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Using Thermography, Researchers Find Evidence Of The Pinocchio Effect

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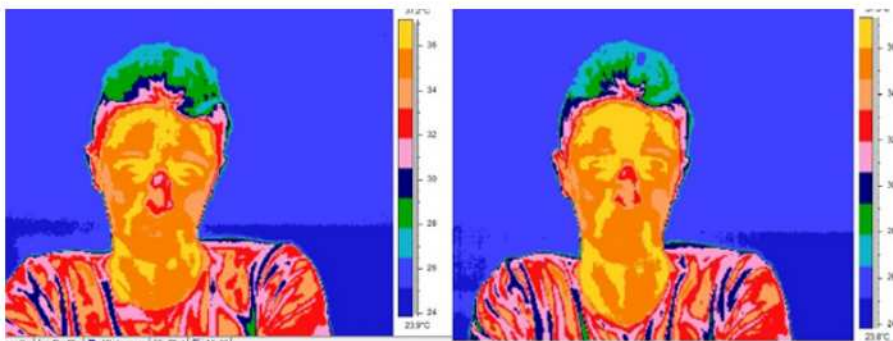


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April Flowers for redOrbit.com – Your Universe Online

A breakthrough new study from the [University of Granada](#) has confirmed that Geppetto was right when he told Pinocchio that lying affects your nose, he was just wrong about how. The new study reveals that when a person lies, they suffer a "Pinocchio effect" – an increase in the temperature around the nose and in the orbital muscle in the inner corner of the eye. They also found that when a person performs a considerable mental effort, facial temperature drops. Conversely, facial temperatures rise when the person has an anxiety attack.

Researchers from the University of Granada's Department of Experimental Psychology are pioneers in the application of **thermography** – a technique based on determining body temperature – to psychology. Thermography has applications in many fields such as general industry, building, and medicine. For example, thermographic cameras can be used to measure energy loss in buildings, indicating respiratory diseases in bovine animals or rabies in raccoons. Originally, thermography was developed by the U.S. to detect enemy combatants during WWII.



Researchers Emilio Gomez Milan and Elvira Salazar Lopez have obtained very innovative and interesting results. One of the interesting results is that sexual excitement and desire can be identified using thermography. Excitement and desire cause an increase in chest and genital temperature. Using this knowledge, the study shows that although women may say they are not excited, or only mildly excited – physiologically, men and women become excited at the same time.

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The team has discovered that when a mental effort, such as performing difficult tasks, being interrogated, or lying, is made, facial temperatures change. Lying raises the temperature around the nose and activates a brain element called insula. Insula is a component of the brain's reward system, which activates only when we experience real feelings, also known as qualias. The insula is involved in detecting and regulating body temperature, showing a strong negative correlation between insula activity and temperature increase. In other words, the more active the insula (the greater the feeling) the lower the temperature change, and vice versa.

The team also determined the thermal footprint of aerobic exercise and a variety of dance modalities such as ballet. They found that when a person is dancing flamenco, the temperature of the dancer's forearms increases while the temperature of their buttocks decreases. Professor Salazar explains that each dance modality has a specific thermal footprint such as this one for flamenco.

Temperature asymmetries in both sides of the body, along with local temperature changes, are associated with the physical, mental and emotional status of the subject according to the study.

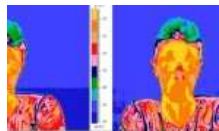
"The thermogram is a somatic marker of subjective or mental states and allows us to see what a person is feeling or thinking," Professor Salazar states.

Thermography is useful in evaluating emotions, the study claims, because the facial thermal pattern is different. It can also be used to identify emotional contagion.

"For example, when a highly empathic person sees another person having an electric discharge in their forearm, they become infected by their suffering and temperature in their forearm increases."

The body does not properly regulate temperature in certain neurological diseases such as multiple sclerosis. This can be detected by the thermogram. Other applications include determining body fat patterns – useful in weight loss and training programs – and assessing body temperatures in celiac and anorexia patients.

Source: April Flowers for redOrbit.com - Your Universe Online



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