

# 150 years of “Alice’s Adventures in Wonderland”: some considerations about the Cheshire cat and neuropsychiatric phenomena

*150 anos de “Alice no País das Maravilhas”:  
algumas considerações sobre o gato de  
Cheshire e fenômenos neuropsiquiátricos*

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## ABSTRACT

Alice’s Adventures in Wonderland by Lewis Carroll, pseudonym of Charles Lutwidge Dodgson, is a psychedelic dream tale apparently made for amusement. But, many speculations may be raised about its characters and phenomena created by a devout, learned and imaginative mathematician/logistician. Some issues based on the Cheshire cat due to its vanishing apparitions and its clever arguments are considered. The interpretation of the visual perception may include the “binding problem” issue. Regarding the cat’s thought about inquiry, fundamental for researchers, this represents similar reasoning to that of Claude Bernard. Secondly, some neurological and psychopathological speculations are also focused.

**Keywords:** Lewis Carroll, Claude Bernard, “binding problem”, Alice in Wonderland syndrome, psychopathology.

## RESUMO

As aventuras de Alice no País das Maravilhas por Lewis Carroll, pseudônimo de Charles Lutwidge Dodgson, é um conto de sonho psicodélico, aparentemente feito para diversão. Mas muitas especulações podem ser levantadas sobre seus personagens e fenômenos criados por um devoto, erudito e criativo matemático/especialista em logística. São feitas algumas considerações sobre o gato de Cheshire devido suas aparições evanescentes e seus argumentos inteligentes. A interpretação sobre a percepção visual pode incluir a questão do “binding problem”. Em relação ao pensamento do gato sobre a investigação, fundamental para os pesquisadores, isso representa raciocínio similar ao de Claude Bernard. Secundariamente, algumas especulações neurológicas e psicopatológicas também são apresentadas.

**Palavras-chave:** Lewis Carroll, Claude Bernard, “binding problem”, síndrome de Alice no País das Maravilhas, psicopatologia.

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## INTRODUCTION

“Alice’s Adventures in Wonderland” (Alice in Wonderland) by Lewis Carroll<sup>1</sup> was created apparently for children’s amusement. However, everyone is easily enchanted with its extraordinary storyline. Now, 150 years after the book first edition (1865), the opportunity to be delighted with its characters and phenomena with intriguing neurological tint (Box 1), as that of the wise and grinning cat – the cat of Cheshire, is still present. The main characteristics of the author are presented initially, as follows.

**Box 1.** Neurological configuration of Wonderland some characters and phenomena

From the Alice’s psychedelic dream ambience, Lerner<sup>6</sup> enrolled several possible syndromes recorded in Alice in Wonderland. They were included in the “Alice in Wonderland syndrome” (AWS), “Mad Hatter syndrome” (profile of mercury poisoning vs a person of Dodgson’s relationship with eccentric ideas) and other potential neurological syndromes as pathological crying, excessive daytime somnolence, dysmorphic syndrome.

AWS is the most recognized, and Lippman (1952) first described it, and subsequently Todd (1955) introduced this term.<sup>6</sup> It refers to visual distortions, metamorphosis, generally associated with migraine, but also during epilepsy, encephalitis, cerebral mass lesions, schizophrenia, and drug intoxication. Liu *et al.*<sup>9</sup> studied 48 children with this syndrome (personal, true AWS, or extrapersonal visual complaints), and they concluded that it typically affects young children, the most common visual complaints are micropsia (69%), teleopsia (50%), macropsia (25%), metamorphopsia (15%), and pelopsia (10%), the most common associated condition is an infection, but half of the patients have no obvious trigger, and one quarter of patients without a history of migraine may subsequently develop it.

There is controversy if Dodgson suffered from migraine headaches with visual hallucinations and used these experiences to compose an amusing tale to Alice Liddell. Another neurological disorder, Stammering may be a parody of the author himself that is represented by Dodo (“Do-do-Dodgson”) in Alice in Wonderland.<sup>8</sup>

## LEWIS CARROLL AND THE WONDERLAND

Lewis Carroll, pseudonym of Charles Lutwidge Dodgson (Jan. 27<sup>th</sup>, 1832, Daresbury, Cheshire – Jan. 14<sup>th</sup>, 1898, Guildford, Surrey) is mostly remembered for Alice in Wonderland.<sup>2</sup> Indeed, Dodgson is the author of a number of books, from literary nonsense to mathematical works, but the latter appeared under his real name. He was an Englishman of high social standing, logician, mathematician, photographer of children and of adults, Anglican deacon, and a tutor in mathematics at Christ Church, Oxford, in the Victorian era. He was ordained deacon, but he never proceeded to priest’s orders. Dodgson was raised in a family of seven girls and four boys living in an isolated country village. He was shy and a severe

