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How can we explain the gender gap in children's political knowledge?

Alice Simon

Université de Montpellier, CEPEL

Abstract: The gender gap is one of the main puzzles explored in research on political knowledge. Studies on children have shown that this phenomenon takes root in childhood. Girls score lower than boys on knowledge tests, despite cultural developments promoting greater gender equality. How can the gender gap in children's political knowledge be explained? This article examines the leading explanations for the gender gap found in the literature in light of the results of an original empirical study conducted with French children in primary school. It suggests that the gender gap in children's political knowledge does not mainly result from either specific social inequalities or methodological bias, although the study does find that question-answering behavior differs between boys and girls. Rather, the gender gap appears to primarily result from socialization. Children progressively develop different perceptions of politics according to their gender, as well as different approaches to knowledge tests.

Introduction

The unequal distribution of political knowledge among citizens has become a well-established fact in political science. Various studies have shown that the level of political knowledge is correlated with variables such as the level of education, socioeconomic status, age, and gender (see for example Converse, 1964; Delli Carpini & Keeter, 1993; Gaxie, 1978, 1996; Mondak & Davis 2001, etc.). The gender gap is one of the main puzzles explored in research on political knowledge. In most studies men score far higher than women on knowledge tests, especially on questions that involve naming politicians or that cover national political news (Dolan, 2011; Fraile, 2013, etc.). This gap is generally considered to be a legacy of the patriarchal culture in our societies, long based on a gendered division of labor in which only men were in charge of public affairs. Having internalized what remains of these gender roles, women tend to be less interested in politics and less concerned about their country's government. If this explanation is correct, recent social changes towards greater gender equality should be expected to reduce the gender gap in political knowledge, especially for the youngest generations, who are most affected by these changes (Hahn, 1996; Fraile, 2013).

Studies with children therefore provide a way to measure the impact of cultural developments on the gender gap in political knowledge. More broadly, studying children is conducive to better understanding the origins of knowledge inequalities. Indeed, as Piaget said "when only considering the adult, we only perceive already-formed mechanisms, while when following children's development, we witness formation, and only formation is explanatory" (1972, p.139, *author's translation*). Observing children is a means to understand what happens at the very beginning of political socialization, and thus to study the foundation of political cognition. The field of childhood political socialization has produced several studies on political knowledge, although most of them were published in the heyday of this field of research, in the '60s and '70s (see for example Easton & Dennis, 1962; Landes, 1977; Langton & Karns, 1969). The studies that focused on gender systematically found knowledge gaps in children's political efficacy: young girls tended to be less interested in politics, to be less attentive to political information, and to be less knowledgeable about their government, their country's political history and ways to influence government (Applebee, Langer & Mullis, 1987; Dowse & Hughes, 1971; Greenstein, 1965; Hess & Torney, 1967, Owen & Dennis, 1988). A number of studies have addressed this issue more recently, pondering the effects of social change on the gender gap (Baldi, Perie, Skidmore, Greenberg & Hahn, 2001; Milner, 2007; Ferrin-Pereira, Fraile & Rubal, 2014; Torney-Purta, 1991; Van Deth, Abendschön & Vollmar, 2011; Wolak & McDevitt, 2011). A few changes in gendered

political socialization were identified: in several studies, girls showed equal interest in politics and concern about national affairs (Torney-Purta, 1991; Hahn, 1996). Yet all the studies including cognitive scales still found a gender gap in the political knowledge of children and adolescents on at least some of the test questions. How can the gender gap in children's political knowledge be explained? This article presents the results of an empirical study on French children, providing a means to test the leading explanations for the gender gap cited in the literature. After a brief presentation of the theoretical framework and empirical data, each section of the article will explore one of three possible explanations of the gender gap in children's political knowledge: the situational explanation, the socialization explanation and the methodological explanation.

