‘The quicksand of forgetfulness’: semantic dementia in *One Hundred Years of Solitude*

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This multidisciplinary article compares the pattern of memory loss described in Gabriel García Márquez’s *One Hundred Years of Solitude* to that exhibited by patients with semantic dementia (SD). In his renowned novel, García Márquez depicts the plight of Macondo, a town struck by the dreaded insomnia plague. The most devastating symptom of the plague is not the impossibility of sleep, but rather the loss of ‘the name and notion of things’. In an effort to combat this insidious loss of knowledge, the protagonist, José Arcadio Buendía, ‘marked everything with its name: table, chair, clock, door, wall, bed, pan’. ‘Studying the infinite possibilities of a loss of memory, he realized that the day might come when things would be recognized by their inscriptions but that no one would remember their use’. The cognitive impairments experienced by Macondo’s inhabitants are remarkably similar to those observed in SD, a clinical syndrome characterized by a progressive breakdown of conceptual knowledge (semantic memory) in the context of relatively preserved day-to-day (episodic) memory. First recognized in 1975, it is now considered one of the main variants of frontotemporal lobar degeneration. Writing within the realm of magical realism and investigating the power of language as a form of communication, García Márquez provides beautiful descriptions of the loss of ‘the name and notion of things’ typical of the syndrome. He further speculates on ways to cope with this dissolution of meaning, ranging from ‘the spell of an imaginary reality’ to José Arcadio’s ‘memory machine’, strategies that resonate with attempts by semantic dementia patients to cope with their disease. Remarkably, García Márquez created a striking literary depiction of collective semantic dementia before the syndrome was recognized in neurology. The novel also provides an inspiring and human account of one town’s fight against ‘the quicksand of forgetfulness’.

**Keywords:** semantic dementia; Gabriel García Márquez; *One Hundred Years of Solitude*; magical realism; neurology and literature

‘La vida no es la que uno vivió, sino la que uno recuerda y cómo la recuerda para contarla.’

‘Life is not what one lived, but what one remembers and how one remembers it in order to recount it.’

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**Introduction**

**The insomnia plague**

The mythical town of Macondo has been stricken with the dreaded insomnia plague. Despite precautions, the illness spread...
through Ursula Iguañ’s lovingly prepared candy animals: ‘Children and adults sucked with delight on the delicious green roosters of insomnia, the exquisite pink fish of insomnia, and the tender yellow ponies of insomnia, so that dawn on Monday, found the whole town awake’ (García Márquez, 1970). Initially, Macondo’s inhabitants were not alarmed: ‘If we don’t sleep again, so much the better’, José Arcadio Buendía said in good humour, ‘That way we can get more out of life’. Unfortunately, the most fearsome part of the sickness was not the impossibility of sleeping, but ‘its inexorable evolution toward a more critical manifestation: a loss of memory’.

Loss of ‘the name and notion of things’

The first and most devastating aspect of this memory loss was the loss of ‘the name and notion of things’. Aureliano Buendía was the first to notice this troubling symptom:

One day he was looking for the small anvil that he used for laminating metals and he could not remember its name. His father told him: ‘Stake’. Aureliano wrote the name on a piece of paper that he pasted to the small anvil: stake. In that way he was sure of not forgetting it in the future. It did not occur to him that this was the first manifestation of a loss of memory, because the object had a difficult name to remember. But a few days later he discovered that he had trouble remembering almost every object in the laboratory. Then he marked them with their respective names so that all he had to do was read the inscription in order to identify them. When his father told him about his alarm at having forgotten even the most impressive happenings of his childhood, Aureliano explained his method to him and José Arcadio Buendía put it into practice all through the house and later on imposed it on the whole village. With an inked brush he marked everything with its name: table, chair, clock, door, wall, bed, pan. He went to the corral and marked the animals and plants: cow, goat, pig, hen, cassava, caladium, banana. Little by little, studying the infinite possibilities of a loss of memory, he realized that the day might come when things would be recognized by their inscriptions but that no one would remember their use.

Semantic dementia

The cognitive impairments experienced by Macondo’s inhabitants are remarkably similar to those observed in semantic dementia (SD). Semantic dementia is a clinical syndrome characterized by a breakdown of conceptual knowledge (semantic memory) in the context of relatively preserved day-to-day (episodic) memory.

