



# Ambient and Focal Fixations in the Deployment of Visual Attention

# technicolor

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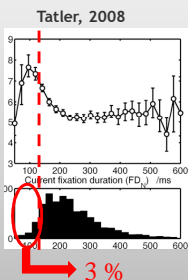
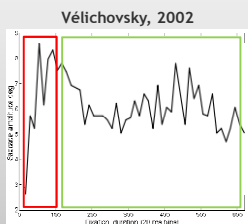
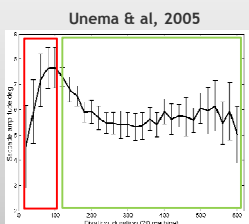
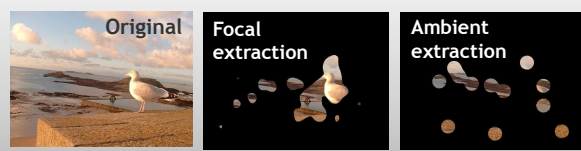
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## To identify ambient and focal fixations

The non-linear relationship between saccade amplitude (SA) and fixation duration (FD) reveals two scanning strategies.

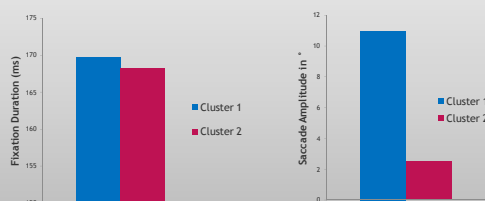
**Ambient process** : Short FD and high SA → *A Wide and Fast scanning of the visual scene*

**Focal process** : Long FD and small SA → *Focused and deeper processing*



Do these ambient fixations are really relevant ?

Suggestion : to use the **K-Means** automatic clustering method to partition fixations in 2 clusters



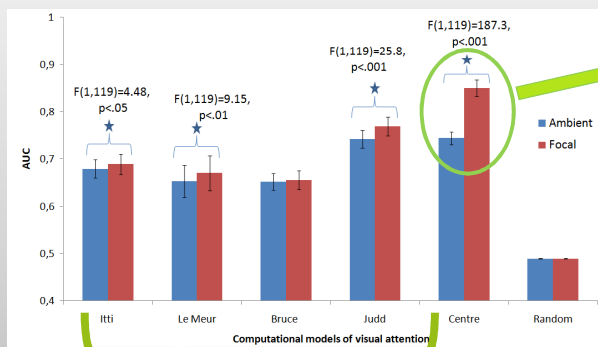
## What are the features of these 2 kinds of fixations ?

Scene versus object processing in the ambient/focal dichotomy



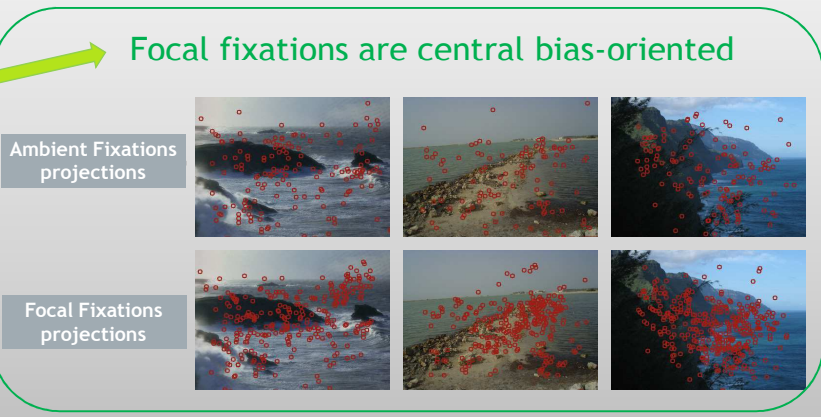
76 % of « cluster 2 » fixations are located out of objects → « cluster 2 » - ambient

45 % of « cluster 1 » fixations are located on the objects (and 82 % of object-based fixations are of « cluster 1 » type) → « cluster 1 » - focal



Focal fixations are saliency-based

Focal fixations are central bias-oriented



## Conclusion

- Saccade amplitudes are sufficient to discriminate between ambient and focal fixations
- Focal fixations are mainly object-based
- Saliency maps strongly predict the focal fixations