



## “Can’t seem to keep my mind to it”: did Arthur Miller’s *Salesman* have dementia with Lewy bodies?

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### Abstract

We present evidence that Willy Loman, the protagonist of Arthur Miller’s play “Death of a Salesman”, meets current diagnostic criteria for probable dementia with Lewy bodies. In particular, he presents with attentional deficits and executive dysfunction (with additional subtle visuoperceptual deficits) in addition to dramatic fluctuations in attention and vivid visual hallucinations. Dementia with Lewy bodies is the second most common neurodegenerative dementia. However, it is frequently misdiagnosed or underdiagnosed, even—we contest—in one of the most well-known characters in modern literature.

**Keyword** Dementia with Lewy bodies

Dementia with Lewy bodies (DLB) is the second most common neurodegenerative dementia but it is frequently misdiagnosed and underdiagnosed [1]. Undoubtedly, cases of DLB are passing through our clinics unrecognised. Arthur Miller’s 1948 play *Death of a Salesman* has sold over 11 million copies and has presumably been read by innumerable physicians. Willy Loman, the play’s tragic protagonist, displays striking cognitive features, comprising fluctuating attention, visual hallucinations and functional decline [2]. Despite this, there has been a paucity of literature interpreting his behaviour within a neuropsychiatric framework [3]. When a 63-year-old man presents with these features, a significant top line differential is almost certainly dementia with Lewy bodies (DLB). It is surprising, therefore, that this diagnosis has not been previously mooted for Miller’s most infamous character. Diagnostic criteria for DLB were recently revised in the fourth consensus report of the DLB consortium [4]. The essential and core clinical features required for a diagnosis of probable and possible DLB as well as supportive clinical features are outlined in Table 1.

To highlight how readily DLB can evade diagnosis—even to an audience of countless physicians—we present here the evidence that Willy Loman meets current criteria for probable DLB (two or more core clinical features in the setting of progressive cognitive decline).

The protagonist is a travelling salesman in his sixties who becomes tortured by aspirations of success in the face of a failing career, depression and anxiety, ultimately leading to his death by suicide. The play is more than a simple tragedy or social criticism. It is a detailed neuropsychological study of a man with cognitive decline who is losing the ability to function professionally and socially. Perhaps this is not immediately recognised as a presentation characteristic of a neurological disorder, given the salient affective elements. However on a more detailed perusal, the most prominent features displayed by Loman are cognitive decline, fluctuating levels of alertness and visual hallucinations. Whilst his family and colleagues clearly recognise his behaviour is abnormal, these features are not recognised as the pattern of a common form of dementia, mirroring the clinical experience of many patients with early DLB.

Loman satisfies the essential criterion of cognitive decline and, in keeping with early DLB, this is not predominantly amnesic. Rather, the dysfunction is principally dysexecutive with attentional deficits, with accompanying deficits in the visuoperceptual domain. A central focus in the script is Loman’s failing career. Having worked for the firm for 35 years, his salary is withheld, leaving him working on commission only, and ultimately, he is made redundant.

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**Table 1** Essential and core clinical features for diagnosis of probable and possible dementia with Lewy bodies (DLB). Adapted from [4]

	Criterion
Essential feature	Dementia: defined as a progressive cognitive decline of sufficient magnitude to interfere with normal social or occupational functions, or with usual daily activities. Prominent or persistent memory impairment may not necessarily occur in the early stages but is usually evident with progression. Deficits on tests of attention, executive function, and visuo-perceptual ability may be especially prominent and occur early
Core clinical features	Fluctuating cognition with pronounced variations in attention and alertness Recurrent visual hallucinations that are typically well formed and detailed REM sleep behaviour disorder, which may precede cognitive decline One or more spontaneous cardinal features of parkinsonism: these are bradykinesia (defined as slowness of movement and decrement in amplitude or speed), rest tremor, or rigidity
Supportive clinical features	Severe sensitivity to antipsychotic agents; postural instability; repeated falls; syncope or other transient episodes of unresponsiveness; severe autonomic dysfunction, e.g. constipation, orthostatic hypotension, urinary incontinence; hypersomnia; hyposmia; hallucinations in other modalities; systematised delusions; apathy, anxiety, and depression