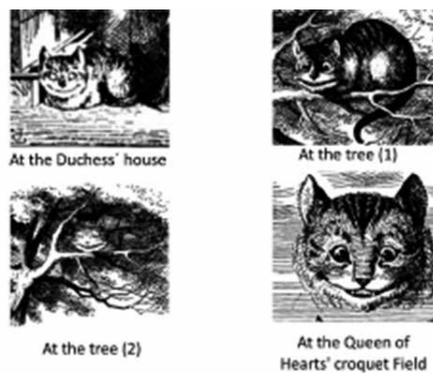
stutterer, but with a logical and mathematical mind. These characteristics all together would be the ingredients to be a bachelor and more closely related to little girlfriends such as Alice, Lorina and Edith Liddell, all three daughters of an Oxford dean. The first one inspired Dodgson to write the Alice in Wonderland book that was based on familiar types that included Dodgson himself, besides Alice, among other people of his relationship.<sup>2,3</sup>

## CHESHIRE CAT

An extraordinary Dodgson’s personage is the Cheshire Cat, known for its distinctive mischievous smile and its waxing and waning appearances. Alice met the cat three times (Figure 1). The talk between them is very provoking: Alice – “Which way I ought to go from here?”, Cat – “That depends a good deal on where you want to get”. It seems a journey metaphor of learning and knowledge. Anyway, addressing more directly, it may be a lesson for a researcher that can be made clear: before deciding what to do, a clear understanding of what is to be achieved must be obtained. Explaining better: due to terms of a project management, without a clear comprehension of the objectives, any outlining will be inadequate. This is also explained by Claude Bernard (1867), as he stated: *L’expérimentateur qui ne sait point ce qu’il cherche ne comprend pas ce qu’il trouve* (The investigator who does not know what to seek does not understand what to find).<sup>3</sup> This phrase became famous two years after Alice in Wonderland book release, and Bernard’s own famous book *Introduction à l’étude de la médecine expérimentale* (Introduction to the Study of Experimental Medicine) (1865), published, in the same year of Dodgson’s Alice in Wonderland.<sup>4</sup>

After this introductory perusal about the smart cat, it is time to discuss the Cheshire cat waxing and waning visual phenomenon that can be interpreted as a kind of “binding problem”. This may happen because present objects depend on the brain capacity to combine different attributes, such as color and motion, also known as the “binding problem”.<sup>5</sup> A near concept of temporal “binding problem” is one of a binocular rivalry: a case of dynamic response selection which occurs when the images in the two eyes are incongruent and cannot be fused into a coherent percept, and only signals from one of the two eyes

are selected and perceived.<sup>6</sup> The psychiatric interpretation of Alice in Wonderland is given by Kelly<sup>7</sup> as a whole, as a vivid demonstration of human psychopathology. Concerning Alice, this would be linked to drugs ingestion and possible psychedelic experience. Regarding the cat itself, Kelly<sup>7</sup> considered that it may be a prolonged state of elation, possibly associated with dysphoric features, as it has limited range of affect, rigid emotional responsiveness and important neglect to social customs. Anyway, the cat itself agreed with this author, as it considered that “We’re all mad here. I’m mad. You’re mad”.



**Figure 1.** Alice in Wonderland<sup>1</sup> and the wax and waning Cheshire cat, extracted from Carrol L. Alice's Adventures in Wonderland.<sup>1</sup>

Alice and the cat: (1) At the first encounter, the presentation: “Please would you tell me, . . .” -- “. . . why your cat grins like that? . . .” “It’s a Cheshire cat, . . .”; (2) In the second encounter, Alice sees the cat among the branches of a tree, where it appears and disappears raising philosophical issues: [“Would you tell me, please, which way I ought to go from here?” “That depends a good deal on where you want to get to,” said the Cat. “I don’t much care where. . .” said Alice. “Then it doesn’t matter which way you go,” said the Cat. “. . . so long as I get SOMEWHERE,” Alice added as an explanation. “Oh, you’re sure to do that. . .” said the Cat, “. . . if you only walk long enough.”], and [“But I don’t want to go among mad people” Alice remarked. “Oh, you can’t help that, . . .” said the Cat: “. . .we’re all mad here. I’m mad. You’re mad.” “How do you know I’m mad?” asked Alice. “You must be, . . .” answered the Cat, “. . . or you wouldn’t have come here.”]; (3) At Queen of Hearts’ croquet field, the cat was sentenced to death, but it confounded everyone by having made the head appear without the body (Drawings by John Tenniel).

## CONCLUSION

Alice in Wonderland is mind-blowing and thought-provoking, and it was constructed and released in a conservative society by a pious and bright person, but paradoxically subjected to time, place, education and justice burlesque approach. The cat personage gives us a provoking analyses related to its appearances and thoughts. All together, the story demonstrates the biological and social background of the magnified human behavior complex, and the importance of the transdisciplinary approach to unveil it.

## CONFLICT OF INTEREST

None.

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