Journal of Parkinson's Disease 14 (2024) 1147–1148
DOI 10.3233/JPD-230435
IOS Press

Hidden Gems

"Tip-of-the-Tongue" Phenomenon in Parkinson's Disease: A Hidden Gem

Alice K. Silbergleit[a,*] and Peter A. LeWitt[a,b]
[a]*Department of Neurology, Henry Ford Hospital, West Bloomfield, MI, USA*
[b]*Sastry Foundation Endowed Chair in Neurology, Wayne State University School of Medicine, Detroit, MI, USA*

Accepted 25 June 2024
Published 3 September 2024

Persons with Parkinson's disease (PD) often experience impairments in verbal language expression and other communication tasks such as handwriting and keyboarding. With respect to speech, its execution can be impaired by decreased volume and hypokinetic dysarthria.[1] Spoken language also can be disrupted by intermittent silences in between otherwise fluent speech. This episodic event has been euphemistically designated as the "tip-of-the-tongue" (TOT) phenomenon. Those experiencing TOT phenomena characterize it as a transient difficulty at finding the right word. This recurrent interruption of speech is especially annoying because the speaker has a distinct notion of what was intended to be said. TOT is analogous to another intermittent problem some PD patients experience, motor blocks of gait (freezing), although the two phenomena are independent of one another. In today's PD clinics, TOT phenomenon is a commonly reported experience (PAL, personal observation) though it has received little attention since 1982, when Matison and colleagues reported this topic to the neurology community.[2]

In their prospective study of 22 cognitively-intact PD patients, Matison and colleagues observed prominent word-finding difficulties (which they termed TOT phenomena) during testing that involved visual confrontation naming, Further investigation revealed that these PD patients achieved only partial knowledge of words. From the neuropsychological assessments, Matison and colleagues concluded that the distinctive impairment of spoken language they observed in PD was the TOT phenomenon, readily differentiated from hypokinetic dysarthria or other problems of motor execution. Previous research into the experience of TOT phenomena led other investigators to characterize it as failure at recalling a previously known word, usually happening when the feeling of recall seemed imminent.[3] Further investigation has revealed that the TOT phenomenon can be a universal experience, occurring independently of PD or other neurological disorders and at any age. Some of its properties include recognition of only the first letter of a target word, or recall that is directed at semantically related words.[4] One common example of TOT phenomena would be the halted naming of a widely-known person.[5]

In other studies, the TOT state was investigated in healthy controls and in individuals with various forms of aphasia. For example, patients with conduction aphasia were more adept at indicating both the first letter and the number of syllables in a forgotten word, compared with patients affected by either Wernicke aphasia or anomic aphasia.[6] In some instances, individuals displaying fluent aphasia could recover a word without ability to provide answers

*Correspondence to: Alice K. Silbergleit, Ph.D, From the Department of Neurology, Henry Ford Hospital, West Bloomfield, Michigan USA. E-mail: ASILBER1@hfhs.org.

that would indicate their partial knowledge about the word. While individuals with conduction aphasia generally retain the normal neural process of recall, this ability seems to be impaired at connecting to articulatory movements needed for word production. In one study of this phenomenon, all subjects were able to select the correct word provided in multiple choice format, confirming that TOT phenomena are primarily problems of recall rather than for recognition of words.[6] Recent metacognitive research posits that the mental annoyance of TOT occurrences may serve to stimulate the mind into a "need-to-know" state.[7]

Beyond the daily problem of episodic paused speech, the TOT phenomenon may be a window into functioning of neural circuitry in disorders like PD. The distinctive episodic interruption of spoken language production, as reported by Matison and colleagues,[2] provided the first published recognition of TOT phenomenon and important insights into yet another non-motor manifestation of PD.[8] Further research is warranted to investigate the effect of TOT stimulus tasks that might improve word finding skills in PD and in other neurological conditions. A broad research study comparing verbal fluency and tip of the tongue occurrences in non-fluent aphasia and people with PD would be the next step in such a project.

Since the TOT phenomenon has also been reported to occur in healthy controls as well as those with neurological disorders, it may represent part of the normal aging process.[9] Reports reveal that older adults often cite TOT as being a common and troubling memory and cognitive problem particularly involving proper names. In some cases, an alternative or "interloper" word comes to mind before the target word, further interfering with the intended word recall.[9,10] The cognitive interference of the TOT phenomenon may then create pauses in conversation and interrupt verbal fluency and the pragmatics of discourse. Based on these reports, TOT appears to represent higher level cognitive interruptions in healthy controls as well as those with neurological disorders. Further research is necessary to understand why TOT occurs and to differentiate normal interruptions in word recall from those of disordered language and cognition. Results of such research may improve treatment options in individuals with TOT in the future.

ACKNOWLEDGMENTS

The authors have no acknowledgments to report.

FUNDING

The authors have no funding to report.

CONFLICT OF INTEREST

Dr. LeWitt is an Editorial Board Member of this journal but was not involved in the peer-review process nor had access to any information regarding its peer review.

REFERENCES

1. Darley FL, Aronson AE and Brown JR. Hypokinetic dysarthria. In: Darley FL, Aronson AE and Brown JR (eds) *Motor speech disorders*. Philadelphia: Saunders, 1975, pp. 171–197.
2. Matison R, Mayeux R, Rosen J, et al. "Tip of the tongue" phenomenon in Parkinson disease. *Neurology* 1982; 32: 567–570.
3. Brown R and McNeil D. The tip of the tongue phenomenon. *J Verbal Learning Verbal Behav* 1966; 5: 325–337.
4. Brown AS. A review of tip-of-the-tongue experience. *Psychol Bull* 1991; 109: 204–223.
5. Burke DM, Mackay DG, Worthley JS, et al. On the tip of the tongue: what causes word finding failures in young and older adults? *J Memory Lang* 1991; 30: 542–579.
6. Goodglass H, Kaplan E, Weintraub S, et al. The "tip-of-the-tongue" phenomenon in aphasia. *Cortex* 1976; 12: 145–153.
7. Metcalf J, Schwartz BL and Bloom PA. The tip-of-the-tongue state and curiosity. *Cogn Res Princ Implic* 2017; 2: 108.
8. LeWitt PA and Chaudhuri KR. Unmet needs in Parkinson disease: motor and nonmotor. *Parkinsonism Relat Disord* 2020; 80(suppl 1): S7–S12.
9. Abrams L and Davis DK. The tip-of-the-tongue phenomenon: who, what, and why. In Wright HH (ed) *Cognition, Language and Aging*. Philadelphia: John Benjamins Publishing Company, 2016, pp. 13–53.
10. Cohen G and Burke DM. Memory for proper names: a review. *Memory* 1993; 4: 249–263.