History

Although initially described by Pick (1892), SD is first recognized in the neurological literature following an article by Warrington in 1975 (Warrington, 1975). She described 3 patients with progressive anoma accompanied by a loss of word and picture comprehension. These deficits were apparent in the absence of phonological or syntactic impairments of language, perceptual/visuospatial abilities or day-to-day memory. Drawing on Tulving’s newly proposed distinction between memory for experienced events (episodic memory) and knowledge about the world (semantic memory) (Tulving, 1972), she argued that these patients exhibited a selective breakdown in semantic memory. Shortly afterward, Mesulam (1982) described a number of cases characterized by a ‘slowly progressive aphasia without generalized dementia’ and coined the term Primary Progressive Aphasia (Mesulam, 1982). On autopsy, the majority of these patients showed non-Alzheimer’s pathology. It quickly became evident that there were at least two main subtypes of progressive aphasia: fluent and non-fluent. On the one hand, the non-fluent variety was characterized by effortful, hesitant speech with and phonemic paraphasias, but relatively preserved comprehension (Grossman, 2002). On the other hand, it became clear that the impairments of patients with ‘fluent’ aphasia went beyond the domain of language, and in fact mirrored those described by Warrington a few years earlier. This prompted Snowden (Snowden et al., 1989) to re-name the syndrome ‘semantic dementia’, as this name encapsulated the essence of a deficit in representational knowledge. In 1992, Hodges and colleagues described five similar cases and proposed criteria for the diagnosis of SD (Hodges et al., 1992). Semantic dementia is now recognized as the temporal variant within the frontotemporal lobar degeneration (FTLD) spectrum (Neary et al., 1998).

Description

Patients with SD often present to medical attention with empty circumlocutory speech, prominent anoma and frequent semantic paraphasias. They tend to replace specific words with general terms (e.g. ‘thing’ for chair) or prototype members of the same category (e.g. ‘dog’ for rhinoceros). They also have difficulty understanding the meaning of words and will often express their lack of familiarity with questions such as ‘cow? What is a cow?’ Nevertheless, their speech output is fluent, grammatically correct and free of phonological errors.

The core semantic deficit in SD can be formally demonstrated using a variety of tests. Semantic dementia patients exhibit severe deficits in picture-naming, word-picture matching and tests of associative semantic knowledge (e.g. Pyramids and Palm Trees Test, Camel and Cactus Test) (Hodges et al., 1992; Howard and Patterson, 1992; Bozeat et al., 2000; Ikeda et al., 2006; Rogers et al., 2006; Hodges and Patterson, 2007). This failure to recognize or name objects is not due to perceptual deficits, as can be seen in Fig. 1. Although SD patients are able to copy drawings accurately and with great attention to detail, they are unable to assign the correct name to each figure. Figure 2 best exemplifies the dissolution of semantic knowledge in the disorder. When SD patients are spontaneously asked to draw various animals, they produce drawings that converge on a prototypical four-legged creature, and they fail to include the salient features that would distinguish these animals.

The deterioration of representational knowledge typical of SD can be seen in all modalities. Thus, patients may have difficulty with naming from verbal descriptions (Hodges et al., 1992a), identifying odours (Luzzi et al., 2007), non-verbal sounds (e.g. ringing
of a telephone) (Bozeat et al., 2000) and selecting appropriate colours for familiar black and white drawings (e.g. choosing yellow for a banana) (Breedin et al., 1994). Most patients exhibit deficits naming and later recognizing familiar faces (Hodges and Graham, 1998; Snowden et al., 2004; Thompson et al., 2004), and some have difficulties with actual object use (Hodges et al., 2000; Bozeat et al., 2002).

In stark opposition to their profound semantic memory deficits, SD patients reportedly have preserved memory for day-to-day events. Caregivers report that patients can remember prospective appointments, keep track of the preceding days and weeks and, in general, continue to function adequately in their daily activities. Semantic dementia patients also show preserved performance on tests of visual recall and recognition (Edwards-Lee et al., 1997; Graham et al., 2000; Hodges and Graham, 2001; Scahill et al., 2005). Other cognitive skills such as visuoperceptual and spatial ability, non-verbal problem solving, and working memory can be strikingly spared, even at relatively late stages of the disease (for a review, see Hodges et al., 1992; Hodges and Patterson, 1996; Hodges et al., 1998; Hodges et al., 1999; Snowden, 1999; Perry and Hodges, 2000; Hodges and Patterson, 2007).

