Reviewer's report

**Title:** Aggravated stuttering following subthalamic deep brain stimulation in Parkinson’s disease - two case reports

**Version:** 1 **Date:** 13 January 2011

**Reviewer:** F Klostermann

**Reviewer's report:**

In their manuscript ‘Aggravated stuttering following subthalamic deep brain stimulation in Parkinson’s disease’ the authors report on two subjects who developed a stuttering speech disorder under DBS. Although the induction of this side effect by DBS appears altogether relatively seldom, the authors make clear that it was reliably and repeatedly assessed in a blinded fashion, depending on the stimulation state (only present in the on-condition). Since DBS neuromodulates specific nuclei within cortico-basal networks, the observation is of conceptual interest with respect to stuttering and I therefore support its publication.

Some minor points might, however, be revised:

1. The authors speak of a ‘relation’ between stuttering and stimulation induced motor improvements. They should avoid this term and choose a wording which indicates that both phenomena were observed together, causal relations being undefined.

2. What would the authors suggest conceptually the dissociation between motor improvement on the one hand and speech deterioration on the other hand might mean. Are speech and body motor systems neuroanatomically distinct, etc.? Are the conceptual accounts for basal ganglia roles for speaking / stuttering and body kinesia really different and why should we expect differential actions?

3. The analogy between verbal dysfluency and stuttering appears unlikely. The authors observed a distinct phenomenon from the language-related impact of DBS on probably semantic or phonetic capacities.

4. In this regard, the authors might avoid the classification of DBS-dependent stuttering as ‘language-related’ and prefer the term ‘speech-related’.

5. Could the authors comment on the localisation of the DBS electrodes?

One clinical remark: the UPDRS values of 8 and 12 (best on condition) appear extremely low for patients with a more than 20 years course of PD. They should check this again.