

2009

# Hemispheric interaction in simple reaction time as a function of handedness

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The Plymouth Student Scientist  
University of Plymouth

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## Appendices

### Appendix 1

#### Study Information Sheet

##### Hemispheric interaction as a function of handedness

##### Study information sheet

I understand that my participation in this study will involve answering a brief questionnaire about hand preference. I will then be seated in front of a computer screen with my chin resting on a chin rest, and will be required to focus on a series of white circular lights being flashed up on a blank screen. I will be required to respond to these flashes using key presses on a keyboard. This will require approximately 30 minutes of my time.

I understand that my participation in this study is entirely voluntary and that I can withdraw from the study at any time without giving a reason.

I understand that I am free to ask any questions at any time. I am free to withdraw or discuss my concerns with the experimenter; Emily Howe, or the experiment supervisor, Matt Roser.

I understand that the information provided by me will be held totally anonymously, so that it is impossible to trace this information back to me individually. I understand that, in accordance with the Data Protection Act, this information may be retained indefinitely.

I also understand that at the end of the study I will be provided with additional information and feedback about the purpose of the study.

## Debrief sheet

### Hemispheric interaction as a function of handedness study

#### Debrief

I would like to take this opportunity to thank you for your participation in my study. My research is concerned with investigating whether handedness, assessed by a commonly used inventory, affects behavioural measures of interaction and transfer between the two hemispheres of the brain, based on reaction times.

According to the right shift theory proposed by Annett (1998), more left handed people than right handed people lack a certain genotype that establishes normal cerebral asymmetry. People who lack this genotype show less laterality, in terms of behaviour and brain processes. Therefore, non-right handed people may use both hemispheres more for processes that tend to be lateralised in people with normal cerebral lateralisation. This suggests there may be more interaction between the hemispheres in left handed people. As a result, measures of transmission between the two hemispheres may be reduced, as their brains are more adept at transferring information between hemispheres.

The main aim of this research was to investigate this prediction that information processing in non-right handed people may involve greater interaction between hemispheres, and this will lead to lower measures of inter-hemispheric transmission.

Understand that your data will be held anonymously, and it will not be possible for the experimenters or anyone else to trace them back to you. You have the right to withdraw your data if you have any concerns about it.

If you would like to find out more about this area of research, the following reference would be useful.

Annett, M. (1998) Handedness and Cerebral Dominance: The Right Shift Theory. *Journal of Neuropsychiatry*, 10, 459-469

**Appendix 2**

Edinburgh Handedness Inventory (EHI)

R. C. Oldfield (1972)

Edinburgh Handedness Inventory

Date of birth.....

Sex.....

Please indicate your preferences in the use of hands in the following activities by **putting + in the appropriate column**. Where the preference is so strong that you would never try to use the other hand unless absolutely forced to, **put + +**. If in any case you are really indifferent **put + in both columns**.

Some of the activities require both hands. In these cases the part of the task, or object, for which hand preference is wanted is indicated in brackets.

Please try to answer all the questions, and only leave a blank if you have no experience at all of the object or task

		LEFT	RIGHT
1	Writing		
2	Drawing		
3	Throwing		
4	Scissors		
5	Toothbrush		
6	Knife (without fork)		
7	Spoon		
8	Broom (upper hand)		
9	Striking match (match)		
10	Opening box (lid)		
i	Which foot do you prefer to kick with?		
ii	Which eye do you use when using only one?		

*Please leave boxes below blank*

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### **Appendix 3**

#### **General instructions for RT task**

**Instructions:**

**In this experiment you will be asked to keep your eyes on a fixation point (+), and respond to a stimulus by pressing the middle of the spacebar with your forefinger. The stimulus will appear either to the left or the right of the fixation point. It is important that you only look at the fixation point at all times!**

**Before you begin you must center the keyboard. Do this by lining up the middle of the spacebar with the middle of the computer monitor. Center the keyboard now.**

**Press the spacebar when you are ready to continue.**

#### **Example instruction screen for RT task (right hand response trial)**

**This block contains 100 trials.**

**Respond to each trial by using your RIGHT forefinger.**

**Place your right forefinger on the middle of the spacebar now.**

**Press the spacebar to begin this block.**