

# ACN

**See what Sir Lawrence Freedman thinks.  
From the inside**

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## Summary

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APG is a not-for-profit organisation dedicated to supporting excellence in advertising and communications strategy. The challenge for JWT, who was promoting the 2014 APG Big Thinking on Strategy Conference, was how to impress a discriminating audience of experienced advertising strategists and planners.

We scanned the brains of three of the APG keynote speakers (Guy Murphy, Sir Lawrence Freedman, and Bridget Angier) as they silently gave their presentation in the scanner. We used their brain scan data to help JWT create a set of print advertisements promoting the conference.

## Methods

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### *Participants*

Three volunteers (2M, 1F) whose ages ranged from 48-65 participated in the experiment. All participants were keynote speakers at the 2014 APG Big Thinking in Strategy meeting and were right-handed, native speakers of British English. Each provided informed consent before participating in the study. This study was approved by the UCL Research Ethics Committee [fMRI/2008/010].

### *Experimental procedures*

Each volunteer was asked to alternate between thinking about the content of their keynote address and performing a simple finger tapping task in the MRI scanner. The task was cued with a single word presented on a screen and they had 12 seconds before it switched to the other task. In other words, the experiment used a simple A/B block design with 12 second block lengths. There were 8 repeats for a total duration of 3 minutes, 12 seconds.

### *Data acquisition*

The data were collected on a Siemens 1.5T MRI scanner at the Birkbeck-UCL Centre for Neuroimaging (BUCNI) using a standard Siemens 32-channel head coil. A gradient-echo echo-planar imaging (GE-EPI) sequence was used to acquire T2\*-weighted images (TR=3s, TE=50ms, 192 × 192mm FOV, 64 × 64 matrix) yielding a 3.2 × 3.2 × 3.2mm resolution. Prospect motion correction (3D PACE) was applied during data collection to minimize the effects of head movement in the scanner. In addition, a T1-weighted magnetization prepared rapid gradient echo sequence (MPRAGE; TI = 1000 ms, TR = 8.4ms, TE = 3.57ms, flip angle = 7°, matrix = 224 × 256, 176 axial slices, 1 × 1 × 1 mm voxels) was used to collect a high-resolution image of their brain anatomy.

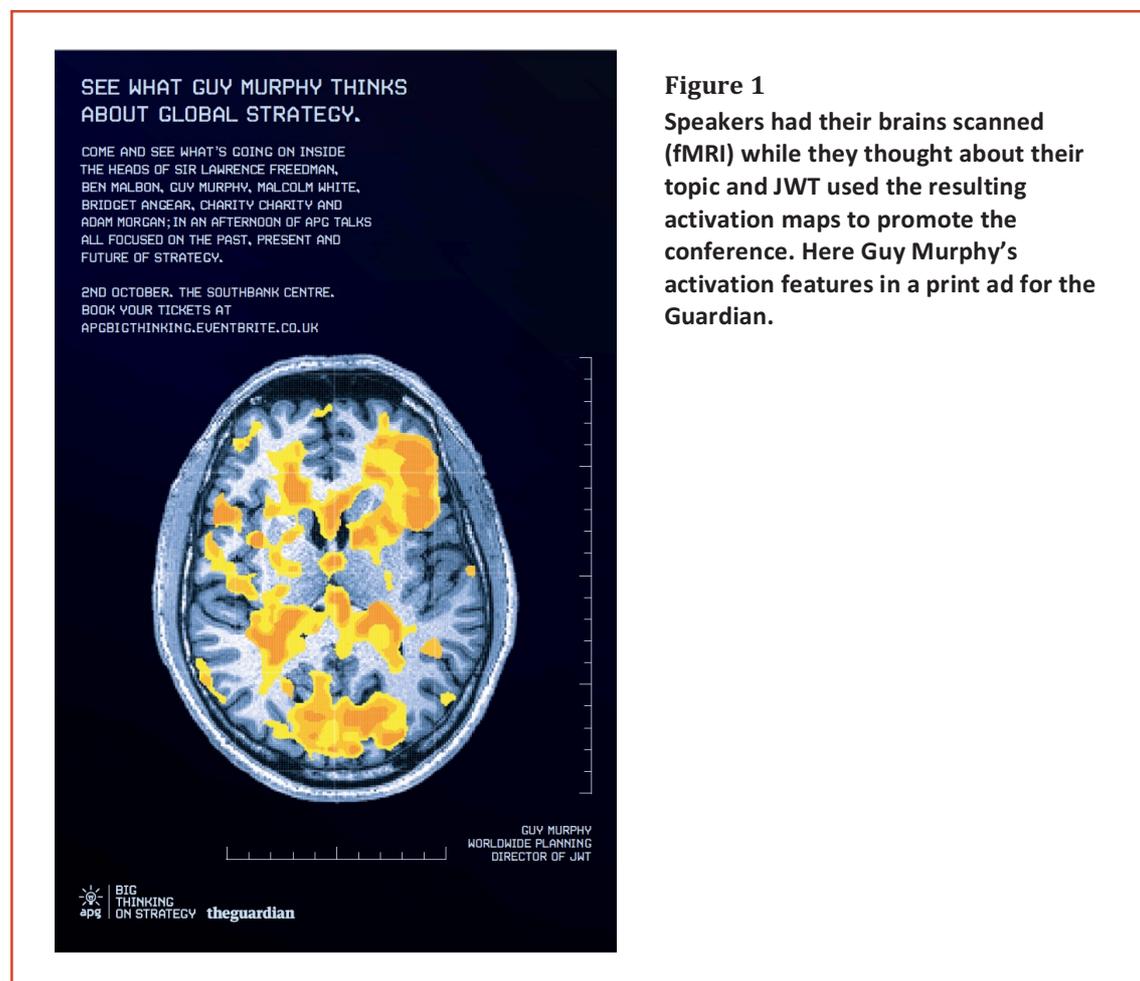
### *Analysis*

The data were initially re-aligned to reduce the effects of residual head motion, normalized with an affine transformation into the standard space defined by the Montreal Neurological Institute's average of 152 adult brains (the MNI-152), and smoothed with a 6mm full width at half-maximum (FWHM) isotropic 3D Gaussian kernel to improve signal-to-noise. The resulting images were entered into a mass univariate generalized linear model (GLM) analysis with a single, alternating block regressor. The temporal derivative of the regressor was included as a

covariate-of-no-interest to reduce the effect of spatially varying haemodynamic lag. The resulting statistical parametric maps (SPMs) were evaluated using a voxel-wise statistical threshold of  $Z > 3.1$ , corresponding to  $p < 0.001$ , uncorrected for multiple comparisons. The SPMs were displayed in the individual's anatomical space for maximum precision.

## Results

Because the aim was simply to generate compelling visual imagery – to see inside the minds of the keynote speakers – the results were the activation map images. JWT's creative team used the images for a series of print advertisements in the Guardian (see Figure 1 below), a micro-site advertising the conference, branding of all the conference materials, and in a social media campaign on Twitter.



**Figure 1**

Speakers had their brains scanned (fMRI) while they thought about their topic and JWT used the resulting activation maps to promote the conference. Here Guy Murphy's activation features in a print ad for the Guardian.

We hoped you enjoyed reading this whitepaper. If you have any questions regarding the methods, results, or other aspects of this research, please get in touch with us at [info@acnlabs.co.uk](mailto:info@acnlabs.co.uk). For more information on terms of use, please see our website at <http://www.acnlabs.co.uk/terms-of-use>.