Theoretical Framework

This article focuses on a narrow conception of political knowledge, which is defined as the possession of a body of factual knowledge about the political sphere. Political knowledge in this sense can be analytically separated into three elements: an understanding of the political system and democratic mechanisms; an appreciation of political duties and of the figures and groups performing them; and a general grasp of the political context, including awareness of major political events, ideas and cleavages (Delli Carpini & Keeter, 1993; Luskin & Bullock, 2004). Three classical explanations for the gender gap appear in the literature (Fraile, 2013), and this study tests each one in relation to children.

First, the gender gap can be seen as a result of situation. Indeed, women tend to have lower social and economic status and fewer responsibilities, and all these characteristics are correlated with a lower level of political knowledge (see for example Delli Carpini & Keeter, 1993; Gaxie, 1978). Moreover, even when controlling for socioeconomic status, women tend to have more domestic duties, and therefore fewer opportunities to become informed about politics (Fraile, 2013). This explanation implies that the gender knowledge gap results from social inequalities. However, these should not affect children in primary school, where all children share the same status of being pupils and no particular social inequalities disproportionately affect either young girls or boys. Major disparities exist in children's socioeconomic and cultural environments, but there are no correlations between these variables and gender during childhood: at this stage, girls have neither a lower socioeconomic status nor a lower educational level than boys. Children are therefore a sample in which particular life circumstances are roughly similar across the genders.

Hypothesis 1: If the situational explanation is the main factor in the gender gap, there should be no differences in the political knowledge of young girls and boys.

Second, the gender gap can be considered a result of socialization. Educational practices and collective beliefs about gender roles might lead children to adopt different attitudes and behaviors, including a different perception of politics. Even though social change has generally reduced gender inequalities in the domestic and political realms, a diffuse representation of gender roles still associates public affairs with men, and women with domestic matters (Francis & Skelton, 2001). Consequently, men tend to be more knowledgeable about politics than women, although in some sub-areas (such as local affairs) women's scores are equal or even better than those of men (Dolan, 2011; Shaker, 2012; Fraile, 2013). The knowledge gap could then be explained by the fact that the knowledge tests focus on men's interests (Ferrin-Pereira et al., 2014). This socialization effect could shape political knowledge at the very beginning of political socialization, since gender identification takes root in early childhood. Yet the impact of gender socialization should become increasingly apparent in the results of knowledge tests as the children grow older and accumulate knowledge. Indeed, regardless of gender, all children are born without any political knowledge, but reach adulthood with unequal levels of knowledge. The impact of gender socialization on political knowledge is therefore a progressive process.

Hypothesis 2: If the socialization explanation is the main factor in the gender gap, different scores should be expected for girls and boys, and the difference should be greater for older children and variable depending on the questions.

Finally, the gender gap can be interpreted as a result of survey methods. Women tend to answer test questions in a way that significantly decreases their scores in comparison to men, who take more risks and are more self-confident (Ben-Shakhar & Sinai, 1991; Fraile, 2013; Mondak & Davis, 2004). The risk aversion of women, who fear selecting the wrong answer, pushes them to select the "don't know" option more often than men, whose scores are thereby inflated since they are more likely to randomly select the correct answer. These question answering behaviors are a consequence of gender personality development, which starts early in life.

Hypothesis 3: If the methodological explanation plays a role in the gender gap, it should affect children's knowledge test scores.

Empirical Data

The study was conducted from spring 2014 through spring 2015 at six schools in a mid-sized French town¹. 369 pupils in 21 different classes, between the ages of eight and eleven

¹ The town (300,000 residents, suburbs included) is socially heterogeneous: some areas have high rates of unemployment and immigration while others are home to very educated and often rich families.

(classes CE2, CM1 and CM2), received questionnaires that they individually completed during class time. Efforts were made to select schools as diverse as possible with regard to their location (suburb, city-center) and the socioeconomic status of their pupils². The questionnaire included several sections. First, children were asked about their family, habits, socioeconomic background, etc.; next they were asked a variety of opinion questions; then they had to complete a knowledge test; at the end they were asked to assess the questionnaire. The knowledge test consisted of three types of questions. The children were asked to recognize and name some political figures in pictures, then to complete a series of multiple-choice questions on political figures, parties and institutions, and finally to answer a few open-ended questions (for more details, see a translation of the knowledge test in the appendix). This survey design enabled measurement of children's political knowledge on different issues and according to variables such as socioeconomic features, age and, most importantly for this study, gender.

