

I would like to thank Dr. Andrea Turolla for the thorough evaluation and interest in my Doctoral dissertation. Given below are the answers to the specific questions raised by the Reviewer and responses to their suggestions.

All the suggestions have been considered and the manuscript was changed accordingly. All the other comments are discussed below.

I would like to inform Dr. Andrea Turolla that, as suggested by the other reviewer of my thesis, the Chapter 4 has been replaced with the Hypotheses and aims Chapter. As the main consequence, the following Chapters' numbers have been modified.

Sincerely,

Michela Di Girolamo

Abstract Please, expand following acronyms: EMG and EMG-BF.	Acronyms have been expanded
Aim of the work and summary Please, expand following acronyms: EMG, EMG-BF and GUI.	Acronyms have been expanded
Main text	
Is there any policy about copyright licenses of pictures printed in previous publication? In case, authorisation from editors/authors or that public licenses are available for each reprinted picture should be claimed in captions.	Information about copyright licenses of pictures printed in previous publication have been included in the caption of Figure 1 (the only one for which it was possible to find this information). Other figures have been deleted or substituted with a different version of the picture that I reproduced according to the text.
Many typos are present throughout the whole manuscript, some are reported in the following table. Please check the whole manuscript to improve quality of writing, with the aim to facilitate the reader.	Typos have been corrected
Please, check all the anatomical reference in the main text, proper names of anatomical structures are usually reported with definite article “the” (e.g. <i>the cerebellum</i> , <i>the brain stem</i> , <i>the spinal cord</i>).	The definite article has been applied to the proper names of anatomical structures
The noun “evidence” is uncountable, please check all the cases it is reported as plural in the main text and turn it to singular, with related correct verbal time.	The use of the “evidence” has been checked and corrected in the entire text
The sentence “[...] whose axons exits the spinal cord and traverses progressively smaller branches of	The sentence has been modified in the proper way: “[...] whose axons exit the spinal cord and traverse

peripheral nerves until they enter the muscle they control reaches. [...]” at page 28 sounds to be suspended. Please check and rephrase.	progressively smaller branches of peripheral nerves until they enter fibers they control [...]”
At page 32 it is reported that a “non-systematic pilot study was conducted”. Nevertheless, it is not clear what is meant for “non-systematic”. In fact, in biomedical literature “systematic” or “non-systematic” is usually referred to review methodologies, but not to study designs which are rather controlled or non-controlled. Please, rephrase the sentence for better definition of what is meant.	The expression has been corrected. The term “non-systematic” has been removed since “pilot study” is sufficient to describe the main aims of the study: to test the design of the device and the protocol and to identify the variables of interest.
Criteria for patients’ inclusion reported at page 33 are characterised by qualities of impairments (e.g. severe upper limb impairment, strong cognitive limitations, severe aphasia): was any clinical definition referred to outcome measures thresholds used to differentiate between severe, mild or moderate, for example?	Clinical definitions have been reported in the text: “mild to severe post-stroke upper limb impairment (0 <FMA-UE< 66) and ability to understand instructions. Exclusion criteria were: epilepsy without a pharmacologic treatment, severe aphasia (Token Test score < 58) and upper limb pain“
In table II it is not clear whether the side of hemiplegia is referred to body side or hemisphere affected by stroke lesion. As acknowledged, in the motor system brain hemispheres control contralateral body side (i.e. left hemisphere controls voluntary motor behaviour of right body side and vice versa), please specify better what the frequency reported are referred to. Moreover, it is not reported the unit of measurement of “Time since stroke” variable, but data are reported both in years and months: please make it uniform, 7 years might range from 72 to 84 months, that even though remains a long distance from stroke, might make a big difference. I would suggest staying on months as unit.	The label “side of hemiplegia“ has been replaced with “Paretic side “ and the time since stroke has been reported using months as unit, for the entire dataset.
Please provide descriptive demographic of healthy subjects mentioned at page 33. At the same page it is reported that the “Ethical Committee of the San Camillo Hospital” approved the study, but this is not coherent with what is reported at page 32 (i.e. “ethics committee of the Provincia di Venezia). Please, make it consistent.	Demographic data of healthy subjects have been added in Table III. The Ethics Committee of the Provincia di Venezia and IRCCS San Camillo has been correctly indicated.
In caption of figure 11 it is not reported any unit for value 0.4, please check it.	The unit (seconds) has been specified (Figure 8)
Please, report complete statistics both in captions and main text: statistical tests used, statistic value and	Complete statistics have been reported in captions

exact related p-value.	and main text
At page 38 it is reported that some muscular activity is displayed in figure 6, but the same figure which is at page 14 does not seem to be coherent with the same contents. Please, check it.	Thank you for the observation. The reference to the correct Figure has been indicated.
Please, report the exact chi-square value, related degrees of freedom and exact p-value in the text, at page 39.	Data have been reported in the text
MCV acronym reported at page 44 is then expanded at page 48, please anticipate extension of MCV acronym at page 44.	The extension of MCV acronym has been anticipated at page 44
Commonly, levels of impairment in biomedical language are reported as mild, moderate, severe, please change heavy aphasia accordingly, at page 49.	“Heavy aphasia” has been substituted with “severe aphasia”
At page 50, report the clinical trial as “ongoing” and not “under way” in the first sentence; “comparable” instead of “symmetrical” the affected side variable; moreover, report how severe, moderate and mild upper limb motor impairment were defined.	All the requested corrections and details have been included in the text
Please, assign a name to Group 1 and Group 2 respectively, with the aim to identify immediately which of the two is the experimental and which the control, throughout the rest of the manuscript. Using numbers instead of names make difficult for the reader to remember which group was what, making harder than needed interpretation of results.	Thank you. I agree with the reviewer. Appropriate names have been assigned: Complete Group (CG) and Not Complete Group (NCG).
Please, include expanded acronyms in the caption of table V, whereas table VI and VII are redundant with regard to figure 21 and 22, respectively. Descriptive characteristics of data can be reported in just one of the two formats.	Acronyms have been expanded in the table caption and redundant tables have been deleted.
Please, comment the results about variations of target dimension and exercise duration observed in the clinical trial (page 84-85), with reference to the Fitts Law. In fact, this point and its implications might be crucial for the user in designing the final interface.	The analysis has been performed for exercise Ball and included in the thesis (page 73-75)