



# Psychological tool development and AI

Development of a parental attribution  
measure using speech samples

# About Us



From the school of psychology, offering parent management training to assist parents in the management of young children with challenging behaviours.

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# Research Context



High Warmth and Low Criticism

Typically Developing Children



Low Warmth and High Criticism

Children with severe conduct problems:  
Destructive, aggressive, non-compliant and  
treatment-resistant behaviours

# Research Context

My child doesn't mean to do the wrong thing.

My child has a good heart

My child deliberately does awful things.

My child takes pleasure in my distress.



High Warmth and Low Criticism  
Typically Developing Children

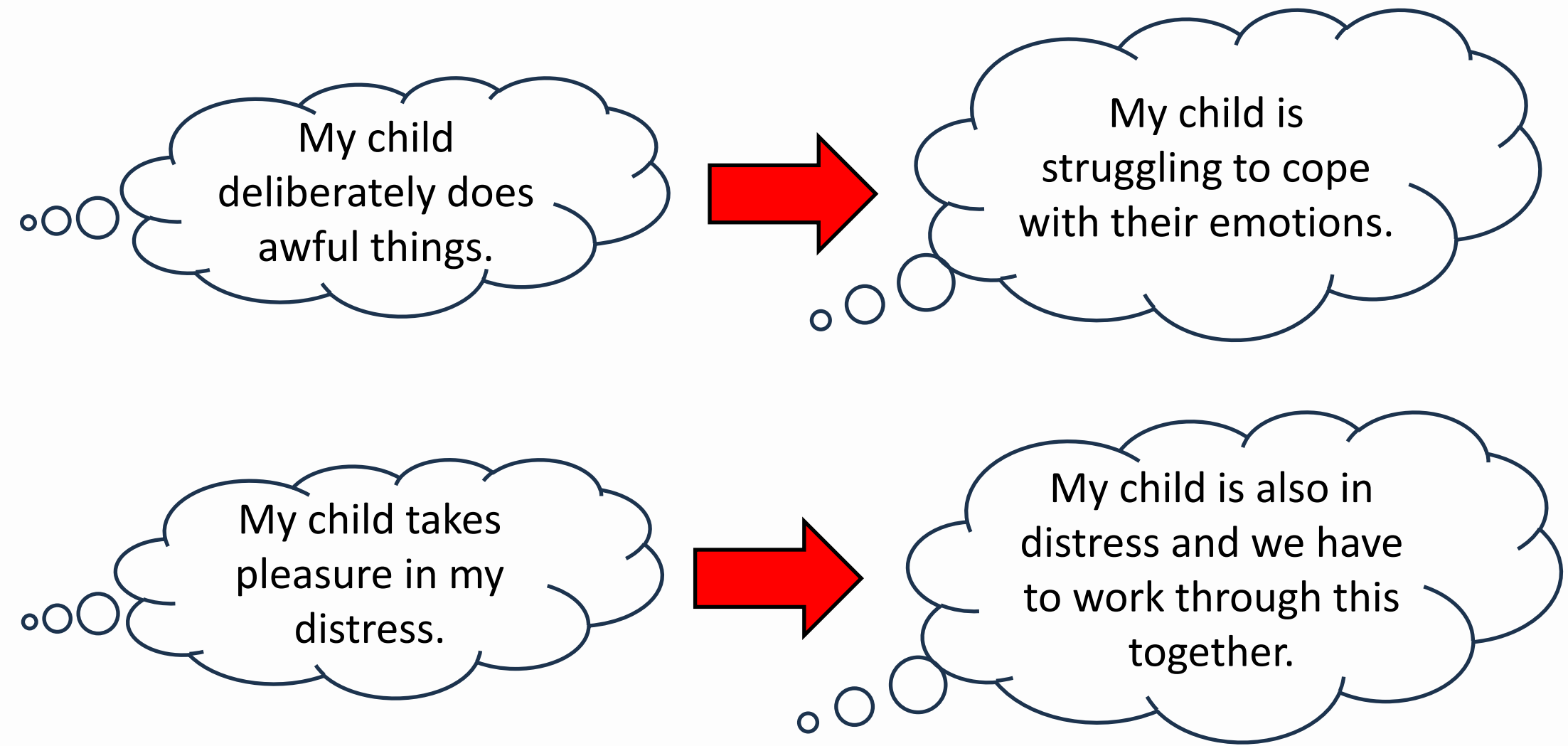


Low Warmth and High Criticism  
Children with severe conduct problems

# Research Context



Low Warmth and High Criticism  
Children with severe conduct problems



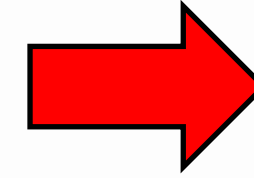
Shifting of cognitions  
Through audio coaching

# Research Context



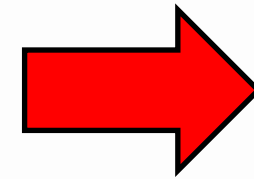
Low Warmth and High Criticism  
**Children with severe conduct problems**

My child deliberately does awful things.

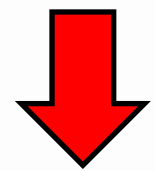


My child is struggling to cope with their emotions.

My child takes pleasure in my distress.



My child is also in distress and we have to work through this together.

