

## **Closing the Gender Gap in Schooling Outcomes and Cognitive Ability among Filipino Children**

Longitudinal Cohort Study on the Filipino Child  
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## **1. Introduction**

In the Philippines, sex differences in education outcomes are more favorable toward females (Paqueo & Orbeta, 2019; San Buenaventura, 2019; Maligalig, et al., 2010; Daniels & Adair, 2004), a trend also observed in other countries. For example, in industrialized countries, this disparity is described as the “male overrepresentation among secondary school drop-outs and female overrepresentation among tertiary education and graduates” (Pekkarinen, 2012). Similarly, the Global Education Monitoring Report (2018) found that boys, particularly in Europe and Latin America, are disadvantaged in terms of education outcomes because of gender expectations, poverty, and the school environment. Accordingly, boys from poor households are pulled out from schools due to the expectation that they could easily enter the market for unskilled labor. Likewise, school environments that propagate traditional gender norms could contribute to the disengagement of boys from schools (UNESCO, 2018). This discrepancy, particularly at an early age, sets boys at a distinct disadvantage in terms of human capital formation and prospects for a productive future.

## **2. Recent Findings on Sex Differences in Education Outcomes**

Paqueo and Orbeta (2019) pointed out that since the 1970s, gender differences in finishing tertiary education has been glaringly apparent wherein the number of male graduates had been lagging behind their female counterparts. This trend was also reported in the Annual Poverty

Indicators Survey in 2016 which revealed that, controlling for the effect of income classification, the average percentage of boys who were able to finish elementary education was much lower compared to girls. Furthermore, a wider gap was observed among the poorest 30% of the households compared to the highest 30% (APIS, 2016 as cited in Paqueo & Orbeta, 2019).

In the Philippines, the Department of Education (DepEd) has issued the “Gender-Responsive Basic Education Policy” to address this disparity in basic education following the mandate stated in the 2009 Magna Carta of Women and other pertinent laws on gender equality. This DepEd policy generally aims to “integrate the principles of gender equality, gender equity, gender sensitivity, non-discrimination, and human rights in the provision and governance of basic education.” DepEd recognizes the fact that “boys are underperforming in key education indicators compared to girls” (DepEd Order No. 32, series of 2017). In conjunction to this policy, DepEd has issued the “Comprehensive Sexuality Education” to “enhance the holistic wellness of the Filipino adolescents” through “ensuring that they are equipped with comprehensive information and appropriate life skills that can advance gender equality and empowerment” (DepEd Order No. 31, series of 2018). Aside from education indicators, there is an increasing number of boys who experience sexual abuse and other forms of violence than girls (UNICEF, 2016). The needs of the lesbian, gay, bisexual, and transgender (LGBT) community also need to be addressed. The Human Rights Watch in the Philippines raised the concern that policies on gender equality would still not make much difference, especially for the LGBT community, for as long as these are not followed through with strong implementation (HRW, 2017).

According to the report of San Buenaventura (2019) (See Table 1), primary net enrolment rate in the country for 2016 were almost equal for boys than for girls. As the children progressed to higher grade levels, the enrollment and completion rates among girls were higher compared to boys, clearly setting the direction of the gender gap in favor of girls. Similar results were observed in the study of Maligalig, Caoli-Rodriguez, Martinez, and Cuevas (2010) where girls were significantly more likely to attend school than boys between the ages of 7 to 12.

Table 1. Percent Distribution of Key Education Indicators by Sex: Philippines, 2015-2016

<b>Indicator</b>	<b>Boys</b>	<b>Girls</b>	<b>Both</b>
Primary net enrollment rate (2016)	96.2	96.1	96.1
Secondary net enrollment rate (2016)	68.8	79.9	74.2
Primary completion rate (2015)	81.0	87.4	84.0
Secondary completion rate (2015)	69.7	78.5	74.0
Primary dropout rate (2015)	3.3	2.0	2.7
Secondary dropout rate (2015)	8.3	4.9	6.6
Proportion of pupils who started grade 1 and finished primary school (2015)	84.8	90.6	87.5
Proportion of students starting grade 7 who reach grade 10 (2015)	77.3	85.9	81.6

Source: San Buenaventura (2019)

Several studies have examined the various reasons why Filipino children are not in school. Albert and Raymundo (2016) found that between 2008 and 2014, “lack of personal interest” stood out as among the main reasons for children aged 6-11 dropping out of school, with a higher proportion of dropouts among boys. Table 2 reveals that in subsequent years, lack of interest was still among the top reasons for dropping out along with illness or disability. Albert and Raymundo (2016) also reported that low educational attainment among parents was one of the reasons why children showed a lack interest in school.

