



# The Development of The Distinction Between Regret, Disappointment, and Sadness

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## Abstract

A total of 48 4- and 6-year-olds were asked about a protagonist's feelings and behavior after being told about the protagonist's actions which resulting in what adults experience as sadness, disappointment, and regret. Results were that only 6-year-olds could distinguish between the three situations in the way adults do.

## Introduction

Children as young as 4 years have been shown to understand regret on tasks in which young children rate themselves as sad in response to actions leading to a negative outcome and then rate themselves as sadder after discovering that another action which could have been taken would have led to a more positive outcome (Burns, Riggs, & Beck, 2012; Weisberg & Beck, 2012). Although children may attribute sadness to themselves (or to others) about an action taken, regret is the additional negative feeling upon discovering that another action, which the person could have been taken but was not, would have avoided the negative outcome and produce a better one. For this reason, regret is thought as a counterfactual emotion which requires thinking about possible worlds (Amsel & Smalley, 2000; Guttentag, & Ferrell, 2004).

However, the task may not fully reveal children's understanding of regret relative to other emotions that are also triggered by negative outcomes, including sadness and disappointment. What distinguish the three emotions are the forms of mental activities of (or attributed to) the person experiencing the emotion (Zeelenberg et al., 1998; Roseman et al., 1994). For regret, the attribution or experience of regret requires that the person experiencing the emotion engages in a *counterfactual analysis* of how a different action would have produced a more positive outcome. In contrast, disappoint involves attributing or experiencing a dashed or unrealized *expectation* that the outcome would be more positive than it was. Sadness requires an *assessment* of an outcome as negative, as the emotion is a reaction to the valence of the outcome itself, without any additional expectation or analysis. As such, sadness would less intensely experienced than disappointment which would be less intensely experienced than regret.

The present study tests for when children distinguish the difference between situations which for adults elicit the three emotions. It was predicted that 4-year-olds, who lack insight into the nature of mental activities may be less able to distinguish the three scenarios as leading to different and more intense emotions.

## Methods

### Participants

Participants were 24 4- ( $M = 4.29$  years,  $sd = .46$ , range 4 to 5.;6 year olds) and 24 6-year-olds ( $M = 5.63$  years,  $sd = .49$  years, range 5;6 – 6 year olds) with 12 males and 12 females in each group. The sample was taken from a local area daycare centers and the parents or guardians of each participant a signed consent form.

### Materials & Procedure

Participants heard three stories about a same-sex protagonist which were conveyed by narrative with supporting pictures. In the stories, the protagonist had an opportunity to win stickers by choosing the one of two closed boxes, only one of which contained the stickers. The protagonist in each story was depicted as choosing the box containing no stickers and then participants answered three control questions (about the box chosen, the box the stickers were in, and whether or not the stickers were won). Then participants completed four test ratings, using a 5-point (0 – 4) scale to rate the extent to which the protagonist was feeling sad and mad, as well as frowning and crying about choosing the wrong box.

In the **Sad** story, the protagonist stated that she guessed which box contained the stickers before choosing the wrong one. In the **Disappointment** story, she reported being certain that the stickers were in the wrong box before choosing it. In the **Regret** story, she expressed certainty that the stickers were in the correct box, but as she reached for it she changed her mind and chose the wrong box. Story order was counterbalanced over subjects in each age.