Probable DLB may be diagnosed if two or more core clinical features of DLB are present or if only one core clinical feature is present, but with one or more indicative biomarkers (reduced dopamine transporter uptake in basal ganglia demonstrated by SPECT or PET; abnormal (low uptake)  $^{123}\text{I}$ -MIBG myocardial scintigraphy; polysomnographic confirmation of REM sleep without atonia). Possible DLB may be diagnosed if only one core clinical feature of DLB is present, with no indicative biomarker evidence, or one or more indicative biomarkers is present but there are no core clinical features

He appears to have difficulty managing finances at home. There is evidence of visuo-perceptual dysfunction in Loman's recent difficulty with driving. ("I suddenly couldn't drive any more. The car kept going off on to the shoulder"). This does not seem to be an isolated incident ("Jesus, maybe he smashed up the car again") and ultimately leads him to cease driving for work. There is clear familial concern regarding his behaviour. This change appears persistent and progressive ("I'm getting nervous about him", "I don't know what to do about him, it's getting embarrassing"). When his wife is confronted about Loman's behaviour, she responds "it'll pass by morning", further suggesting fluctuating features, typical of DLB.

Loman's dialogues are characterised by dramatic variations in attention, including clear episodes of transient unresponsiveness ("Suddenly I realize I'm goin' sixty miles an hour and I don't remember the last five minutes. I'm—I can't seem to—keep my mind to it."). Nine of these episodes encompass frank unresponsiveness, a characteristic supportive feature of DLB ("[Willy doesn't respond]", "[He breaks off]", "[Willy stands still, dreaming]").

A central mechanism used by Miller in this play is the portrayal of Loman's detailed hallucinations. He looks at these visions ("[Willy is gradually addressing—physically—a point off stage, speaking through the wall of the kitchen]"), follows them on stage and talks to them ("Who's he arguing with? Nobody. There's nobody with him."). The hallucinations are clearly well formed as is often the case in DLB. Descriptions of speech, laughter and music suggest that Loman experiences hallucinations in other modalities, another supportive feature of DLB.

One factor which might, at first glance, hinder a diagnosis of DLB in Loman's case is the absence of a definite description of parkinsonism or REM sleep behaviour disorder (RBD). These are two clinical features which some may consider as a *sine qua non* for diagnosis of DLB, although in fact neither are required for diagnosis. Parkinsonism can be a later feature in DLB, or even absent in a proportion of cases [5] and clinically defined RBD is only present in about 40% of DLB patients [6]. There are, however, other supportive clinical features in Loman's case including depression, anxiety and delusions of grandeur ("'Willy Loman is here!' That's all they have to know..."). There is also reference to hypersomnolence ("Oh no he probably just fell asleep again"). Although not strictly a supportive criterion, paranoia is often seen in DLB ("I know you laugh at me behind my back"). Given these core and supportive features, we argue that *Death of a Salesman* is a compelling example of a man with undiagnosed DLB, which progressively interferes with his social and occupational functioning, culminating in his death by suicide, leaving him and his family without a diagnosis. His untimely death may have interrupted disease progression before other features such as parkinsonism became apparent, a further barrier to his diagnosis.

In pathological studies, DLB is the second most common neurodegenerative dementia [7]. However, as little as one-third of cases are identified routinely [1]. Of the remainder, the most common misdiagnosis is Alzheimer's dementia (AD) [8]. Indeed, there have been articles in the news media proposing Loman to have AD [9, 10]. A further obstacle to diagnosis of DLB is that many cases of prodromal DLB

evolve atypically, lacking the core DLB features and clinically resembling AD [11].

Many patients and families see multiple physicians before a diagnosis of DLB is made (70% consult three or more doctors), taking on average four office visits to make the diagnosis [12]. Heart-rending accounts of life with DLB have been published [13], highlighting barriers to diagnosis and the devastating impact of this disease [12, 14]. These underscore the importance of correct and early diagnosis, not only to guide treatment, but also to bring clarity to patients and families in understanding the underlying cause of their relentlessly progressive disease. It is clear that DLB continues to be underdiagnosed, even in one of the most well-known characters in modern literature. All physicians should be aware of the clinical features of DLB and consider it in any patient presenting with cognitive decline.

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### Compliance with ethical standards

**Conflicts of interest** On behalf of all authors, the corresponding author states that there is no conflict of interest.

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