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# Is there a common pathway to maladjustment for internationally adopted and non-adopted adolescents?

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ABSTRACT

The main purpose of the research was to test whether cumulative effects represent a common pathway to behavioral maladjustment for internationally adopted adolescents and controls. The findings of previous comparison and follow-up studies have been contradictory. The hypothesis was tested in an original multi-informant study with 74 adolescents: 40 adoptees and 34 controls. The analyses of the data provided arguments in favor of the existence of a common pathway for adoptees and controls. The accumulation of risk factors in the current characteristics of the adolescents and their family was significantly associated with behavioral outcomes of both adoptees and controls. Implications for research, policy and practice are discussed.



The literature on adoption is vast and rich. One of the major lines of research is comparison studies in which adopted participants are compared with control participants. In this set of studies, the fact of being adopted is considered as a risk factor per se that can lead to significant developmental differences in favor of the control participants. Another major line of research is follow-up studies analyzing the influence of deprivation severity (e.g., age of adoption, pre-adoption abuse or neglect) and other key-risk factors (e.g., age of the biological mother, low birth weight, drug exposure) on behavioral outcomes in adoptees. Because adoption research has been more concerned with outcomes than processes (Palacios, Román, Moreno, & León, 2009), we found in these two sets of studies contradictory arguments with regard to the main question of the current research, i.e. is there a common pathway to behavioral maladjustment for internationally adopted and non-adopted adolescents? In particular, do cumulative effects constitute a common pathway for this issue? The cumulative effect hypothesis is tested here as a well-known pathway in developmental psychopathology (Cicchetti & Rogosch, 1996), by considering current adolescent and family factors, i.e. IQ, attachment and parenting, and their cumulative effect on behavioral maladjustment. After a presentation of the cumulative effect hypothesis, arguments in favor of a negative answer to the main question will be presented first before others supporting a positive answer are outlined. These arguments will lead to two opposite sets of hypotheses that will be tested in an original multi-informant study with 74 adolescents, 40 adoptees and 34 controls. The implications for clinical and the social policy of each set of hypotheses will be proposed and discussed.

## *The cumulative effect hypothesis*

Whereas the vast majority of empirical studies of adolescents' behavioral maladjustment have considered adolescent or family risk factors in isolation, multiple risk studies address the importance of considering several frameworks in combination. One of the most interesting hypotheses coming from the multiple risk studies is that of the cumulative effect. It posits that the accumulation of risk factors, even regardless of their content, can be considered as a pathway to maladjustment, and that its influence is greater than that of any factor in isolation (Cicchetti & Rogosch, 1996). Hence, a single risk factor may not be enough to derail behavioral adjustment, but the accumulation of multiple risks will be deleterious (Greenberg, Speltz, DeKlyen, & Jones, 2001). Multiple risk studies have traditionally focused on the association between a general outcome such as academic achievement, adaptive or maladaptive functioning or behavioral issues on the one hand, and on the other hand several specific risks across several ecological levels, i.e. the participant's personal characteristics, family, school, peer and neighborhood factors. Such a pathway of accumulation of multiple risks has been tested in several studies with community-sample or referred subjects, demonstrating a significant linear relation between the cumulative risk index, computed by summing the number of dichotomized risk factors such as high vs. low IQ, secure vs. insecure attachment, or good vs. poor parenting for example, and children's or adolescents' externalizing or internalizing behavior (Appleyard, Egeland, van Dulmen, & Sroufe, 2005; Atzaba-Poria, Pike, & Deater-Deckard, 2004; Gerard & Buehler, 2004; Greenberg et al., 2001; Lanza, Rhodes, Nix, & Greenberg, 2010; Lucio, Rapp-Paglicci, & Rowe, 2011; Roskam, Meunier, Stievenart, & Noël, 2013; Trentacosta et al., 2008). Some of these studies were cross-sectional like the present one, and therefore unable to address the core question of the directionality of the effects (e.g., Atzaba-Poria

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et al., 2004; Greenberg et al., 2001). Rather they contributed to documenting the association between multiple specific risks which are combined together and general issues. Others were based on a longitudinal design in which the accumulation of risks preceded the general outcome (e.g., Gerard & Buehler, 2004; Lanza et al., 2010; Roskam, Meunier et al., 2013; Roskam, Stievenart et al., 2014). The cumulative risk hypothesis has also been tested in follow-up studies of adoptees by considering the history of maltreatment and deprivation for the computation of the risk index (Kriebel & Wentzel, 2011); to the best of our knowledge, however, it has never been tested by considering the current characteristics of the adoptee and his/her post-adoption environment.

*Adopted adolescents follow a different pathway to behavioral maladjustment than controls*

The adoptive status is assumed to harm later development (van der Vegt et al., 2009). Comparison studies rely on such an assumption and consider the adoptive status as a risk factor per se. Significant differences were therefore expected in studies in which behavioral issues of adoptees were compared with those of controls. The results from previous comparative studies conducted in community samples mainly led to the conclusion that significant differences were found between adoptees and control participants with regard to behavioral adjustment (Dalen & Rygvold, 2006; Dhavale, Bhagat, & Thakkar, 2005; Hawk & McCall, 2010). A meta-analysis of 98 adoptee-control studies concluded that adoptees displayed higher average levels of both externalizing and internalizing behavior than controls (Juffer & van IJzendoorn, 2005). Also, compared with their non-adopted siblings, adoptees' behavioral adjustment was worse in late adolescence (Weinberg, Waldman, van Dulmen, & Scarr, 2004). Adoptees have also been shown to be overrepresented in the mental health population (Hjern, Lindblad, & Vinnerljung, 2002; Weiss, 1985). In sum, the results from many comparative studies have led to the conclusion that adoptees tend to be less well-adjusted than controls. The results of several follow-up studies have supported this conclusion by demonstrating the influence of pre-adoption social and emotional adversity on behavioral adjustment (Gagnon-Oosterwaal et al., 2012a,b; Merz & McCall, 2010; Simmel, Brooks, Barth, & Hinshaw, 2001; Xing Tan & Marfo, 2006).