Is there a Gender Gap in Children's Political Knowledge?

The children's scores on the political knowledge test varied widely. Many children answered only a few questions correctly, while others knew almost all the answers. A series of regression analyses were performed to identify the main determinants of political knowledge. The regression model presented in Table 1 only includes the variables with the greatest explanatory power, in order to underscore the relative importance of gender (see a detailed description of the variables in Appendix 2). The results reveal a gender gap in children's political knowledge, although gender is far from being the main determinant of political knowledge in childhood.

Table 1. Factors of Political Knowledge (linear regression)

Variable	Beta coefficients
<i>Reference category</i>	(standard errors)
(Constant)	5.904*** (.813)
Age	.391***
<i>oldest children</i>	(.160)
Gender	.095*

² In each participating school, efforts were made to include as many pupils as possible in the study, as long as teachers and parents agreed. Children below eight years old (CE2 year) were not included because of their generally insufficient reading and writing skills.

<i>male</i>	(.287)
Academic competence	.202***
<i>very good pupil</i>	(.140)
Social background	.175***
<i>very privileged</i>	(.137)
Family politicization	.245***
<i>high politicization index</i>	(.140)

Note. $N=358$; * $=p<.05$ ** $=p<.01$ *** $=p<.001$; $F = 36.249$ ($sig = .000$); adjusted $R^2 = .345$. See a detailed description of the variables in Appendix 2

The main explanatory factor for political knowledge is the class the children are enrolled in (.391***), with each class corresponding to an age group based on birth year. The age variable could be affecting the results for several reasons. First, because the acquisition of knowledge is a process of progressive accumulation, even though it may be uneven. Moreover, age can also be considered a marker of a social position: as children grow older, they are increasingly socially expected to be knowledgeable about different issues. The results confirm that this stage of life is crucial for the acquisition of political knowledge (Connell, 1971; Percheron, 1993). Political knowledge is also determined by children's academic competence (.202***), assessed on the basis of their teacher's evaluation of their educational achievement. This implies that conditions and provisions that help develop academic competence also develop political competence, probably partly because both are linked to sociocultural inequalities and parents' educational practices, and partly because children with a higher level may be more curious and have better memory skills. Political knowledge is also shaped by children's social background (.175***) – the more privileged the environment, the more knowledgeable the children – as well as by the family's level of politicization (.245***)³. Finally, of most relevance to this study, gender is a significant factor, but its role is limited in comparison with other variables (.095*). Hypothesis 1 is therefore invalid: if the gender gap begins as early as childhood, then it cannot be explained only by specific differences in the social positions of men and women, since these differences only appear later in life.

Overall, these results are congruent with the results of knowledge tests in other countries (Baldi et al., 2001; Van Deth et al., 2011): the main determinants of political knowledge are similar. To some degree, these results are also similar to findings for adults in

³ The family's level of politicization is determined on the basis of children's statements about political media consumption and political discussions at home.

France and abroad (Chiche & Haegel, 2002; Delli Carpini & Keeter, 1996; Perrineau, 1985). The main difference to adult studies is that many variables cannot be tested on children (for example their level of education, their occupation or their voter turnout): since all children share the same status as pupils, their social position can only be defined by their social environment (their area of residence and their family). Furthermore, the age variable is more important for children than for adults. Indeed, political knowledge is acquired progressively throughout the political socialization process, and at this very early stage every year makes a difference. The gender variable appears to be weaker for children than for adults. This might be because of the progressive impact of gender socialization on the gender gap in children's political knowledge.

Is Gender Socialization the Main Explanatory Factor for the Gender Gap?

Gender socialization is a lifelong process, but its effect is especially strong in childhood and adolescence, because individuals develop gender identity at this stage of life. Children are born without any gender identification, but most of them reach adulthood having completely internalized their gender roles, which shows that social norms regarding gender are transmitted early in life (Francis & Skelton, 2001). As a result, gender-specific political socialization should be expected as soon as children become aware of politics. Moreover, its effect on knowledge tests should become increasingly salient as children grow older and develop political efficacy.

