**R-Manual – Writing**

Introduction: Explain that this is a book not explaining statistics, but more on how to perform stats in R

* Grafiekje met variable/keuze mogelijkheden etc en dan naar welke pagina ze in ons boekje moeten gaan voor Hoe in R te doen.

This manual is for created for students by students. The idea came about when Lise and myself were doing our major research projects from Utrecht University.

Considering we spent many hours looking for simple solutions and seeing that Lise was a student assistant during the R course in her bachelors, we thought it would be a nice idea to add all our trial-and-errors with the knowledge we got from it into a little booklet for other students. We all know that when we do not use R for a long time, we tend to forget some basics. So now, instead of googling for hours, just open this booklet, and follow the steps/refresh your brain.

Of course, many online tutorials exist, so why would this one be any different? This manual only scratches the surface on how to use R. For a deeper understanding of statistics and specific packages, we provide the links accordingly.

We aim to explain some basics, while looking at certain datasets that are common for animal behaviour students. We focus especially on primate behaviours, but this is easily extended to other animals. Additionally, per chapter we provide a list of tutorials and links for students who want to deepen their knowledge.

It is important to note that while we both graduated, we have developed a certain knowledge of R. Yet, as we both will continue to learn more, we will keep adding new information to this manual as we ourselves learn. Thus, keep this in mind! We will keep you updated on new versions via GitHub, social media, and via your institutes (hopefully).

Using R involves spending more time on Google looking for solutions than actually coding. But this is so nice about the R community – most often, a solution will be available to your problem, which you will just have to adjust slightly to fit your data. But hey, this is where we come in – our goal is namely to make you spend less time googling, and actually read this manual instead! However, you will still need google. A lot. But we will provide a start of where to look up stuff for you.

It is a step-by-step guideline aimed to help you use R while performing statistical tests, and is not aimed at explaining statistics per se.

It is aimed at both students who are using R for the first time, as well as students who know some things about R.

* Explain each chapter.
* BASICS = important to know how the program works (rules, what it can do, etc.)

So what is R?

R is a free, open source, fluffy XXX (Quote Andy field!) computing language, mainly used for statistical analysis.

Why should I learn R?

Many people have probably been taught SPSS, yet R has increasingly become easier, more versatile, and can do much more in a shorter amount of time. It has many useful functions. It can sometimes be a little intimidating for students (and professors!) who do not have any experience with coding/scripting. Does that mean you need to know how to code? Absolutely not, so rest assured! Many people do not know what they are doing (even high scholars are still googling stuff!). It even becomes rewarding to have finished a project and be able to say “I coded this”!

So, let us start by the beginning!

**Chapter 1 – The basics**

First off, if you have not already done so, best is to install R and RStudio on your computer:

⇒ Install R(studio)

⇒ Update R:

To update R on Windows, try using the package [installr](https://cran.r-project.org/web/packages/installr/index.html) (only for Windows)

1. Install and load installr: install.packages("installr") and library(installr)
2. Call updateR() function. This will start the updating process of your R installation by: “finding the latest R version, downloading it, running the installer, deleting the installation file, copy and updating old packages to the new R installation.”
3. From within RStudio, go to Help > Check for Updates to install newer version of RStudio (if available, optional).

⇒ Make a project if you want to save it in your global environment (handy when having models that take 4 hours to run)

⇒ Basic tools around R (that are explicit but not easily understood)

⇒ Most used packages for what kind of data

**USING GIT**

It might sound daunting, but what we will explain here is actually rather simple.

1. Open GitHub (github.com)
2. Sign up (I would suggest using your non-university email so that you keep the same GitHub account for the rest of your life)
3. Make a project
4. …

Now that you understand all of this, you can safely download GitHub Desktop (<https://desktop.github.com/>). This mainly does what we just explained above for you. The reason we only mentioned it now is because we wanted to be sure you properly understand the steps necessary, which from now on, let’s be honest, you will let the GitHub desktop do for you.

So, open GitHub desktop. Select a current repository, check that no one has changed anything (IMPORTANT) and pull new information form GitHub. Now, you can safely change anything, and reupload things to GitHub (push to GitHub).

**QUESTIONNAIRE – ANSWERS**