

# Efficacy of Group Language Games as Therapy for Post-Stroke Aphasia

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Word retrieval difficulty is a common and serious symptom of aphasia. Rehabilitation has been shown to be effective if delivered intensively, but this presents challenges for public health systems. Structuring therapy as a social group game could offer a motivating and cost effective alternative to individual therapy. To date, however, few studies have focused on this mode of therapy.

A preliminary study to assess the potential for social group games has recently been carried out by potential supervisor C. Romani at the Moor Green Outpatient Brain Injury Unit. Only a few participants have been tested (N=6), but results have been promising. All participants showed significant improvements in word retrieval both in picture naming and in a more functional, narrative context, demonstrated good attendance, and reported satisfaction with the therapy. The piloted game was based on the social game of charades. The participant on call had to communicate a target word (depicted on a picture) to a member of his/her team who had to guess the word. This game, however, offers the possibility of being developed in a number of ways with members of the team having not only to produce the target word to gain points, but also produce related words or produce the target word in sentences.

The positive preliminary findings plus the flexibility of the piloted paradigm offer the basis for a research programme focused on the assessment of group language games for the rehabilitation of aphasia. This approach may be a serious competitor to face-to-face speech and language therapy (SLT) both for efficacy and practicality of delivery, but a number of characteristics need development/demonstration before uptake by NHS trusts becomes a possibility.

1. **Theory-based.** We want to develop a game-based approach that is motivating and fun, but which is, at the same time, solidly based on state of the art psycholinguistic theories. We will assess the relative efficacy of different strategies to facilitate word retrieval based on our knowledge of the lexical system and relations with other cognitive modules. For example, we will compare facilitation through phonemic cueing with facilitation through non-linguistic inputs (gestures).

2. **Generalisation and maintenance over time.** A difficulty of current rehabilitation is that while practised words are relearned, gains do not generalize to non-practised words, benefits decrease over time, and evidence of uptake in functional communication is lacking. We will assess whether these difficulties are ameliorated by practising clusters of associated words (rather than on restricted sets as is typically done) and using the words creatively in sentences.

3. **Individualisation.** A challenge of SLT is to develop therapy protocols which are, at the same time, general enough to be taken 'off-the-shelf' and flexible enough to be tailored to the needs of individual patients. This project will develop a group-game protocol where patients' engagement may be varied depending on ability.

4. **Meaningful Outcomes.** Finally, gains of SLT are typically measured either too narrowly (directly with the trained materials), or too generally (e.g., overarching speech gains) thus, showing no benefits. We will assess linguistic gains with newly developed materials which are related to what is practised in therapy, while at the same time considering generalisation to connected speech, with measures of brain-activation pre and post therapy.