Table 2. Mean Scores of Girls and Boys on the Knowledge Test (out of 15)

	Girls	Boys	t-test (girls)
8-9 years old	6.199 (N=64)	5.545 (N= 61)	1.257
9-11 years old	8.252 (N=107)	9.312 (N=126)	-2.404**

Note. *= $p < .05$ **= $p < .01$ ***= $p < .001$

Table 2 indicates that as children grow older the gender gap widens⁴. At 8-9 years old, children are generally not very knowledgeable about politics, but girls and boys are at approximately the same level. Most only know basic information about their country's government. Girls even have a slight edge (1.257), although the results are not significant. At

⁴ In Table 2, children were divided into two age groups: the youngest pupils (CE2 pupils who are aged 8 to 9 years old) and the older pupils (CM1 and CM2 pupils who are aged respectively 9 to 10 years old and 10 to 11 years old). CM1 and CM2 pupils were merged in a single group because CM1 numbers are too small (N=68) to make this age group a single category, and because in the French school system CM1 and CM2 are part of the same broad curriculum.

9-11 years old, however, children are much more aware of politics, and the gender gap is clearly visible (-2.404**). This means that children begin the political socialization process with an approximately equal level of knowledge, and that the gender gap only appears at a later stage. The results align with those of Owen and Dennis (1988, p.35), who found that “gender distinctions in politicization become more pronounced as pre-adults enter adolescence; a time when they are approaching the age when they are able to become more overtly politically active”. This seems to confirm hypothesis 2, according to which the gender gap is a consequence of gender socialization. Indeed, gender socialization has a progressive impact on identification and attitudes throughout childhood.

Another argument in favor of the socialization explanation of the gender gap is the existence of sub-fields of political knowledge. Several studies have shown that depending on the content of questions women do not always score lower than men (Delli Carpini & Keeter, 1993; Ferrin-Pereira et al., 2014). For example, women are equally knowledgeable about practical areas of political activity (such as government benefits and services; Stolle & Gidengil, 2010) and about local politics (Shaker, 2012). Table 3 shows that girls scored lower than boys on the test, but that they did not score lower on all the questions.

Table 3. General Mean and Gender Difference on Distinct Knowledge Items

Questions	General mean	Gender difference: t-test, girls (1)
Recognizing Barack Obama (picture)	59%	-3.720***
Who was President of France? Chirac (MCQ (2))	45%	-2.586**
Who is President of Russia? Putin (MCQ)	33%	-2.264*
Recognizing Manuel Valls (picture)	21%	-1.949*
What is the Front National? a political party (MCQ)	64%	-1.462
Who works at the National Assembly? congressmen (MCQ)	26%	-1.440
Who is the city mayor (open question)	65%	-.247
Who leads France? a left-wing president (MCQ)	29%	.084
Recognizing Marine le Pen (picture)	77%	.487
What is François Hollande’s job? (open question)	69%	.632

Note. N=358; *= $p < .05$ **= $p < .01$ ***= $p < .001$; reference category: boys.

(1) ascending order

(2) multiple-choice question

The results show that the gender gap varies depending on the issue. The question on which girls lag most consists of recognizing Barack Obama in a picture (-3.720***), almost immediately followed by the question on identifying Vladimir Putin as the President of Russia (-2.264*). These results indicate that boys score higher on international knowledge, which is consistent with the findings of other scholars about adults (Applebee et al., 1987; Kneedler, 1988). Technical questions about French politicians (Jacques Chirac and Manuel Valls) also recorded higher scores for boys (respectively -2.586** and -1.949*). Meanwhile, girls scored as well as boys or even slightly better when asked to name the city mayor (-.247), to determine whether France is led by a right- or left-wing president (.084) and to state François Hollande's function (President, .632). This means that girls are equally well informed about local affairs, as is the case for adults (Shaker, 2012), and about general facts on French politics, although they score lower on items involving particular politicians. Interestingly though, they do not score lower than boys when asked to recognize Marine le Pen (.487). The reason might be that girls tend to more easily recall information about women (Dolan, 2011). Whatever the exact explanation of these results, they indicate that the gap varies according to the sub-areas of knowledge. This could be considered a result of gender socialization, be it parents educating girls and boys differently about politics or the children themselves developing different areas of interest. Thus far, the results show that the gender gap in children's political knowledge can be explained by gender socialization. But another explanation could challenge these findings: indeed the gender gap might also partly result from methodological biases.