Table 2. Percent Distribution of Out-of-School Youth by Reason of Not Attending School and Sex: Philippines, 2014, 2016, 2017

Reason	2014 <sup>a</sup>			2016 <sup>b</sup>			2017 <sup>b</sup>		
	Boys	Girls	Both	Boys	Girls	Both	Boys	Girls	Both
Lack of personal interest	38.2	30.5	36.0	18.5	16.4	17.7	31.4	27.8	30.2
Illness or disability	33.7	37.1	34.7	40.7	38.0	39.6	27.0	32.5	28.8
High cost of education	15.3	11.2	14.1	23.3	29.7	25.9	13.7	6.4	11.4
Accessibility of school	2.1	2.1	2.1	3.7	5.0	4.2	14.0	0.0	9.6
Too young to go to school	9.5	14.6	11.0	9.2	7.9	8.7	6.9	18.3	10.5
Other reasons <sup>c</sup>	1.2	4.5	2.1	4.5	3.0	3.9	7.0	15.0	9.5
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<sup>a</sup> Extracted from David, Albert, and Vizmanos (2018)

<sup>b</sup> Extracted from the Annual Poverty and Income Survey 2016 from the Philippine Statistics Authority

<sup>c</sup> Other reasons include problems with school records, employment, and housekeeping

Based on the analysis of historical data by Paqueo and Orbeta (2019), this gender gap will likely persist unless something is done to arrest this problem. However, outside the landscape of the educational outcomes between boys and girls, there is a more compelling reason to investigate the root causes of this disparity. As argued by Tan et al., (2011 cited in Paqueo & Orbeta, 2019), the difference stems from the fact that there is a higher return on education for women compared to men. Despite the empirical evidence available showing how boys tend to underperform, almost the same type of policies continues to be implemented, e.g., promoting gender equality between boys and girls in basic education.

In this policy note, sex disparity among 10-11-year-old Filipino children is examined, not just in school performance but also in terms of competency and cognitive measures. Using data from other Philippine studies, this note further explores predisposing factors that lead Filipino boys to underperform compared to girls.

### 3. Findings from the Longitudinal Cohort Study on the Filipino Child (Cohort Study)

The Cohort Study<sup>1</sup> (OPS, 2018) is designed to annually follow a nationally representative cohort of 10-year old Filipino children through young adulthood (from 2016 through 2030). The longitudinal data allow for studying the effects of early education on adult productivity. With half (52.45%<sup>2</sup>) of the cohort being male, this study is also ideal for studying sex disparities in human capital formation, particularly in education. This note uses data on the index children (IC) at age 10 (Wave 1; N=4,952) and age 11 (Wave 2; N=4,735).

The majority of the index children were between Grades 4 (29.4%) and 5 (61.2%) at study recruitment (Wave 1), and 27.7% and 61.5% of the retained sample in Wave 2 were in Grades 5 and 6 respectively (OPS, 2018; OPS, 2019). In both waves, the boys were disproportionately disadvantaged compared to girls in various measures of school performance (Table 3). What is of further concern is that boys were reported to less likely aspire for college education or believe they can reach that level. In the same vein, a higher proportion of mothers of boys did not aspire for college education for their sons nor believe their sons can achieve that level.

Table 3. Comparison of Schooling Outcomes between Boys and Girls for Waves 1 and 2

Schooling Outcomes	Wave 1		Wave 2	
	Boy	Girl	Boy	Girl
Repeated a grade <sup>a</sup>	13.7**	9.5	4.2***	1.9
Grade below 81 in last school year (W1 n=4,602; W2 n=4,542)	45.3**	29.0	39.2***	19.6
Missed school in past month (W1 n=4,876; W2 n=4,658)	61.7**	54.8	60.4***	50.6
IC does not aspire for college educ (W1 n=4,927; W2 n=4,698)	21.9***	14.6	20.6***	11.3
Mom does not aspire college educ for IC	17.6**	14.7	19.3***	13.5

