

ENGL 301 (Unit 1.3): Definitions Assignment – “PARKINSON’S DISEASE”

June 1, 2016

Joanne Ho

Introduction:

As instructed on the English 301 blog page, I will be writing three types of definition (parenthetical, sentence, and expanded) for a single term. The term I will be defining is “Parkinson’s disease”. The objectives and criteria of the assignment are listed below.

Objectives:

- Appreciate the importance and role of definitions in technical writing
- Understand how audience and purpose indicate the need for definition
- Differentiate between the levels of details in definition
- Select the right level of detail according to the situation

Criteria:

1. Choose a relatively complex term used within your particular discipline or profession
2. Choose a situation and an audience of “non-technical readers”
3. Compose a parenthetical, sentence, and expanded definition of the term; the expanded definition must:
 - a. Include at least four expansion strategies
 - b. Include at least one visual
 - c. Consult no fewer than three outside references and provide a works cited list
MLA style or APA style
4. Include an introduction to your assignment that indicates the criteria and the objective of the assignment.

Situation:

I am a research assistant studying the possible treatments of neurodegenerative disorders, including Parkinson’s disease. In particular, my goal is to recruit Parkinsonian patients into the study for research purposes. In preparation of a consent form outlining the research goals and details, I must prepare a definition of this disorder to provide the subjects with sufficient information about their condition.

Audience:

To understand the objectives of the study, participants must have a good idea of what Parkinson’s disease is and what causes it. Information on the symptoms, treatments, and possible research avenues can also help convince the patients to participate in the study.

Parenthetical definition:

Parkinson's disease (a sporadic and progressive neurodegenerative disorder) causes uncoordinated movements in affected individuals.

Sentence definition:

Parkinson's disease is a neurodegenerative disorder caused by the gradual loss of dopaminergic neurons in a part of the brain called the substantia nigra pars compacta (Meissner et al., 2011). This disease is characterized by motor symptoms such as bradykinesia, rigidity, and tremors.

Expanded definition:

What is Parkinson's disease?

Currently, Parkinson's disease is the second most common neurodegenerative disorder in the world (Sullivan and Toulouse, 2011). In normal individuals, dopaminergic neurons in the brain release dopamine, a chemical responsible for coordinated body movements. In affected individuals, a decrease in the number of these neurons is observed. With the loss of dopaminergic neurons, less dopamine is released into motor cells responsible for body movement. As a result, affected individuals develop motor symptoms such as bradykinesia, rigidity or stiffness of limbs, and body tremors (Rangasamy et al., 2010).

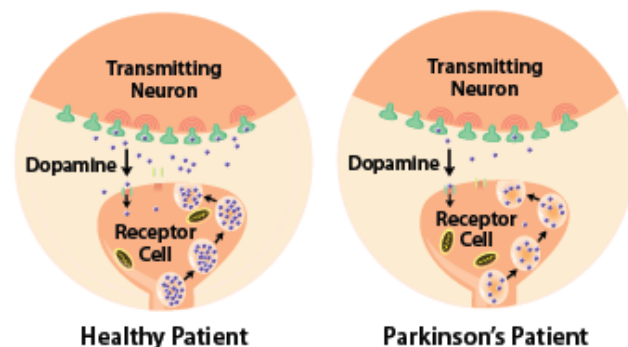


Figure 1: The release of dopamine from dopaminergic neurons onto receptor motor cells in healthy patients vs. Parkinson's patients

Source: From National Institute of Environmental Health Sciences,
http://www.niehs.nih.gov/health/assets/images/parkinsons_patients_have_less_dopamine.png

What causes Parkinson's disease?

Like most other neurodegenerative disorders, the exact cause of Parkinson's disease is yet to be determined. However, researchers have confirmed that a small number of affected individuals inherit the disease through genetic mutations (Sullivan and Toulouse, 2011). Environmental factors are also likely to play a role in the development of the disease, even though specific factors are yet to be identified.

How are the symptoms treated?

In the early stages of Parkinson's disease, drugs that affect the release of chemicals in the brain are used to alleviate motor symptoms. The most commonly prescribed drug is levodopa, a chemical that increases the release of dopamine in the remaining dopaminergic neurons (Sullivan and Toulouse, 2011). Another popular drug used to treat Parkinsonian symptoms are dopamine agonists. These chemicals mimic the effects of dopamine by stimulating the body in ways similar to dopamine. As a result, the body is able to carry out coordinated movements once again. Unfortunately, because the disease is progressive in nature and worsens with time, these drugs will eventually lose their efficacy due to the body's increased tolerance to the chemical.

What are the future research avenues for the treatment of the disease?

Currently, there are no known therapies that are effective in the long-term. Like most other neurodegenerative diseases, no cure is available for the condition. However, ongoing research has shown that neurotrophic factors (proteins that are important for the development of the nervous system) may be useful in preventing neurodegeneration (Sullivan and O'Keefe, 2016). Evidence has shown that some of these proteins are capable of encouraging the growth of dopaminergic neurons, and improving motor function (Peterson and Nutt, 2008). With more research, we may be able to uncover more promising results.

References

- Meissner, W.G., Frasier, M., Gasser, T., Goetz, C.G., Lozano, A., Piccini, P., Obeso, J.A., Rascol, O., Schapira, A., Voon, V., Weiner, D.M., Tison, F. & Bezard, E. (2011). Priorities in Parkinson's disease research. *Nature Reviews Drug Discovery*, 10, 377-393.
- Peterson, A.L. & Nutt, J.G. (2008). Treatment of Parkinson's disease with trophic factors. *Neurotherapeutics: The Journal of the American Society for Experimental NeuroTherapeutics*, 5(2), 270-280.
- Rangasamy, S.B., Soderstrom, K., Bakay, R.A. & Kordower, J.H. (2010). Neurotrophic factor therapy for Parkinson's disease. *Progress in Brain Research*, 184, 237-264.
- Sullivan, A.M. & O'Keefe, G.W. (2016). Neurotrophic factor therapy for Parkinson's disease: past, present and future. *Neural Regeneration Research*, 11(2), 205-207.
- Sullivan, A.M. & Toulouse, A. (2011). Neurotrophic factors for the treatment of Parkinson's disease. *Cytokine & Growth Factor Reviews*, 22(3), 157-165.