



## Parental ability attributions regarding children's academic performance: Person-oriented approach on longitudinal data



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### ABSTRACT

The aim of this study was to identify subgroups of mothers and fathers who differ according to the patterns of causal attribution to ability for their children's academic success and failure across early school years. Moreover, the extent to which the mother and father of the same child share the same attribution pattern, and how the attribution patterns are associated with the parents' level of education, children's sex and children's academic performance was investigated. A total of 1721 mothers and 1198 fathers filled out a questionnaire concerning their child-related ability attributions when the children were in Grades 1–3. Five different attribution patterns were identified with latent profile analysis. The patterns were similar among the mothers and fathers, and the parents of the same child typically were represented by the same pattern. The attribution patterns were associated with the children's level of performance and, among mothers, parental level of education.

Ability is one of the most common causes that parents report for their children's success (Cashmore & Goodnow, 1986; Dunton, McDevitt, & Hess, 1988; Enlund, Aunola, & Nurmi, 2015; Natale et al., 2008; Weiner, 1992). Although studies suggest that parents differ in the amount they use ability as an explanation for their children's academic outcomes and in the changes in their use of ability attribution over time (Enlund, Aunola, Tolvanen, & Nurmi, 2015; Natale et al., 2008), the majority of the studies have been variable-oriented and, thus, treated the parents as one homogeneous group. As this type of approach assumes that the associations between attribution variables across time are similar for all parents, the possibility that different individuals may show different patterns of attributions has not been taken into account. In this study, we applied a person-oriented approach (Bergman & Magnusson, 1991; Bergman, Magnusson, & El-Khoury, 2003) to examine whether it is possible to statistically identify homogeneous subgroups of parents that differ according to the pattern of ability attributions they show for their children's academic success and failure across early primary school years. We also studied whether the parents of a particular child demonstrate the same patterns of ability attributions and how parents' level of education and children's level of academic performance are related to different patterns.

### 1.1. Parents' ability attributions for their children's success and failure

Parental beliefs and representations concerning their children's abilities form important developmental context for children (Miller, 1995; Murphey, 1992). In general, children are prone to adopt beliefs about themselves, as well as concomitant behaviors, which are consistent with their parents' beliefs (Murphey, 1992). Parental beliefs concerning children's academic abilities have, for example, been shown to predict children's self-perceptions of ability even more than children's school grades (Frome & Eccles, 1998).

According to *entity theory of intelligence* and *incremental theory of intelligence* parents can be divided into two groups based on how they understand ability (Dweck, 2000; Furnham, 2014): (a) parents who see ability as a fixed trait that one either has or has not (entity theory) and (b) parents who think that ability can be increased with effort and practice (incremental theory). Research based on these theories has focused on how parents' views of ability either as fixed or malleable can foster the child developing the entity or incremental theory of intelligence (Dweck, 2000; Haimovitz & Dweck, 2016). For parents, dispositional (biological based talent or giftedness) and effort-based explanations of intelligence have been shown to be the predominant modes, although there are also parents demonstrating a combined pattern (Räty & Kärkkäinen, 2011).

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Whereas incremental theory defines ability as a controllable skill that can be developed through persistent effort (Haimovitz & Dweck, 2016; see also Rätty & Kärkkäinen, 2011), *attribution* theory is more in line with the entity theory defining ability as an internal, stable, and uncontrollable factor that can be related to academic success (i.e., one has ability) and failure (i.e., one lacks ability; Weiner, 1986, 1992). In addition to attributions people make for their own actions, attribution theory encompasses how other people, for example, parents, attribute the causes of their children's actions and the outcomes. Research on parental attributions has shown that mothers and fathers attribute their children's academic success most typically to ability (Cashmore & Goodnow, 1986; Enlund, Aunola, & Nurmi, 2015). Mothers have also been found to emphasize more the role of their children's ability than fathers (Jacobs, 1991; Rytönen, Aunola, & Nurmi, 2005). Attributing success to ability has been found to be typical especially among Western parents, whereas their Asian counterparts give more weight to effort (Phillipson, 2006; Stevenson & Stigler, 1992). Parental ability attributions for success have been shown to have beneficial outcomes. For example, children whose performance was attributed to high ability improved their performance more than children told that they had worked hard (Miller, Brickman, & Bolen, 1975; Natale, Aunola, & Nurmi, 2009).

Although it seems that attributing success to ability is beneficial for the children, attributing failure to lack of ability is associated with negative long-term motivational and achievement outcomes (Kiefer & Shih, 2006; Weiner, 1992). While one study found that parents have very similar ways of attributing their children's success and failure (Leung & Shek, 2015), other studies have shown that parents typically attribute failure to lack of effort or to situational factors instead of lack of ability (for a review, see Miller, 1995; see also Enlund, Aunola, & Nurmi, 2015; Natale et al., 2008). Overall, lack of ability does not seem to be an easy attribution for parents to make (Miller, 1995). However, cultural differences have been found. Compared to Asian societies, parents in Western societies tend to emphasize lack of ability more when they explain low achievement compared to parents from Asian societies (Holloway, Kashiwagi, Hess, & Azuma, 1986).

