

6-11-2016

THE NEUROSCIENCE OF INVESTOR DECISION MAKING: AN FMRI STUDY (INTERACTIVE PAPER)

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Recommended Citation

Drover, Will; Cerf, Moran; and Shane, Scott (2016) "THE NEUROSCIENCE OF INVESTOR DECISION MAKING: AN FMRI STUDY (INTERACTIVE PAPER)," *Frontiers of Entrepreneurship Research*: Vol. 36 : Iss. 1 , Article 21.
Available at: <https://digitalknowledge.babson.edu/fer/vol36/iss1/21>

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≈ INTERACTIVE PAPER ≈

**THE NEUROSCIENCE OF INVESTOR DECISION
MAKING: AN FMRI STUDY**

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Principal Topic

This research looks inside the “black box” of the brain to examine how an equity investor’s brain responds neurologically to pitches by entrepreneurs. Specifically, we explore neural reactions to variations in entrepreneurial affect. We hypothesize that entrepreneurs’ pitches will activate different regions of the brain and result in different neurological activations in investors’ brains depending on the level of displayed entrepreneurial enthusiasm.

Method

We adopt a randomized, single factor (2-level) design where investors underwent fMRI brain scanning while assessing pitch videos. The pitches were manipulated and reflected either high or low entrepreneur enthusiasm. In total, 20 investors were randomly assigned to assess 10 of the 20 available pitch conditions.

Data acquisition was conducted using a 3T MRI scanner with a 12-channel head coil. Functional scans were acquired using a T2*-weighted echo planner imaging pulse sequence. Anatomical images were acquired using a T1-weighted magnetization-prepared rapid-acquisition gradient echo pulse sequence. For each Voxel in each subject we used a linear regression to predict the BOLD signal from the artifact activity and then replaced the signal in each individual Voxel with the residual resulting from the regression. The mean and variance of each of these residuals were matched to the mean and variance of the pre-projection BOLD signal.

Results and Implications

We argue that displayed affect, which influences different regions of the brain using different temporal dynamics than that of frontal areas, allows for early prediction of the choice—*prior* to the subject’s conscious answer. We expect our study to support the observation of VC Guy Kawasaki who notes: “In the first five, ten, or maybe fifteen seconds [investors] decide...And that has important consequences.” More generally, our study explores which areas of the brain are associated with the decision to invest. Using a temporal approach, we offer a sequential stream of processing that is activated while an investment decision is consciously made, and how neural responses differ across individuals.

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