

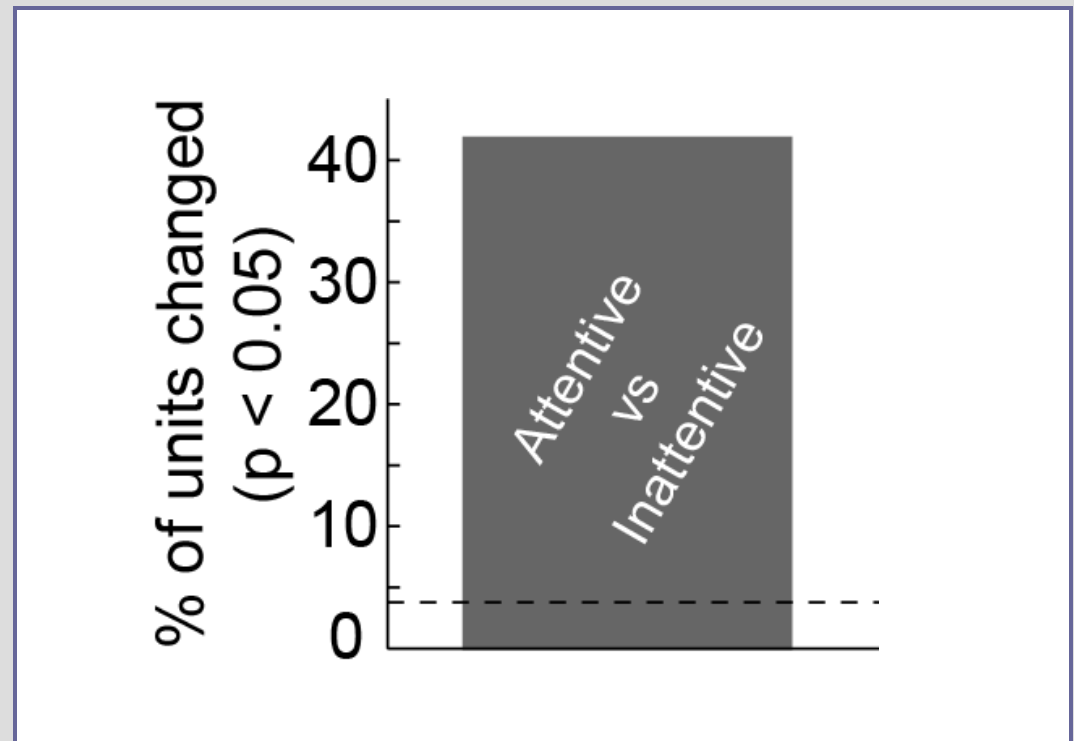
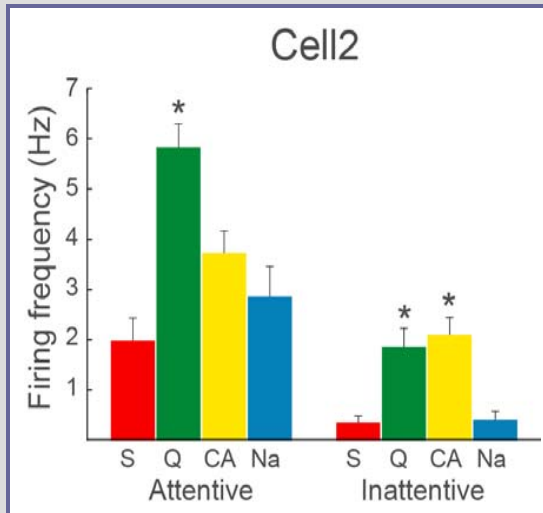
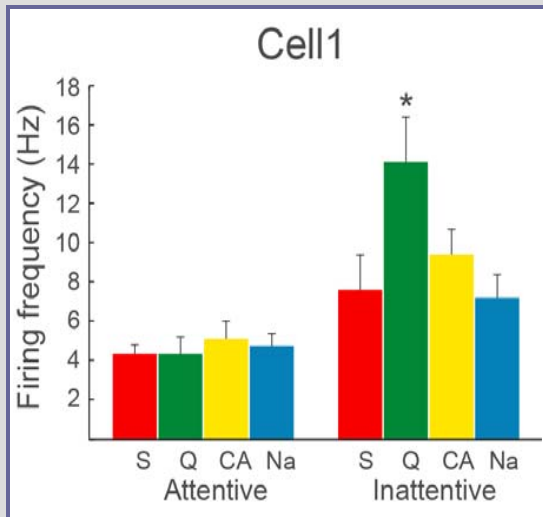
State-dependent modulation of taste response dynamics