<sup>a</sup>In Wave 1 this means ever repeated a grade; in Wave 2: repeated grade within current school year. Wave 2 n=4,679 because 56 ICs did not enroll in the current year

<sup>b</sup>\*\*Significantly different between boys and girls at p<0.05 \*\*\* at p<0.01

<sup>1</sup> The Longitudinal Cohort Study on the Filipino Child is a collaborative undertaking of government agencies, development partners and demographic researchers aimed to examine how the lives of Filipinos are changed in the course of the implementation of the Sustainable Development Goals (SDG) agenda (OPS,2018). The research strategy is to prospectively observe a nationally representative sample of 4,952 Filipinos from age 10 through 24 (2016-2030) and collect data on significant life course milestones such as puberty, school completion, labor force entry/exit, sexual activity initiation and other reproductive health events, and marriage. Data collected at each survey round are analyzed to determine the interplay of child, household and community attributes that explain various health and socio-demographic outcomes among the cohort. Study findings will inform policy decisions, program design and service delivery efforts.

<sup>2</sup> Results are weighted unless otherwise specified.

Among the schooling outcomes mentioned, there were improvements in the number of boys and girls who experienced getting a low grade, or missing school days. While a bit more aspired for college at age 11, the proportion of mothers of boys who did not aspire for college education for their sons slightly increased. Daniels and Adair (2004) supported these observed gender differences between Filipino boys and girls with respect to schooling outcomes. In the foregoing study, they found significant associations between the gender of children and their likelihood of either repeating a grade or dropping out of school through the height-for-age Z-score. Girls, who were significantly taller than boys, were less likely to ever repeat a grade as well as having a lower propensity to drop out of grade school (Daniels & Adair, 2004).

Table 4 shows significant differences between Cohort Study boys and girls in terms of persistent patterns in schooling outcomes between waves 1 and 2. Compared to girls, boys showed persistently poor performances in both waves in terms of repeating grades, getting grades below 81 in the previous school year, and missing school days in the past month. The same patterns were observed for aspiring for college education. Both the female children and their mothers had significantly lower incidence of not aspiring for college education as opposed to male children and their mothers.

Table 4. Comparing Persistent Patterns of Schooling Outcomes between Girls and Boys for Waves 1 and 2

Pattern of Schooling Outcome	Girl	Boy
Repeating a Grade <sup>a</sup>		
Never repeated a grade in both waves	90.0***	82.8
Repeated in either Wave 1 or Wave 2	9.0***	14.6
Repeated a grade in both waves	1.0***	2.6
Receiving a Grade of Below 81		
Did not receive a grade below 81 in both waves	67.9***	44.5
Received a grade below 81 in either Wave 1 or Wave 2	19.4***	26.0
Received a grade below 81 in both waves	12.7***	29.5
Missing School Days		
Did not miss any school day in both days	30.9***	22.8
Missed a school day in either Wave 1 or Wave 2	36.6***	34.9
Missed a school day in both waves	32.5***	42.3
IC Not Aspiring for College Education		
Aspired for college education	77.0***	65.0
Did not aspire for college education in either Wave 1 or Wave 2	18.7***	26.5
Did not aspire for college education in both waves	4.4***	8.5
IC Mothers Not Aspiring for College Education of their Children		
Aspired for college education	76.1***	68.9
Did not aspire for college education in either Wave 1 or Wave 2	17.9***	22.2
Did not aspire for college education in both waves	6.0***	8.9

<sup>a</sup>Pearson  $\chi^2$  test was used to measure the significant difference between girls and boys with respect to schooling outcomes

\*\*\*Significantly different between boys and girls at  $p < 0.01$

Differences were also observed between boys and girls in other measures of school performance and cognitive levels (Table 5). The Child Behavior Checklist (CBCL) (Achenbach and Rescorla, 2001) was administered to the index children at age 11. The CBCL is a tool that measures a child's competency in schooling (e.g., academic performance, school-related problems), activities (e.g., sports, hobbies, household chores, job, etc.) and social domains (e.g., relationship with friends or family members, being independent at work or in play). Results show that girls have significantly higher school competency scores compared to boys. However, when it comes to social competence, boys have significantly higher scores than girls. At age 11, cognitive capacity ability was also measured using the Raven's Standard Progressive Matrices (Raven, 1938). Girls obtained significantly higher scores compared to boys. These results suggest that girls perform better in school-related activities and have higher cognitive capacity ability compared to boys, but the latter tend to have better social skills (see Table 5).