Could the Gender Gap be a Consequence of Methodological Biases?

The methodological explanation of the gender gap assumes that men and women use different knowledge test-taking strategies, which artificially inflate the scores of men (Luskin & Bullock, 2004). This is because multiple-choice questions give respondents a chance to guess, and men take the chance more often than women (Delli Carpini & Keeter, 1993). When standard grading is used ("don't know" and wrong answers graded 0, correct answers graded 1), the expected score for guessing is 0.33 points per question when the items have three possible answers⁵. Consequently, multiple-choice questions always overestimate knowledge levels depending on how often respondents try to guess. Research by Chiche and Haegel (2002), Mondak (2004) and Fraile (2013) suggests that when the respondents are unsure, all things being equal, men tend to guess while women tend to choose the don't know

⁵ Moreover, guessing is not always completely random. For example, the respondents might be able to eliminate one of the three answers to some of the questions, and would therefore only be guessing between two possibilities (the expected score then rises to 0.5 points).

(DK) option, which may lead to an overestimation of the gender gap in political knowledge. Indeed, when the DK option is eliminated from tests, encouraging respondents to guess, the gap narrows significantly. According to Mondak “the evidence suggests that the tendency of men to provide substantive answers rather than DKs possibly inflates their knowledge scores by a margin large enough to account for approximately half of the observed gender gap” (Mondak & Anderson, 2004, p.503). However, other studies have challenged these results by finding that guessing strategies did not significantly affect results since the DK option generally did not hide knowledge but rather revealed respondents’ true ignorance, so that encouraging guesses yielded similar results as assigning random answers to DKs (Ben-Shakhar & Sinai 1991; Westle, Begemann & Rütter, 2014).

In order to test the methodological bias hypothesis on children this study included an experiment inspired by Mondak’s work: half of the questionnaires included “don’t know” boxes for each multiple-choice question, while the other half did not include any DK boxes and explicitly asked the children to guess when they did not know the answer⁶. This enabled the measurement of the propensity to guess, and the assessment of its impact on the results of this part of the test⁷.

Table 4. Answers to the Multiple-Choice Questions Depending on the Type of Test (t-tests)

	No DK option provided (N=178)	DK option provided (N=180)	Together (N= 358)
Omission	2.161*	.351	2.155*
Don’t know	-	2.150*	2.150*
Wrong answer	-.422	-1.855*	-1.136
Correct answer	-1.628	- 1.406	-1.927*

Note. : *= $p < .05$ **= $p < .01$ ***= $p < .001$; reference category: boys.

The first element that indicates gender disparities in the way children answer the knowledge test is the number of omissions. Table 4 shows that girls refrained from guessing twice as

⁶ This produced internal variation in the results, because all children did not take exactly the same test. However, the different versions of the questionnaire (including DK or not) were randomly distributed to the children in each class. As a consequence, this design had no impact on the overall determinants of political knowledge.

