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Foundations of Language Science and Technology
Cognitive Foundations

# Tutorial[1]

# Setting up a Simple Experiment

Consider the following two sentences:

> *The doctor cured by the treatment needed several weeks to recover.*
>
> *The patient cured by the treatment needed several weeks to recover.*

In both cases, 'cured' is a past participle and introduces a reduced relative clause. However, intuitively, it seems that the sentence onset "*The doctor cured*…" suggests a reading in which the doctor is the agent of the sentence and '*cured*' the verb of a main clause. In the second sentence, this appears less likely, because a patient is more likely to be cured then to cure someone (in linguistic terms, more likely to be the patient of *curing* than its agent).

Imagine you wanted to investigate whether the semantic properties of the subject can immediately affect the type of syntactic structure built by the parser, or whether the parser is autonomous and semantic processing only steps in afterward.

The main object of this tutorial is to find materials and prepare them for pre-testing, before running the actual experiment.

First you need to look for verbs and nouns using your personal intuition. Then you are going to pre-test your materials to obtain plausibility ratings for each verb-noun pair. In the pre-test, the participants will be asked to indicate on seven point scale how likely it is for each agent or patient to do something (e.g., *How likely is it for a doctor to cure someone?*)

## *Tasks*

1. Formulate $H_0$ and $H_1$ for the main experiment. What predictions with respect to reading times does the modular account make, what predictions does an interactive account make?

2. Find 4 items (4 verbs and 4 pairs of nouns) you could use as materials, such that when in company of the given verb, one noun should intuitively be rated high and one low.

[1] This tutorial is adapted from previous tutorials given by Garance Paris.

3. Think about which other factors might influence processing and how to control them.

4. … (come to class on Monday and bring your laptop)

If you wish, you may submit this by Sunday evening 6pm.