TITLE: STRUCTURAL AND FUNCTIONAL DAMAGE IN PRIMARY PROGRESSIVE APHASIA: ANANATOMICAL LIKELIHOOD ESTIMATION META-ANALYSIS

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Primary progressive aphasia is a focal dementia resulting in damage to the language network with three described subtypes: non fluent variant in which patients present with apraxia of speech and agrammatism, semantic variant in which patients present with impaired comprehension due to a underlying deficit in semantic memory, and logopenic variant in which patients present with word-finding problems and sentence repetition deficits which has been suggested to be due to an underlying phonological short term memory. This study used quantitative meta-analytic techniques to collate all the magnetic resonance imaging and fluorodeoxyglucose positron emission tomography studies to identify the most reliable areas of atrophy and hypometabolism respectively in these conditions. In the semantic variant, there was significant atrophy and hypometabolism bilaterally in the anterior temporal lobes, worse in the left hemisphere, confirming this areas key role in semantic memory. In the non-fluent variant, there was significant atrophy and hypometabolism in the left inferior frontal gyrus and significant hypometabolism in the medial frontal gyrus confirming studies which identify these areas importance in comprehension and production of grammar and production of speech. Lastly, in the logopenic variant there was significant atrophy and hypometabolism in the superior temporal gyrus and supramarginal gyrus which have previously been identified to be key areas involved in phonological short term memory. In conclusion, this study identifies the most reliable areas of atrophy and hypometabolism consistent with the cognitive deficits found in primary progressive aphasia and future studies should focus on directly relating cognitive measures to neural integrity.

Biography
Dominic Ng is a medical student at the University of Manchester. He has achieved a first degree in his BSc in Biomedical Sciences and is currently undertaking a MRes in Medical Sciences with a focus in neuroimaging in dementia.

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Session name/ number: Neuroimaging
Category: (**Poster Presentation**)