Table 5: Disparity between Girls and Boys based on Child Behavior Checklist and Raven's Score

Variables	Girl	Boy
CBCL Competency Score		
Activity Scale (n=4,723)	6.41 ± 0.09	6.47 ± 0.09
School Scale (n=4,635)	5.09 ± 0.02***	4.86 ± 0.03
Social Scale (n=4,721)	6.60 ± 0.06**	6.78 ± 0.06
Total Competency Score (n=4,611)	35.18 ± 0.24	34.99 ± 0.27
Raven's Score (n=4,690)	30.17 ± 0.40***	28.69 ± 0.37

\*\*\*Significantly different between boys and girls at  $p < 0.01$

\*\*Significantly different between boys and girls at  $p < 0.05$

#### 4. Understanding Sex Differences

Studies have shown that the sex disparity likely begins as early as in infancy. In addition to discrepancies in biological preconditions such as birth weight, the ways by which these infant boys and girls are raised reinforce the gap between them. In the study of Adair and Guilkey (1997) using the Cebu Longitudinal Health and Nutrition Survey, higher incidence of stunting was observed among male infants in the first 12-14 months compared to female infants. Citing the work of Popkin et al. (1990), Adair and Guilkey (1997) found that male infants were given supplemental food earlier and in larger quantities and had higher rates of diarrhea compared with female infants. According to the same study, "breast-fed infants had a reduced likelihood of becoming stunted" (Adair & Guilkey, 1997). This would explain why higher cases of stunting were observed among male infants in the first year than among female infants.

Several studies have already established that newborn male infants have higher risks of morbidity and mortality compared to the newborn female infants and this hypothesis has been tested

several times across the globe with similar results (Elsmen et al., 2004; Alur, 2019; Kirchengast & Hartmann, 2009). Sex differences in health outcomes have been reported among preterm infants. Being born male and preterm were positively associated with “a higher risk of neurological, pulmonary, cardiovascular, and infectious morbidities as well as overall mortality” (Kent et al., 2012 as cited in O’Driscoll et al., 2018). Although the sex-specific differences have yet to be further investigated, various factors were considered important in determining hormonal, genetic, and immunological differences between preterm male and female infants. Unfortunately, the cause for this commonly observed male disadvantage remains to be established.

In another study, Iqbal, Gkiouleka, Milner, Montag, and Gallo (2018) found an association between sex difference and child mortality in 195 countries. Biologically, boys are more susceptible to diseases during the early infancy stage compared to girls. However, as boys and girls get past the infancy stage, the difference in mortality outcome appears. The study reported that mortality rate among girls under the age of five was higher in countries where there was a higher degree of gender inequality as measured through the Gender Inequality Index developed by UNDP. The more worrisome part of the findings was that higher mortality rates among girls under five years old were mostly found among lower to middle-income countries. The study recommended that global policy must “focus on reducing gender inequality surrounding reproductive health, women’s political empowerment, educational attainment, and participation in the workforce” (Iqbal et al., 2018).

Despite the male disadvantage, societal norms dictate that males must be treated as stronger and more independent than females, which amplifies the biological disadvantage of males. Kraemer (2000) explained that “social attitudes about the resilience of boys compound the biological deficit” that the boys are born with. Lending more support to this “socialization hypothesis”, Bharadwaj, Dahl, and Sheth (2015) argued that a person’s upbringing during childhood is reflected in the gender differences observed during adulthood. Similarly, Hindin (2005) found that parenting style has a significant influence on boys’ educational outcomes based on data from the Cebu Longitudinal Health and Nutrition Survey. Higher secondary education completion rates were observed among boys who reported that their mothers were either permissive or authoritative compared to boys who perceived their mothers as neglectful. Furthermore, boys who perceived their mothers as permissive/authoritative obtained more years in secondary education compared to those who reported having neglectful mothers. These results are indicative of how household characteristics such as parenting style could affect educational outcome differentials between boys and girls.

