Sheinberg and Logothetis' work in elucidating the function of IT neurons is quite convincing. They effectively demonstrate that certain stimulus selective neurons in IT are tuned for recognition of familiar objects in natural scenes. However, there are a couple critiques that can be levied against this paper. First, the authors provide no mention of receptive field sizes of the neurons that they sample. This introduces a slight issue with object recognition for some of these neurons. For example, if we assume that some of the neurons, they sample have receptive field sizes around 5 degrees then some of the saccades performed by the animal take place entirely in the receptive field. If the stimulus is also inside this receptive field while the saccades are occurring, then this would be an example of the primate "looking" at the target but not perceptually aware of its existence. This begs the question of whether an IT neuron will only fire if an object is perceived by the animal. It would've been wise for the authors to address this. In a similar vein, the authors mention the double takes as an interesting case in their experiment. They claim that only "after the eyes land well away from the target does the characteristic bursting occur.". Essentially, this claim ignores the series of small bursts shown in figure 9a where the neurons clearly display some form of activity a gaze distance quite close to the target. Although the response is much greater when the animal is fully fixating on the target (gaze distance of zero), there is clearly some form of neuron activation before the authors claim that animal has identified the object.

A reasonable follow experiment would be to further probe the case of double takes in the experiment and investigate the aforementioned error in the paper. A similar experimental setup would be used in which primates are trained to recognize objects in natural scenes and recordings are taken from IT neurons that are selective for these objects. However, in this case the objects would be much more difficult to locate by placing them in scenes that are visually distracting or similar to the object itself. Furthermore, using either the white line tracings shown in this study or with a certain gaze distance threshold, the target would be removed if the animal's eyes pass over the target without fully fixating on it. These conditions will not only increase the frequency of the double takes but also eliminate the strong neuronal responses that occur when the animal fixates on the object. With these conditions, if the animal returns its eyes to the target position using what the authors called a "intervening saccade" and the smaller bursts of neuronal responses are still present, it could be conjectured that the animal has performed some kind of perceptual analysis that is distinct from the one mentioned in the paper. Furthermore, this experiment would afford some significance to the smaller bursts of neuronal response that the authors chose to ignore.