Alfredo Fontanini

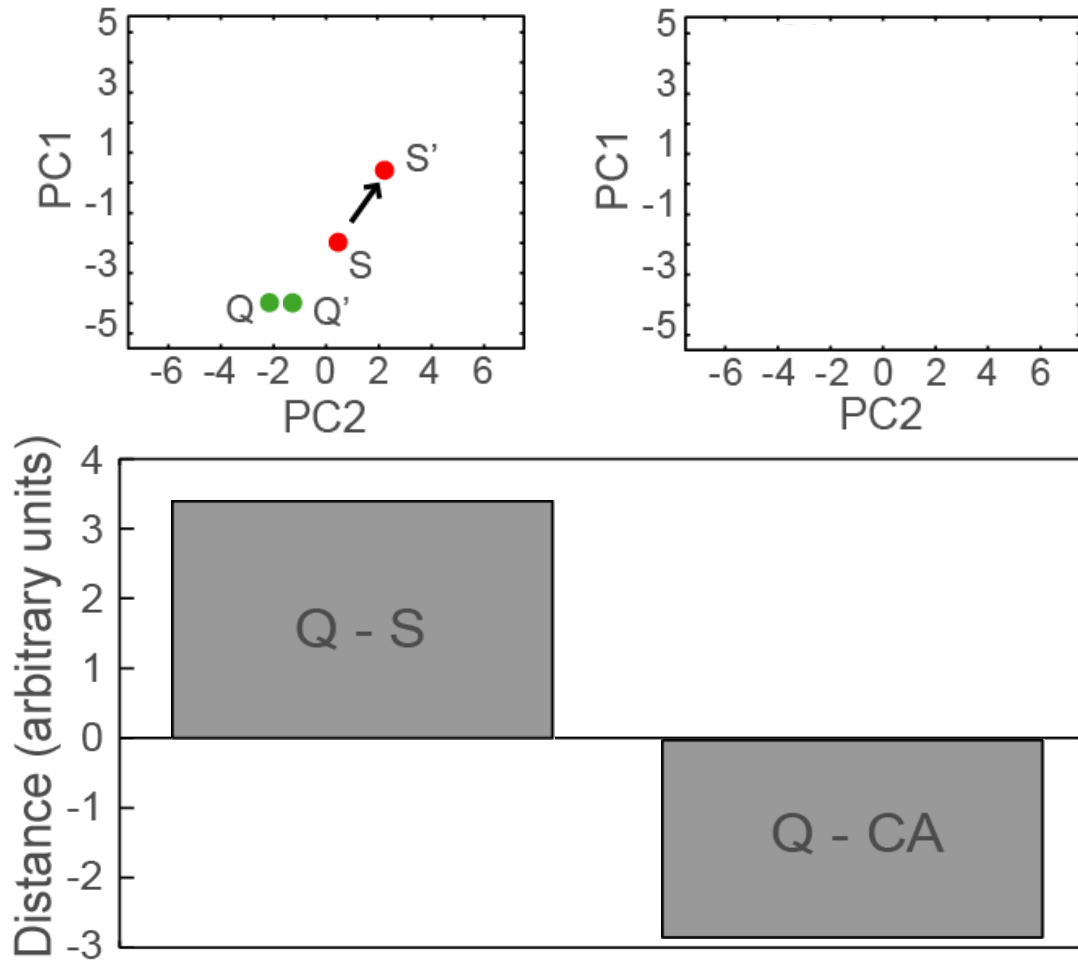
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Attention changes response profiles



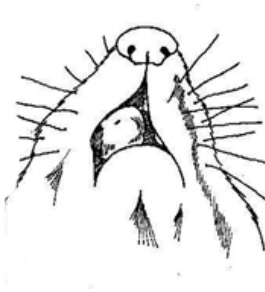
Attention modulates palatability: neural activity



