

Fire-walking inspires a heart-to-heart

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Fire-walkers' heart rates sync with those of onlooking family and friends during the ritualistic walk across the coals, a *PNAS* study finds.

Ivana Konvalinka and colleagues fitted participants and spectators with heart monitors at an annual fire-walking ceremony in San Pedro Manrique, Spain, to quantify the [social connectedness](#) that underlies community rituals.

Using a [mathematical technique](#), the researchers determined that changes in fire-walkers' heart rates throughout the ceremony were uniquely synchronized with those of their onlooking family members or close friends, in patterns that differed from non-related onlookers.

The technique distinguishes between the changes in [heart rhythms](#) and adrenaline surges that one might experience as a causal spectator from the changes experienced by onlookers who share an emotional bond with the barefoot participant.

The unique patterns, according to the authors, reflect subtle cardiac activity associated with the individuals' shared [emotional experience](#), and demonstrate that emotionally linked individuals can also be linked in physiological ways.

The investigation, the authors propose, demonstrates a new method for quantifying the physiology of shared experience that can occur during social rituals.

More information: "Synchronized arousal between performers and related spectators in a fire-walking ritual," by Ivana Konvalinka et al. *Proceedings of the National Academy of Sciences* (2011).

Provided by Proceedings of the National Academy of Sciences

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