization may prove valid. Only further in--depth work on a larger sample of Realist texts and the effects attributed to them by both critics and ordinary readers will show whether the cognitively realistic aspects of a text tend to be those experienced as non--Realist. In the case of *Madame Bovary*, however, understanding the evocation of the protagonist’s memory allows us to claim that the text is cognitively realistic *because* it is not quite a Realist text (and vice versa); or, as a more conciliatory way of phrasing the same conclusion, *Madame Bovary* makes Realism more realistic than we many often require -- or even want -- Realism to be.

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