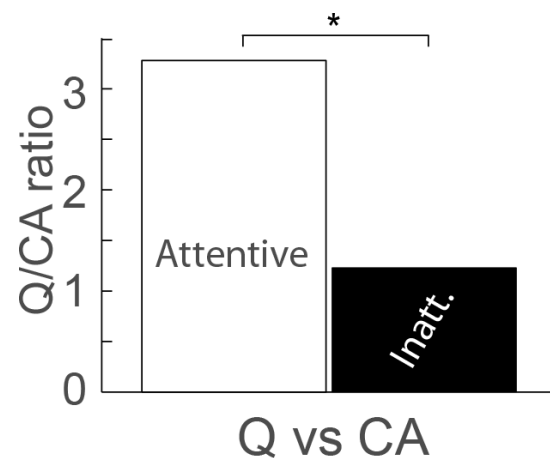
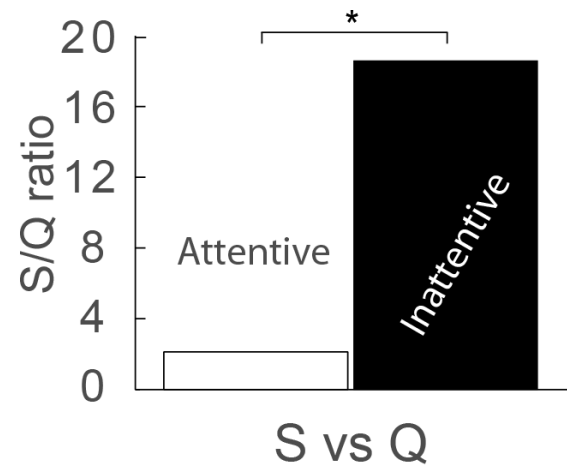
Attention modulates palatability: behavioral responses

Palatability/Hedonics

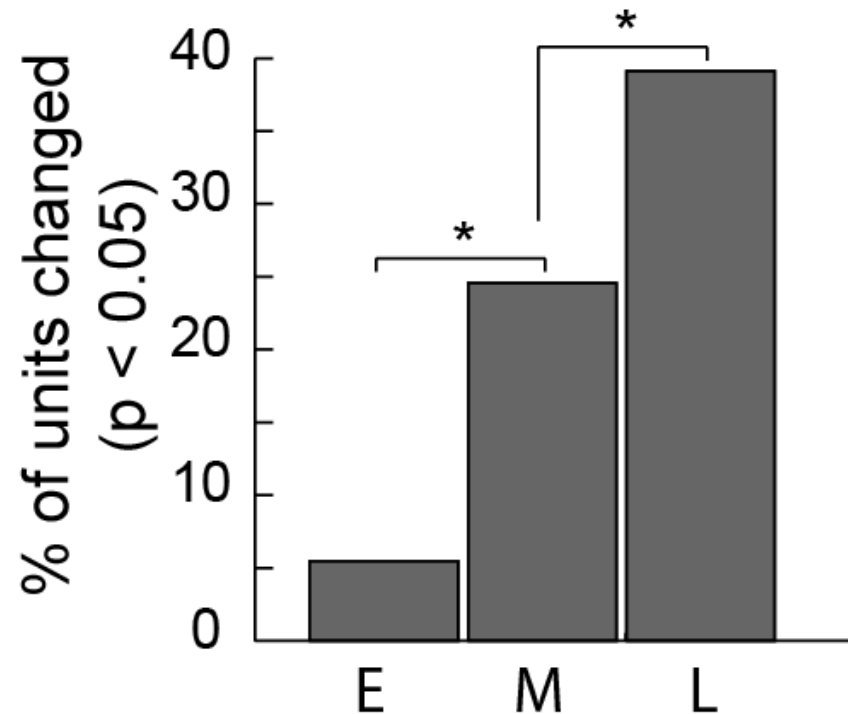
Good
(Sucrose, NaCl)
**LATERAL
TONGUE
PROTRUSIONS
(LTP)**



Bad
(Quinine)
GAPES



Attentional levels modulates temporal dynamics of the response: a simple analysis



Conclusions

Cognitive states reshape the gustatory space emphasizing differences of palatability: during inattention the taste space is simplified and differences in hedonic value are polarized (appetitive vs aversive)

Cognitive states also influence the consistency of ensemble responses: timing of HMM sequences is more reliable when the rat is inattentive

Ensemble reliability is a parameter that can be modulated by cognitive states – less cognitive richness (i.e. less “top-down” modulation) results in less variability