

What factors influence children's learning of fear?

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Many fears develop during childhood. And the scientific literature is quite clear: learning to fear through observation is common especially in children who take their parents as models and learn to fear a stimulus

without being directly exposed to an aversive situation. For example, a child may be afraid of cats because he or she has seen his or her mother being bitten by a cat.

A new Université de Montréal study identifies the factors that promote observational fear learning in [children](#).

Published in the *Journal of Experimental Child Psychology*, the study was done by Alexe Bilodeau-Houle as part of her master's degree, under the direction of Marie-France Marin, an associate professor in UdeM's Department of Psychiatry and Addictology and researcher at the Centre de recherche de l'Institut universitaire en santé mentale de Montréal.

The results of the study reveal that attachment and physiological concordance play a role in observational fear learning. Specifically, children who have a less secure attachment [relationship](#) and high physiological concordance with their parent are more likely to experience fear in response to stimuli to which their parents themselves show fearful responses.

Physiological concordance refers to the synchrony of physiological signals—heartbeat, sweating, etc.—of two individuals in close interaction. This phenomenon is frequently observed in children and their parents as well as in romantic couples.

A fear-conditioning protocol

To obtain these results, the research team got 84 pairings of parents and children to play a game. First, the parents were filmed while being exposed to a fear-conditioning protocol, where the appearance of one color (blue) was associated with a very mild electric shock and another color (yellow) was not.

In a subsequent observational learning phase, the children watched the recording of this session and then were given the same test as their parents—naturally without the children receiving an electric shock when the color blue appeared. Sweating is an indication of fear, so electrodermal activity (i.e., sweating of the skin) was recorded in both parents and children, throughout the experiment.

The children then completed a questionnaire, making it possible to assess their attachment relationship with their parents. As a way of measuring the physiological concordance between parent and [child](#), the team compared the graphic curves seen in the parent's electrodermal activity during fear conditioning with those of the child during the observational learning phase.

"The more the parent and child showed synchronized physiological reactions, the greater the child's fear when it was his or her turn to take part in the experiment," said Bilodeau-Houle. "But this only occurred when the child's relationship with the observed parent was insecure; otherwise the physiological concordance did not seem to affect the child's learning of fear."

In this respect, Bilodeau-Houle adds that in parent-child dyads, physiological concordance is essential for the modulation of children's emotions. Concordance may vary depending on the attachment relationship and may be associated with different developmental outcomes in children depending on the family context.

For example, in a healthy family context, high parent-child physiological concordance is associated with better self-regulatory abilities in children, whereas this association is not necessarily to be found in dysfunctional families.

More likely to learn fear

"Our results suggest that a child who is highly synchronized with his or her parent in the context of an insecure attachment relationship with the parent may be more likely to learn fear by observing his or her parent," said Bilodeau-Houle.

The attachment relationship with parents can also influence fear in children," she added. "Attachment and threat detection systems are intimately linked. When children are faced with a threat, their attachment system is activated. This activation causes them to get closer to their caregiver, who serves as their protector and will then help them modulate their fear."

As a result, children who have an insecure relationship with their parents tend to have higher levels of physiological fear when they face threat-related stimuli.

Bilodeau-Houle's protocol has so far been tested on families with no pathology. But she and her team are also interested in observational fear learning with children whose parents have been victims of a traumatic event and may have developed anxiety or post-traumatic symptoms.

"Children who have a parent or [parents](#) living with one of these disorders are at greater risk of developing this type of pathology in turn," said Bilodeau-Houle. "But it remains to be seen whether observational fear learning can contribute to the development of fear-related psychopathologies in these children. A [longitudinal study](#) could provide insights into such psychopathologies. However, it should be borne in mind that fear-learning is an adaptive mechanism."

"Parent–child physiological concordance predicts stronger observational [fear](#) learning in children with a less secure relationship with their parent," by Alexe Bilodeau-Houle et al, was published in the February 2023 issue of the *Journal of Experimental Child Psychology*.

More information: Alexe Bilodeau-Houle et al, Parent–child physiological concordance predicts stronger observational fear learning in children with a less secure relationship with their parent, *Journal of Experimental Child Psychology* (2022). [DOI: 10.1016/j.jecp.2022.105553](https://doi.org/10.1016/j.jecp.2022.105553)

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