⁷ Only half of the test was made of multiple-choice questions.

often as boys when the DK option was not provided (2.161*). Moreover, when the DK option was provided, girls chose it more frequently (2.150*). This reluctance to guess can partly be explained by an objective difference in political knowledge: because girls are less politically aware, they tend to declare themselves incompetent more often. However, a closer look at the results suggests that this gap is also due to different answering strategies: boys take more risks than girls. Indeed, when the DK option was provided, they made more mistakes than girls (-1.855*). The implication is that when children are unsure of the correct answer, girls tend not to answer while boys tend to guess, as seen in the literature on adults (Mondak, 2004; Fraile, 2013). This risk-taking strategy should increase boys' chances of selecting the right answer, either randomly or through guessing. Yet it does not significantly change the overall results. Indeed, removing the DK option and encouraging guesses did not significantly increase girls' scores compared to the increase in boys' scores. On the contrary, the difference between girls and boys was slightly more pronounced without the DKs (-1.406 with DKs, and -1.628 without)

The explanation is that even when they are encouraged to guess, many girls still prefer to refrain from answering than to take a risk, once again creating an advantage for boys. If an artificial situation is set up whereby a random answer is assigned to each omission when DKs are not provided, as shown in Table 5, the gender gap narrows compared to the scenario in which the test includes DKs.

Table 5. Answers when no DK option is provided with Systematic Assignment of Omissions According to the Expected Score for Guessing (t-test, girls)

(N=178)	t-test
Correct answers (+1/3 of omissions) ⁸	-1.109
Wrong answers (+ 2/3 of omissions)	1.140

Note. N=178; *= $p < .05$ **= $p < .01$ ***= $p < .001$; reference category: boys.

Table 5 indicates that if the children were forced to guess (which is not actually possible in a pen-and-pencil questionnaire) the gender gap would slightly narrow. The inclusion of DKs therefore does penalize girls, because they decide to refrain from answering more often, and this strategy makes them lose a one-out-of-three chance of randomly selecting the right answer. However, in the case of this questionnaire, there was no major difference between the tests including DKs and the artificial situation presented above. When

⁸ Since the questions include three answer choices, respondents have a one-in-three chance of selecting the correct answer randomly, and two-in-three chance of selecting an incorrect answer.

the DK option was removed, girls' percentage of correct answers increased by approximately the expected score for guessing. These results suggest that when girls choose the DK option it is generally because they truly do not know the answer to the question, and that there is no hidden knowledge behind the DK response. In other words, there are no or few differences between the answering strategy of a boy and that of a girl when s/he is informed or partly informed. In such cases all children pick the answer they think is correct. Differences appear when they are completely uninformed. In this case, girls tend to choose the DK box and are reluctant to guess, even if encouraged to do so, while boys tend to guess, as demonstrated by their greater tendency to answer incorrectly. These results suggest that the gender difference in response strategies is due less to girls' risk aversion, and more to boys' DK aversion.

Hypothesis 3 therefore cannot be validated: guessing does not significantly change the results. Although these findings indicate that the gender gap is not due to a survey effect, they do show that girls and boys do not answer questionnaires in the same way. This is not just a potential methodological bias, but also an indicator of gender differences in test-taking behavior that seems to be a direct consequence of gender socialization.

What if these Methodological Issues were also a Consequence of Socialization?

The tendency to guess can be considered a result of gender socialization. During childhood, the diffusion of social norms might be "inviting men to shout out the answers" while encouraging women to "sit in the back and keep quiet" (Mondak, 2004, p. 493). Because of tacit representations of gender roles, boys learn to take more risks, are encouraged to show off their abilities and discouraged from admitting they do not know something, while girls learn to be cautious and tend to feel less confident in their answers (Simon, 2015). These gender characteristics influence the way girls and boys take knowledge tests, in terms of level of confidence, risk aversion and DK aversion. Moreover, children probably develop different perceptions of knowledge itself. Boys may feel it is their duty to be in possession of a set of factual knowledge and therefore feel ashamed if they do not know something, while girls may be more comfortable admitting ignorance. The development of a sense of legitimacy therefore differs for girls and boys (Bourdieu, 1977). From a psychological point of view, this difference in the attitudes of men and women towards knowledge tests can be interpreted as the result of a stereotype threat – negative stereotypes about women's efficacy might undermine their performance on knowledge tests (McGlone, Aronson & Kobrynowicz, 2006). These hypotheses can partly be verified through the analysis of a question at the end of the knowledge test which asked children to assess the difficulty of the questionnaire. The results

presented in Table 6 show that at equal levels of knowledge the probability of finding the test easy is mainly predicted by gender.