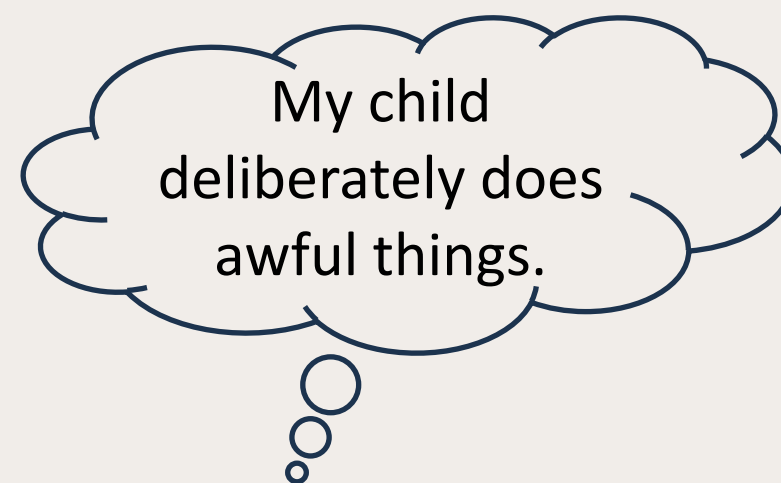


Better parenting behaviours towards their child



# Five-minute speech samples

'what kind of a person [child] is, and how the two of you get along together'.





# Involvement of AI

Joe is a very sweet kid, he is very likable and is the joy of our family when he was first born. We often take Joe out to various places like the amusement park and leisure center and he would bring us so much joy as well. In recent times, we have been experiencing some difficulties with managing Joe's behaviour at home and in school. Sometimes, Joe would get into this rage where it feels like he cannot be stopped. Whenever he gets into this state of rage, it places great stress on me and my partner as we just want to see Joe grow up healthily without causing trouble to others or to the family. Sometimes, it feels like Joe does these awful things on purpose like he knows how to exactly push our buttons. But because we really love Joe, we have tried many things to help him with his behaviour as it has been a constant problem for us in our family and our relationship with him. Deep down, we believe that Joe is still a good kid and we want to have a good relationship with him as well.

# Involvement of AI

Joe is a very sweet kid, he is very likable and is the joy of our family when he was first born. We often take Joe out to various places like the amusement park and leisure center and he would bring us so much joy as well. In recent times, we have been experiencing some difficulties with managing Joe's behaviour at home and in school. Sometimes, Joe would get into this rage **where it feels like he cannot be stopped**. Whenever he gets into this state of rage, it places great stress on me and my partner as we just want to see Joe grow up healthily **without causing trouble to others or to the family**. Sometimes, it feels like **Joe does these awful things on purpose like he knows how to exactly push our buttons**. But because we really love Joe, we have tried many things to help him with his behaviour as it has been a **constant problem** for us in our family and our relationship with him. Deep down, we believe that **Joe is still a good kid** and we want to have a good relationship with him as well.



**Dispositional Attribution:**  
Internal trait

# Involvement of AI

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My child does things to create trouble for people

**Intentionality attribution**

My child deliberately does awful things.

My child has a good heart

**Dispositional Attribution:**  
Internal trait

# Involvement of AI

Joe is a very sweet kid, he is very likable and is the joy of our family when he was first born. We often take Joe out to various places like the amusement park and leisure center and he would bring us so much joy as well. In recent times, we have been experiencing some difficulties with managing Joe's behaviour at home and in school. Sometimes, Joe would get into this rage **where it feels like he cannot be stopped**. Whenever he gets into this state of rage, it places great stress on me and my partner as we just want to see Joe grow up healthily **without causing trouble to others or to the family**. Sometimes, it feels like **Joe does these awful things on purpose like he knows how to exactly push our buttons**. But because we really love Joe, we have tried many things to help him with his behaviour as it has been a **constant problem** for us in our family and our relationship with him. Deep down, we believe that **Joe is still a good kid** and we want to have a good relationship with him as well.

My child does things to create trouble for people

**Intentionality attribution**

My child deliberately does awful things.

My child has a good heart

**Dispositional Attribution:**  
Internal trait

My child's behaviour will always be a problem

**Permanence Attribution:**  
Time-based

# Involvement of AI

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My child does things to create trouble for people

**Intentionality attribution**

My child deliberately does awful things.

My child has a good heart

**Dispositional Attribution:**  
Internal trait

My child's behaviour is uncontrollable

**Controllability Attribution:**  
Agency

My child's behaviour will always be a problem

**Permanence Attribution:**  
Time-based

## Using AI to detect attributions

One study by Chen et al. (2023) tested the diagnostic accuracy of GPT-4 and ChatGPT when specific diagnostic prompts were provided for the AI to identify thinking errors in written transcripts.

Found that GPT-4 was more accurate than ChatGPT, consistent accuracy when examining agreement rates with human evaluators



Findings of the Association for  
Computational Linguistics: EMNLP 2023,  
pages 4295–4304  
December 6-10, 2023. Association for  
Computational Linguistics

# Concluding Remarks



The way parents think and act towards their child can influence the success of managing challenging behaviours in children.

We want to create a psychological tool that contain these parental attributions (cognitions) towards their child based on speech samples.

We want to include the use of AI to automate this process of detecting attributions, and then compare it with human evaluation of these attributions.

**We are looking for any feedback or expertise in the field of AI and are open to collaboration!**



# THANK YOU! CONTACT US

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