Some studies have reported evidence that parents use *child-serving causal attributions* when success is typically attributed to a children's own characteristics, such as ability, whereas failure is attributed to properties that are more controllable or external causes (i.e., effort, other people) instead of to lack of ability (Enlund, Aunola, & Nurmi, 2015; Kärkkäinen, Rätty, & Kasanen, 2011; Miller, 1995; Rätty, Kasanen, & Honkalampi, 2006; Weiner, 1992; Yee & Eccles, 1988). In turn, *actor-observer bias* states that actors are more likely to emphasize situational or external factors as the cause of their performances while observers tend to view the actor's performance as resulting from dispositional or internal causes (Jones & Nisbett, 1971). This bias would lead the parents to attribute their children's success and failure to ability.

## 1.2. Stability and change in parental ability attributions

Longitudinal studies have shown that parents form their attributional beliefs early in their children's school career and that those beliefs continue to guide the parents' thinking later on (for a review, see Miller, 1995). Since the review by Miller (1995), some studies have examined the naturally occurring changes in parental ability attributions for children's academic success and failure situations over time. Rytönen et al. (2005) found that parents increasingly attributed their children's success to ability during the child's transition from preschool to primary school, whereas the mean level of their ability attributions for failure did not change during this period. The mean level of ability attributions have further been shown to stay stable (i.e., at the same level) during the children's first school year (Natale et al., 2008), during the transition from kindergarten to Grade 2 (Natale et al., 2009), and even during 9-year comprehensive school career (Enlund,

Aunola, & Nurmi, 2015).

Despite the stable mean level of parental ability attributions during comprehensive school there are, however, individual differences in these attributions (Enlund, Aunola, Tolvanen, & Nurmi, 2015). In the study by Enlund, Aunola and Nurmi (2015) individual differences in the level of parental ability attributions concerning their children's academic outcomes showed moderate stability over children's 9-year comprehensive school career. Furthermore, Natale et al. (2008) found significant individual differences not only in the level but also in the developmental trend of mothers' ability attribution for success. For failure, there were individual differences in the level but not in the developmental trend (Natale et al., 2008).

Overall, these studies suggest that parents differ in the amount they use ability as an explanation of their children's academic outcomes and for the changes that are evident in the use of ability attribution over time. These kinds of individual differences have traditionally been approached using variable-oriented research that focuses on analyzing relations between variables in a particular sample. The limitation of this variable-oriented approach is, however, that it assumes that the associations between attribution variables across time are similar or the same for all parents and, thus, the possibility that different individuals may show different patterns of attributions—and even different pattern of development—has not been taken into account (Bergman & Magnusson, 1991; Bergman et al., 2003). As suggested by the entity and incremental theories (Dweck, 2000), it might be assumed that there are different groups of parents who show different longitudinal patterns of ability attributions. For example, whereas the entity theory would lead parents to rate ability constantly as an equally significant cause of their child's performance regardless of the children's age or level of performance, parents who see ability as a malleable trait, and thus represent the incremental theory of intelligence, might be assumed to attribute their children's success increasingly and failure decreasingly to ability as the child proceeds through school and gets more practice. However, parents with incremental theory may also see other causal attributions, such as effort, to be more central than ability and thus rarely attribute the children's performance to ability.

Consequently, the first aim of the present study was to identify subgroups of parents whose patterns of ability attributions for their children's academic success and failure across the first three years of primary school are similar within the groups but differ between the subgroups (i.e., *longitudinal patterns*). The focus was on children's early years of primary school because during this period parents start to receive increasing feedback on their children's academic progress, which may impact on their views of their children's abilities. Previous studies have shown that parents tend to form their attributional beliefs early in their children's school career and these beliefs then continue to guide the parents' thinking later on (for a review, see Miller, 1995). Moreover, early school years can be seen important period to study the formation of parental attributions because parental views of their children's abilities play a crucial role in the development of children's self-perceptions (Haimovitz & Dweck, 2016; Murphey, 1992). During early school years children become increasingly responsive to performance feedback (Dweck, 2002) and their self-concepts start to stabilize (Aunola, Leskinen, Onatsu-Arivilommi, & Nurmi, 2002). Parental perceptions of their children's competencies during this period have been shown to predict not only the development of self-efficacy beliefs but also related task-focused vs. task-avoidant behaviors in learning situations among children (Aunola, Nurmi, Niemi, Lerkanen, & Rasku-Puttonen, 2002). In the present study, both mothers and fathers were included and, thus, the second aim was to examine the extent to which the mother and father of a particular child share the same longitudinal pattern of ability attributions.

## 1.3. Antecedents of parents' ability attributions

Parental ability attributions have been shown to be related to both

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