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Changes in heart rate to aesthetic chills predict emotional complexity

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Understanding how bodily signals contribute to the experience of complex emotions is central to models of embodied affective processing. Aesthetic chills -brief, intense physiological reactions often triggered by emotionally salient media- provide a unique window into peak affective states and their underlying bodily dynamics. While chills have been associated with both unipolar (positive or negative) and mixed emotional experiences, their physiological underpinnings remain underexplored. In this study, we use chills as a marker to investigate how heart rate (HR) relates to emotional intensity and complexity, and how interoceptive cues may shape the subjective experience of mixed affect.

Twenty-six healthy participants (17F, Mage = 28.1 ± 3.7) viewed nine emotionally evocative video clips (e.g., motivational speeches) over approximately one hour while HR was continuously recorded. Participants pressed a button whenever they experienced a chill, rating each in terms of emotional intensity and valence. We compared HR responses during chill-eliciting versus non-chill videos and examined whether mixed affective experiences were associated with distinct autonomic patterns.

Participants reported an average of 19 chills, with the majority rated as positively valenced. HR was significantly elevated during chill-inducing stimuli ($p < 0.001$), and notably higher during ambivalent (mixed valence) episodes compared to unipolar ones ($p = 0.027$).

Conclusions. These findings suggest that physiological responses, particularly heart rate, play a key role in shaping emotionally complex experiences. By linking autonomic arousal to mixed affective states, this study contributes to a broader understanding of how body and brain interact in generating rich and nuanced emotional experiences.

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