Another argument in favor of a negative answer to our main question is that several symptoms, especially inattention and overactivity, have recently been thought to form a specific institutional deprivation syndrome. ADHD has been considered by several authors as a characteristic outcome of early deprivation (Kreppner et al., 2001; Roskam et al., 2014; Rutter et al., 2007b; Sonuga-Barke & Rubia, 2008). If the hypothesis of specific psychological issues for adoptees is confirmed, that of a common pathway to behavioral maladjustment for adoptees and controls will be invalidated.

In line with these arguments, it may be considered that the behavioral issues of adoptees are especially explained by their status which could also lead to a higher risk of low IQ (Behen, Helder, Rothermel, Solomon, & Chugani, 2008; Miller, Chan, Tirella, & Perrin, 2009), insecure attachment (Palacios et al., 2009; Rutter et al., 2007b; van den Dries, Juffer, van Ijzendoorn, & Bakermans-Kranenburg, 2009), and poor parenting and stress in the adopting family (Gagnon-Oosterwaal et al., 2012b; Judge, 2003; Palacios et al., 2009; Rijk, Hoksbergen, ter Laak, van Dijkum, & Robbroeckx, 2006; Sánchez-Sandoval & Palacios, 2012), leading to a higher cumulative score on average in adoptees than controls. In other words, by contrast with the cumulative effect hypothesis, adoptive status as a risk factor in isolation is held to be sufficient to derail adoptees' behavior. Adoptees therefore constitute a specific group of adolescents. The pathway leading them to maladjustment, it is argued, should depend to a large degree on their pre-adoption history (Kriebel & Wentzel, 2011), greater genetic vulnerability (Kendler et al., 2012; Siira, Wahlberg, Miettunen, Tienari, & Làksy, 2006), institutional deprivation (Sonuga-Barke & Rubia, 2008) or even their inner psychological struggle as they begin to comprehend their adoptive status (Brodzinsky, 2011; Brodzinsky, Singer, & Braff, 1984; Palacios & Brodzinsky, 2010). They therefore have special needs in comparison with control adolescents, and specific prevention and treatment measures should be proposed to address their behavioral issues. The hypotheses following from these arguments are as follows. First, significant differences are expected between adoptees and controls, with higher behavioral maladaptation and a higher cumulative risk factor score for adoptees than controls. Second, with regard to the prediction of behavioral maladjustment, there will be no main cumulative effect of risk factors resulting from IQ, attachment and parenting. Rather, a significant interaction between group affiliation (adoptees vs. controls) and cumulative effect will be found, meaning that cumulative effect operates in different ways in the two subsamples.

*There is a common pathway to behavioral maladjustment for adopted and non-adopted adolescents*

A first argument for a positive answer to our main question is that existing findings have pointed to significant differences in behavioral adaptation between adoptees and controls, with the results unexpectedly in favor of adoptees (Christoffersen, 2012; Tan & Marfo, 2006). Also, in comparison studies in which significant differences to the disadvantage of adoptees were found in behavioral adaptation, the effect sizes were low (Bimmel, Juffer, van Ijzendoorn, & Bakermans-Kranenburg, 2003; Juffer & van IJzendoorn, 2005), suggesting first that variations in behavioral adjustment stay in the normal range (Dalen & Rygvold, 2006), and second that although adoptees display more behavior problems than their non-adopted counterparts, this concerns a minority of adoptees. The large majority function well, and much better than might be expected based on their background of deprivation (Juffer & van IJzendoorn, 2005). It is therefore assumed that the effects of adoptive status can be modified by a favorable post-adoption environment (Goldman & Ryan, 2011; Kriebel & Wentzel, 2011; Lindblad, Weitoft, & Hjern, 2010; Whitten & Weaver, 2010). It can also be assumed that differences between adoptees and controls are attributable to inter-individual differences rather than to group differences, because of the heterogeneity of the internationally adopted population (Lindblad et al., 2010; Weinberg et al., 2004). Furthermore, the overrepresentation of adoptees in the mental health population can be explained to some extent first by the greater attention that adopting parents give to the symptoms of their adopted child, whom they consider to be at greater risk than biological offspring, and second by the fact that adopting parents tend to be better educated with higher household incomes than biological parents (Weinberg et al., 2004).

A second argument is that follow-up studies of adoptees most often focus on the influence of pre-adoption key risk factors rather than on the influence of the characteristics of the adoptee and his/her post-adoption environment on behavioral adjustment (Goldman & Ryan, 2011). Therefore, we cannot rule out the possibility that the influence of the adolescent's current characteristics and the protective environment provided by the adoptive family is so important that over and above their adoptive status, adolescents follow the same pathway to behavioral adjustment as controls. In line with the cumulative effect hypothesis, the influence of adoptive status considered in isolation will not be enough to derail behavioral outcomes. Moreover, such a status could not lead to a higher risk of low IQ, insecure attachment and poor parenting in the adoptive family (Dhavale et al., 2005), which means that there will be a similar cumulative score on average in adoptees as in controls.

In line with these arguments, it can be thought that the behavioral issues of adoptees are only explained to a slight extent by the fact of having been adopted. The adoptive family provides a protective environment which outweighs the influence of their adoptive status, leading adoptees to follow a pathway to behavioral adjustment similar to that of