Extending the view on parenting style, the effects of fathers’ type of parenting on the educational outcomes of their children have also been discussed in the literature. Dumka et al. (2009) revealed that parental involvement in schools was not associated with academic outcomes. However, when controlling for the individual effects by parents’ sex, it was found that mother’s coercive parenting style was positively associated with their daughters’ higher school grades but not with fathers. On the other hand, Besharat et al. (2011) found that paternal parenting style, whether authoritarian or permissive, was not a significant predictor of children’s academic

achievements. A more recent study by Checa et al. (2019) also found similar results. The study investigated the influence of coercive and sensitive styles of parenting. Coercive style involves physical punishment while sensitive parenting style involves non-punitive approach like showing affection, warmth, and concern for children. The study found significant association between sensitive parenting style and academic outcomes but not with coercive style. Controlling for the effects of parents' sex, paternal parenting style was found to have insignificant effect on the academic outcomes of primary school children but not with maternal parenting style.

According to the Global Education Monitoring Report published by UNESCO (2018), certain traditional gender norms have contributed to the deepening disparity in education outcomes between boys and girls. Some of these traditional norms found across the world include the gender biased decision in households whose incomes have decreased. As found in some Latin American countries, boys tend to drop out of school because they are forced to join the labor force. This is likely reinforced by the prevailing view that boys are easily absorbed in the labor market than girls. Another traditional gender norm that tends to widen the disparity between boys and girls in education is the perception that boys are more prone to violence compared to girls. Because of this, boys receive harsher punishment from their teachers or school administrators, which can have a negative psychological effect. As observed in some parts of the world like in Central and South Asia, boys perceive the schools to be a harsh environment leading them to be disengaged from school activities and subsequently causing them to drop out of school.

As children get older, the invisible gender divide begins with the disparity in societal expectations that would eventually impact various outcomes later in life. Boys and girls are expected to behave and be treated differently. Gender, as defined in the Gender-Responsive Basic Education Policy of the Department of Education (2017), refers "to the social attributes and opportunities associated with being male and female and the relationships between women and men and girls and boys, as well as the relations between women and those between." Gender, as opposed to sex, is socially constructed, and is acquired through the socialization process. As such, it is expected that over time, expectations regarding how men and women should behave become deeply entrenched in the society resulting in some forms of gender divide (WHO, 2014). Differences between boys and girls may vary across countries but, as argued in the literature, there are several ways by which this disparity manifests itself through various outcomes such as in education, in health, and in the labor market. According to the United Nations Development Programme, "gender inequality is a characteristic of most societies, with males on average better positioned in social, economic, and political hierarchies" (UNDP, 2013).

These observed sex differences in terms of schooling outcomes and cognitive abilities of children may also be influenced by their exposure to the various contents in digital media and the internet that portray stereotypical gender roles. While there are not enough studies supporting the direct effects of children's exposure to gender contents in digital media and their educational achievements, some studies have shown how internet access among children can contribute positively to their learning experiences (Omar, et al., 2014; Wille et al., 2018). In the Philippines, the Global Kids Online (2016) identified the different opportunities provided by internet use



among Filipino children such as being able to obtain new and varied information that is useful in doing home or schoolwork. In the same study, it was also reported that the top online activities that children from the age group of 9-11 include “watching video clips, visiting a social networking site, using the internet for schoolwork and playing online games alone” (Global Kids Online, 2017). The factors associated with internet use are among the topics currently being examined in the Cohort Study. At age 10, a significant proportion of boys (44.2%) than girls (38.4%) reported using the internet. Among boys, their internet use hints at a higher propensity for related risky behaviors. For instance, at age 11, more boys (20.9%) reported online chatting with strangers compared to girls (11.3%) (OPS, 2019).

Although there have been numerous studies exploring the relationship between sex and gender differences and their effects on various outcomes of human lives, not much is known regarding the factors that explain these differences stemming from biological preconditions leading to how these children are treated by society based on their physiological attributes. As discussed in the literature, sex differences can have some influences on the educational outcomes of boys and girls. Boys, at birth, are more susceptible to diseases and other types of morbidities compared to girls (O’Driscoll et al., 2018; Iqbal et al., 2018). Despite this observed disadvantage, Adair and Guilkey (1997) noted that boys are weaned earlier compared to girls supporting the evidence of higher stunting incidence among boys than girls. This type of early childcare practice that already reveals sex disparity can have an adverse effect on the schooling outcomes of boys and girls. As pointed out, boys in general, have been underperforming in school based on various indicators and these could be explained by how they were reared and raised as children (Daniels & Adair, 2004; Maligalig, et al., 2010; Paqueo & Orbeta, 2019). Further in-depth studies must be explored to determine what drives the differences in biological preconditions and childcare practices, which later would impact differences in educational outcomes.