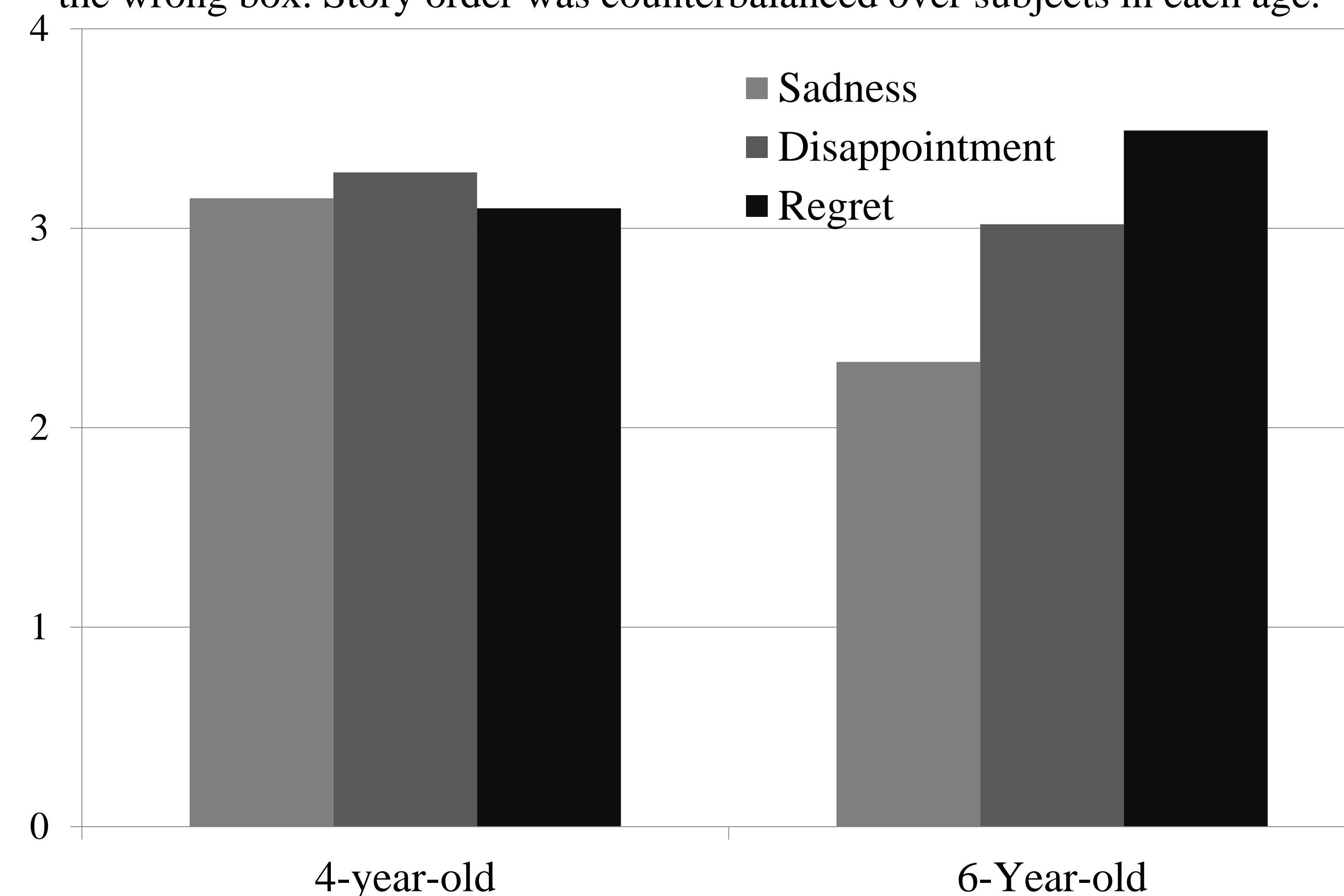


Figure 1: Age by Emotion Story interaction effect in averaged ratings of feeling sad and mad and expressing a frown and tears (from not at all to extremely)

## Results

All control questions (N=432) were correctly answered. The test ratings were subjected to a 2 (Age) by 3 (Emotion Story: Regret, Disappointment, Sad) by 4 (Rating: Sad, Mad, Frown, Cry) repeated measures ANOVA, with repeated measures on Emotion Story and Rating. There was an Age by Emotion Story interaction effect,  $F(2, 92) = 17.33$   $p < .001$  (see Fig 1). Follow-up tests revealed no story effect among 4-year-olds but a significantly different response to each story among 6-year-olds.

## Discussion

The findings suggest that 4-year-olds may not fully understand adult distinctions between emotional reactions to negative outcomes. This may be due to a lack of appreciation of the subtle differences between cognitive processes which underlie the emotions. Between 4- and 6-years of age, children acquire skills in reading and understanding the importance of mental states underlying their own or others' behavior and emotions (Pillow, 2012; Wellman, 2011). In addition, young children may have a particular difficulty in creating counterfactual worlds which may be beyond their cognitive capabilities (Amsel, 2011; Amsel & Moshman, in press; Rafetseder et al., 2013) but central in the experience of regret as distinct from disappointment or sadness. The findings suggest that claims regarding the young children's precocious use of counterfactual reasoning on tasks assessing regret may be suspect.

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