Figure 1 Animal copies by patient B.F. (shown on right) demonstrate retention of visuoperceptual ability in SD patients. Confrontation naming tests highlight their semantic deficits. When asked to name these animals, B.F. called the cow a ‘dog’ and the elephant a ‘cow’. Reference drawings by Katharine Woodman-Maynard.
Semantic dementia in One Hundred Years of Solitude

Coined by German art critic Franz Roh in 1925, the phrase magical realism originally captured a post-expressionist style of realist painting that cast common objects in a new light so as to reveal their original mysticism masked by familiarity. Through later decades, the term evolved to describe a writing style rich in fantastical elements that blend into the backdrop of an otherwise ordinary reality. In his essay Magical Realism in Spanish American Literature, Luis Leal writes, ‘In magical realism key events have no logical or psychological explanation. The magical realist does not try to copy the surrounding reality (as the Realists did) or to wound it (as the Surrealists did) but to seize the mystery that breathes behind things. ... In magical realism ‘the mystery does not descend to the represented world, but rather hides and palpitates behind it’ (Leal, 1995).

Although increasingly recognized as an international movement, magical realism has undeniable roots in Latin American literature. García Márquez’s One Hundred Years of Solitude is often cited as one of the earliest and finest examples of modern magical realism. Throughout the novel, the lines between objective reality and dreams are consistently blurred, as seen in the character of Mauricio Babilonia, a mechanic who is forever surrounded by yellow butterflies. Similarly, Remedios the Beauty, too beautiful and innocent for the lustful appetite of Macondo’s men, one day rises into the heavens while folding laundry. In the realm of magical realism, the world as imagined by García Márquez is not defined by traditional rationalism, but rather by alternate realities that co-exist almost seamlessly in the lives of Macondo’s residents.

García Márquez’s masterful use of magical realism is on full display in his depiction of the memory loss epidemic that ravages Macondo. While his conception of the plague is undoubtedly fantastical, García Márquez, the magical realist, depicts the catastrophe as if it were an everyday reality. He probes the mystery that ‘hides and palpitates’ behind mundane concepts, such as the names of everyday objects. This process leads him to a terrifying vision—of a world in which people are unable to communicate the names of things, or to understand their use—that bears a striking resemblance to the clinical syndrome of SD.

Semantic loss

Writing in the style of magical realism, García Márquez provides beautiful descriptions of the loss of ‘the name and notion of things’ experienced by Macondo’s villagers. This is best
exemplified by the strategy devised by José Arcadio to combat the effects of memory loss:

The sign that he hung on the neck of the cow was an exemplary proof of the way in which the inhabitants of Macondo were prepared to fight against loss of memory: This is the cow. She must be milked every morning so that she will produce milk, and the milk must be boiled in order to be mixed with coffee to make coffee and milk.

José Arcadio realizes that memory loss extends beyond the mere loss of names; rather than simply hanging a sign that reads ‘this is a cow’ on its neck, he elaborates on the animal’s importance in the production of milk and, by extension, coffee. The sign encapsulates not just the name of the cow, but its purpose, or its semantic connection with other objects. In the same way, patients with SD struggle not only with naming objects, as shown in Fig. 1, but also with recalling how an object must be used, or how it might interact with other objects.

Many SD patients catalogue their retained vocabulary in an attempt to keep track of object names and concepts; this activity bears a striking resemblance to the strategy described in One Hundred Years of Solitude. In Fig. 3, one SD patient imposes order on a seemingly disconnected string of vocabulary words by linking specific words to the larger semantic categories that group them together and shed light on their purpose.

### Autobiographical memory

Semantic dementia also affects remote autobiographical episodic memory in a rather unusual way. Using the Autobiographical Memory Interview, Graham and Hodges (1997) found that, although SD patients were successful in producing autobiographical memories for the most recent time-period, they were significantly impaired at retrieving episodes from childhood and early adulthood, thereby reversing the pattern of retrograde amnesia exhibited by classic amnestic and Alzheimer’s disease patients.
This sequence of progressive memory loss, starting with distant memories, resembles that of Macondo’s inhabitants: ‘... when the sick person became used to his state of vigil, the recollection of his childhood began to be erased from his memory, then the name and notion of things, and finally the identity of people and even the awareness of his own being, until he sank into a kind of idiocy that had no past’.

A town copes with loss of meaning

García Márquez speculates on strategies a small community might use to cope with the dissolution of meaning. This description serves as a testament to the immense challenges posed by a progressive loss of semantic knowledge and, more importantly, to the unwavering and human need to maintain hope during difficult times.

