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Brief Report

Children's thinking about their own and others' regret and relief

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ABSTRACT

In two experiments using a decision-making game, we investigated children's thinking about regret and relief. In Experiment 1 ($N = 43$, 31 children [5 years 4 months to 8 years 2 months of age] and 12 adults), participants chose between two boxes containing different numbers of stickers. They rated their happiness before learning that the other box contained more (regret) or fewer (relief) stickers. They rerated their chosen box with the counterfactual knowledge. The experience of regret was evident at 5 years of age, and the experience of relief was evident at 7 years of age. In Experiment 2 ($N = 69$, 53 children [5 years 3 months to 6 years 11 months of age] and 16 adults), participants either played the game (self condition) or watched another play the game (other condition). Children in the self condition confirmed the results from Experiment 1. We found no evidence that children up to 7 years of age were able to predict others' regret and relief, a finding that suggests differing developmental trajectories between experiencing and understanding others' regret and relief.

Introduction

Thinking about what could have been, counterfactual thinking, allows us to speculate about the past and learn for the future (Roese, 1997). Counterfactual emotions, such as regret and relief, result from these thoughts (Kahneman & Miller, 1986; Roese & Olson, 1995). Counterfactual emotions involve reacting to the current state of affairs, just as basic emotions do (Ekman, Friesen, & Ellsworth, 1972), and comparing reality with an alternative world (Landman, 1993; Niedenthal, Tangney,

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& Gavanski, 1994). Being stuck in traffic may lead to anger (a response to reality). Realizing that the traffic would have been avoided if one had left 10 minutes earlier would lead to regret (comparing reality with what could have been).

The example above describes an *experience* of regret—the comparison of reality with a better counterfactual world. Experience of an emotion can be differentiated from *understanding* why someone experiences the same emotion. To understand regret, one must reflect on the reasoning behind the emotion (e.g., "He feels particularly bad because he knows that if he had left the house 10 minutes earlier, he would have avoided this traffic"). In this study, we investigated both aspects of children's counterfactual emotions: their experience and understanding.

Little research has been published on the development of regret and relief. Guttentag and Ferrell (2004) read 5-, 7-, and 9-year-olds stories involving typical or atypical behavior and acts of commission (choosing to do something) or omission (choosing not to do something). In one typicality story, two boys ride their bikes to school every morning around the pond. One boy, David, took an atypical route, hit a tree root, fell, and hurt himself. The other boy, Bob, took his typical route, hit the root, fell, and hurt himself. In a commission story, two girls each chose one of two boxes to open. One girl, Karen, changed her mind and swapped to the other option. The other girl, Michelle, did not change her mind when given the opportunity. Both girls won the lesser prize. In both stories, the question posed was "Who would be more upset?" In line with the adult literature, atypical actions and acts of commission that result in a negative outcome prompt more regret than typical actions or acts of omission (e.g., Gleicher et al., 1990; Kahneman & Miller, 1986; Kahneman & Tversky, 1982; Landman, 1987). In line with this, 7-year-olds, but not 5-year-olds, claimed that David and Karen would be more upset. Guttentag and Ferrell (2004) argued that 5-year-olds were unable to understand how what could have been might affect the emotional responses to the actual outcome (see also Beck & Crilly, 2009; Ferrell, Guttentag, & Gredlein, 2009; Guttentag & Ferrell, 2008).

In another study, Amsel and Smalley (2000) also found poor performance by 3- to 5-year-olds. Children watched as a doll chose between two boxes. The chosen box contained a more or less desirable prize than the unchosen box. Young children were able to judge how the doll would have felt if the other box had been chosen; that is, they could generate the counterfactual world, as we would expect based on the reasoning literature (see, e.g., Beck, Robinson, Carroll, & Apperly, 2006; Harris, German, & Mills, 1996; Riggs, Peterson, Robinson, & Mitchell, 1998). Yet this judgment did not influence their evaluations of the actual prize.

Amsel and Smalley (2000) included situations that should have led to relief in their study with preschoolers. There is little work on relief with older children. An exception is Guttentag and Ferrell (2004), who used stories with a similar structure to their regret stories, but the unrealized alternative was more negative than reality. In their study, 7-year-olds did not demonstrate an understanding of when others feel relief. Unfortunately, because older children were not tested, there is no positive evidence regarding when children understand relief.

In the tasks described above, participants' thinking about regret and relief was investigated through their understanding of these emotions in others. It is likely that the story tasks used make high working memory demands. Furthermore, it might be easier for children to experience regret or relief themselves rather than to infer it in others. Amsel and Smalley (2000) used a task where 3- to 5-year-olds might experience counterfactual emotions themselves. Children saw two face-down numbered cards (0–5), and the experimenter had one face-up card. Participants chose one of their cards to turn over, and the player with the higher card won. Trials of interest were those in which the participants' chosen card and the experimenter's card were equal, yet the participants' unchosen card was higher or lower than the experimenter's card; that is, choosing the other card would have meant that the children won or lost the hand. If children experienced counterfactual emotions, then they should have judged themselves as happier when the unchosen card turned out to be lower than the experimenter's card and as less happy when the unchosen card turned out to be higher. This is what adults did. However, when preschoolers evaluated their feelings, the unchosen card had no bearing on their rating. Thus, the question remains: When do children experience counterfactual emotions?

In Experiment 1, we sought evidence for children's experience of regret and relief using a game based on Amsel and Smalley (2000). In Experiment 2, we used the same task and asked children to