Visual processing of burning fire

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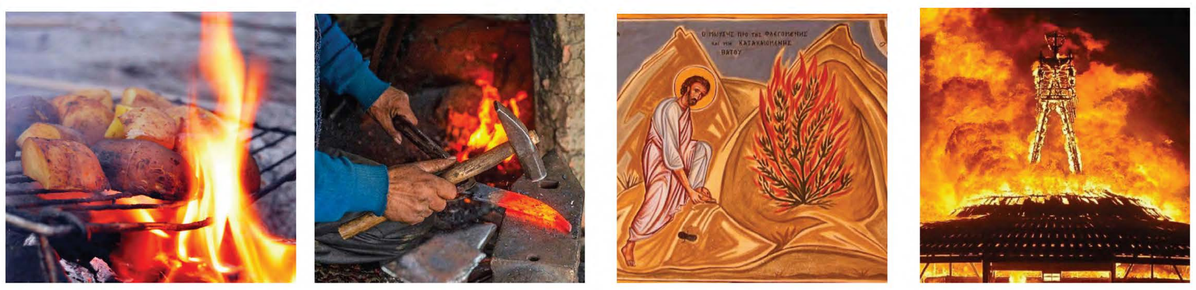
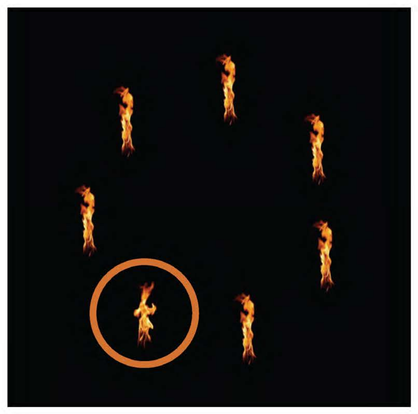
Is visual perception sensitive to the features that characterize burning fire?

Significance



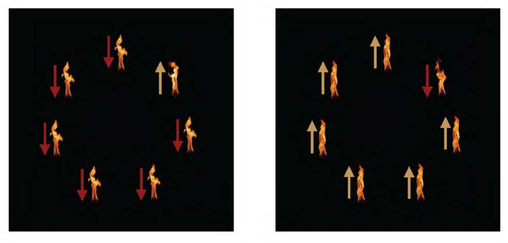
- Taming fire: Unique to hominids
- Socially, historically, practically significant

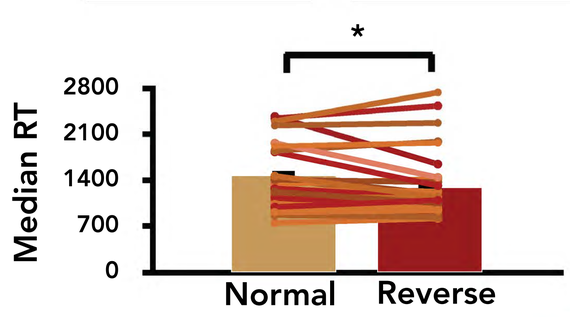
Task



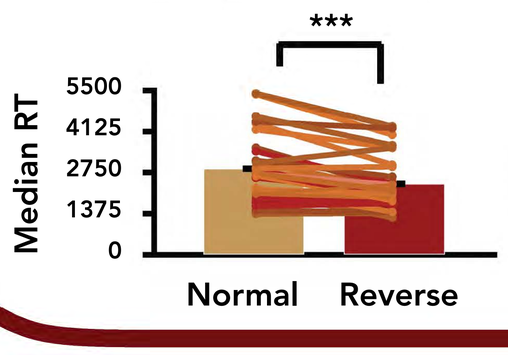
"Is one fire burning differently than the rest?"

Target fire



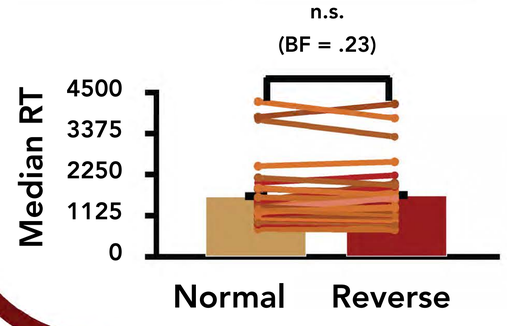


Global motion



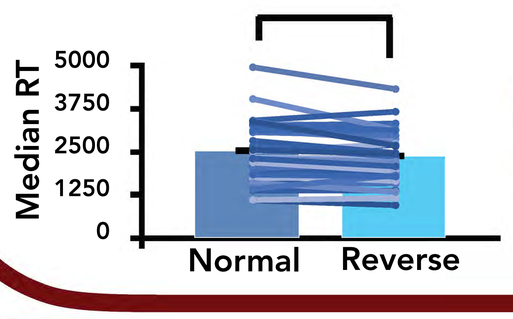
Search asymmetry for asynchronously burning fire

Low-level features

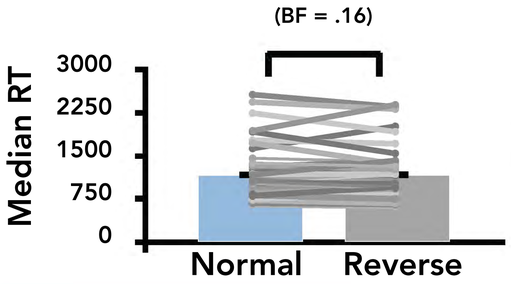


NO asymmetry for rotated fire!

Other natural stimuli



Moderate asymmetry for water



NO asymmetry for bubbles

Future directions

- **Temporal expectation**: greater microsaccadic suppression for expected events (normal fire) compared to reversed)?
- **Aesthetics**: Physiological indicators of arousal (e.g. pupillary responses)?

Conclusions

- Search asymmetries present for naturalistic burning fire
- Rotating fire eliminates asymmetry
- Largest effects observed for fire, relative to (tested) naturalistic stimuli
- Distinct perceptual representations of fire!