Initially, Macando’s inhabitants cope with their memory loss practically. They apply José Arcadio’s labelling method to ensure that everything’s name and function is known:

At the beginning of the road in to the swamp they put up a sign that said MACONDO and another larger one on the main street that said GOD EXISTS. In all the houses keys to memorizing objects and feelings had been written.

Eventually, despair led some villagers to abandon the method:

The system demanded so much vigilance and moral strength that many succumbed to the spell of an imaginary reality, one invented by themselves, which was less practical for them but more comforting. Pilar Ternera was the one who contributed most to popularize that mystification when she conceived the trick of reading the past in cards as she read the future before. By means of that recourse the insomniacs began to live in a world built on the uncertain alternatives of the cards, where a father was remembered faintly as the dark man who had arrived at the beginning of April and a mother was remembered only as a dark woman who wore a gold ring on her left hand, and where a birth date was reduced to the last Tuesday on which a lark sang in the laurel tree.

While some of Macando’s inhabitants resign themselves to their fate, some are not content to fade into oblivion. José Arcadio combat the insomnia plague by building an encyclopedic ‘memory machine’—a blueprint for villagers to make sense of a world that has lost its meaning:

The artifact was based on the possibility of reviewing every morning, from beginning to end, the totality of knowledge acquired during one’s life. He conceived of it as a spinning dictionary that a person placed on the axis could operate by means of a lever, so that in very few hours there would pass before his eyes the notions most necessary for life.

The ‘memory machine’, which attempts to capture words, definitions and ‘notions’ essential to life, is García Márquez’s most fantastical solution to memory loss, but remarkably is the most similar to the coping mechanisms used by SD patients as they deal with progressive semantic loss. The excerpts in Figs. 4 and 5, taken from a pocket planner, paint the picture of a man fighting the gradual loss of valuable memories (his home and friends), who creates a portable ‘memory machine’ to keep details of his life accessible. The patient’s journal, kept close at all times, acts as a physical manifestation of his remote past to partially alleviate the strain of losing his identity. The desperation of José Arcadio, who pens almost fourteen thousand entries for his machine, further resonates with the SD patient from Fig. 3, who methodically stores the totality of her vocabulary on sheets of paper. By committing words and knowledge to paper, diaries, or even a ‘spinning dictionary’, patients with SD and García Márquez’s fictional characters share the desire to imbue their fading semantic knowledge with permanence.

Discussion

In One Hundred Years of Solitude, García Márquez created a literary depiction of collective semantic dementia before the syndrome was recognized in neurology. The memory plague section of the novel also provides an inspiring and human account of one town’s fight against ‘the quicksand of forgetfulness’.
Why does García Márquez envision a world in which people lose their ability to communicate the names of everyday things? He gives some insight into his use of magical realism in the opening lines of the novel, in which he describes the village of Macondo in its earliest days: ‘the world was so recent that many things lacked names, and in order to indicate them it was necessary to point’. With this description, García Márquez implies that the ability to assign a name to an everyday object is a defining human achievement that has developed over time. In this light, the insomnia plague forces Macondo villagers into a primitive state by robbing them of their ability to remember ‘the name and notion of things’.

Remarkably, García Márquez’s probing investigation of the power of words and everyday names leads him to a striking literary enactment of the clinical syndrome of SD and the problems faced by SD patients. His fictional characters, just like the SD patients discussed here, are acutely aware of the ‘infinite possibilities of a loss of memory’. Both patients and characters attempt to preserve semantic meaning in more permanent forms that are free from the devastating effects of a neurodegenerative process and a fantastical plague. As such, García Márquez achieves a masterful portrayal of SD not just in his description of the plague’s ravaging effects on semantic knowledge, but even more vividly in his account of the affected people’s ability to maintain hope through various coping strategies—to preserve their fragile self-identity in the pages of word lists and pocketbook diaries.

Caveat

Any manuscript that attempts to uncover deeper meaning in One Hundred Years of Solitude must end with a caveat. As García Márquez himself points out: ‘In general, [critics], with the investiture of pontiffs, don’t realize that a novel like One Hundred Years of Solitude completely lacks seriousness and is full of signals to close friends, signs that only they can decipher; so they assume the responsibility of decoding all the riddles in the book, running the risk of saying a lot of stupid things’ (García Márquez and Apuleyo Mendoza, 1982). Whatever his intention, it is clear that García Márquez offers his readers insights into the nature of knowledge and the scope of semantic memory. That his depiction of Macondo’s dreaded insomnia plague resonates so well with clinical accounts of SD is a testament to García Márquez’s perceptiveness and to the value of studying cognition in neurodegenerative disease.

References


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