## **5. Policy Implications**

As pointed out in the literature review on understanding sex differences, the disparity observed between boys and girls could have started at infancy stage, which would persist later in life. However, for this policy note, heavy emphasis is placed on the disparity in terms of sex and gender among the 10-11-year-old Filipino children included in waves 1 and 2. Daniels (2017) reported that the Philippines is considered as one of the leading countries in Asia with respect to gender parity based on various indicators such as economic participation and opportunity, educational attainment, health and survival, and political empowerment. The report cited that the country placed higher relative to its neighbors in some of the global reports on gender ranking such as in Global Talent Competitiveness Index (2013) and Global Gender Gap Report (2014) (INSEAD, 2013; WEF, 2014). In this policy note, the focus is only on sex disparity in terms of schooling and cognitive functioning, highlighting the apparent advantage of girls over boys. There is a need to understand the extent to which the sex disparity is manifested in other areas in the lives of children. Various government policies promoting equal opportunities to everyone regardless of gender must be able to address the gender issue from all angles and across age

groups. After all, if not properly addressed, the adverse consequences associated with the gender gap are likely to persist as these children transition to adulthood.

*It is recommended that the Department of Social Welfare and Development and the Department of Health extend gender equity training and education among parents particularly among new parents.* A huge part of how boys and girls mature into responsible and productive adults is defined by how their parents raise them. Although gender and development principles are incorporated in the family planning programs of the government, there is still a need to re-visit how these are discussed among parents especially if the intention is to promote equal treatment among children regardless of their sex at birth. Trainers and government officers must also be equipped with proper and adequate information about gender issues and the relevance of promoting gender equity between boys and girls not only in education but also in health and employment.

*It is recommended that the Department of Education examine the content of gender socialization within households and in the curricula used in basic education.* If boys at this age continue to drop out of school despite not being employed in the labor market, then the problem could be in how these boys “who lack interest in attending schools” are being taught and treated inside the classrooms. Both parents and teachers can play a positive role in reinforcing the importance of education without holding any expectation in how boys and girls should be educated and what type of information should be inculcated in them. The Global Education Monitoring Report of the United Nations Educational, Scientific, and Cultural Organization (UNESCO) in 2017 posited that a gender-responsive school environment requires that the “curricula and textbooks should be free from gender bias and promote equality in gender relations” (UNESCO, 2017). The coordination of parents and teachers in promoting gender-sensitive treatment to boys and girls both at home and at school is deemed necessary to address the gender gap among children at a young age.

This also calls for an examination of how school administrators, teachers, and parents together would approach cognitive and social competency challenges experienced and exhibited by children. The CBCL and Raven’s results provide insights on how differently boys and girls cope with problems associated with their schooling or interact within their social milieu. As already shown in the previous section, compared to girls, boys have poorer school-related outcomes and are less likely to aspire for higher education.

*It is recommended that the Department of Education strengthen its advocacy for the responsible use of digital media and the internet among children, through partnership with the parents and those responsible with digital media/internet content. In particular, messages that wrongly encourage gender inequality must be strongly monitored.* The advancement of digital technology has allowed children to be exposed to various media contents either via the traditional media (i.e., newspaper, television, radio) or the new media (i.e., social media sites, online streaming sites). According to the report of Tan, Estacio, and Ylade (2016), Filipino children spend more time using digital media and the internet, on average being online between half an hour to four hours a day. The same report also noted that the amount of time children spend on the Internet

increases as they get older. Without appropriate supervision and education, children might be exposed to media contents that could wrongly portray gender roles of men and women. Although it would seem impossible to filter or censor the contents of media, especially digital media, it is recommended that parents and teachers have the appropriate knowledge on how to supervise children viewing media contents with the aid of various enterprises that create and disseminate information through the digital platforms.

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