Table 6. Probability of Finding the Test Quite/Very Easy (Binary logistic regression)

Variables <i>Reference category</i>	Coefficients (standard errors)	Exp(B)
Constant	-1.840*** (.545)	.159
Gender <i>boys</i>	.570* (.270)	1.768
Knowledge level <i>Higher level</i>	.194*** (.046)	1.213

Note. N=275; *= $p < .05$ **= $p < .01$ ***= $p < .001$; R2 Nagelkerke: .128; Khi 2: 25.698

Gender therefore affects the way children approach tests. By declaring that they consider the test to be easy, boys are declaring themselves competent, whether or not they are. There may be a link between this perception of the test and the propensity to guess: if boys think that the test is easy, they are probably confident in their ability to answer all the questions, which should encourage them to guess in cases of uncertainty. Conversely, girls tend to find the test difficult, which encourages them to admit ignorance and choose the DK option. This is a result of socialization: social norms encourage boys to feel confident and knowledgeable. Therefore, what is generally seen as a methodological bias (the propensity to guess) can itself be considered a result, indicating different attitudes towards test taking and revealing a self-confidence gap. In turn, these differences might push boys to further acquire knowledge: because they feel more competent and more legitimate, they might feel more comfortable talking about politics, opening opportunities for them to learn new information. Moreover, if they feel they are expected to be knowledgeable, they might make greater efforts, consciously or not, to learn more about politics. A new hypothesis worth exploring is whether the self-confidence gap is partly responsible for the knowledge gap.


Conclusion

This study is based on a relatively small group of respondents (N=369), who all live in the same town. National or international surveys would be needed in order to provide more precise and complete data on children's political knowledge. This study did not pretend to provide such data: it must rather be considered as a case study, aiming to interrogate the

explanations of the gender gap in children's political knowledge. Although limited in scope, it contributes to confirming that the gender gap in political knowledge takes root in childhood. Consequently, the "situational explanation" (according to which the gender gap in political knowledge results from social inequalities in the occupations of men and women) alone cannot explain the existence of the gender gap, since all children have the same occupation: being pupils. Rather, the study's findings indicate that the gender gap is a consequence of gender socialization. As they grow older, girls and boys progressively develop different perceptions of their roles according to their gender, which in turn increasingly affects their political efficacy. Indeed, the older the children, the stronger the impact of these socialization effects, so that the gap becomes increasingly salient over the years. Moreover, the gap varies depending on the issues. Girls score as well as boys on some questions, such as those on local politics and on women, but score much lower on questions involving international politics or male politicians. This has been interpreted as a sign that the gender gap results from the internalization of gender roles: certain sub-areas of political knowledge are socially considered to more or less fall within women's sphere of competence, thereby shaping their interest in the information and their efforts to remember it. Finally, the gender gap measured here does not appear to result from a methodological bias: the experimental design showed that boys do take more risks than girls, but that this strategy only accounts for a small part of the gender gap. However, these findings point to gender differences in social behavior that stem from another aspect of gender socialization: girls and boys develop different attitudes towards test taking and towards knowledge in general. Further studies are needed to measure the impact of factors such as self-confidence on the acquisition of political knowledge. Indeed, it appears that gender socialization affects children's political knowledge both directly, through the diffusion of social norms regarding politics, and indirectly, through the internalization of attitudes towards tests and towards knowledge.

Appendix 1. Translation of the Knowledge Test

(correct answers are either indicated in parentheses or highlighted)

	Who is he?..... What is his job? (François Hollande President)		Who is he?..... What is his job? (Manuel Valls Prime Minister)
	Who is she ? (Marine Le Pen)		Who is she? What is her job? (Christiane Taubira Minister of Justice)
	Who is he ?..... (Nicolas Sarkozy)		Who is he ?..... (Barack Obama)

What is the name of the President of Russia?

- Hugo Chavez Garry Kasparov George Bush *I don't know*

Who is a former President of France?

- Jacques Chirac Jean-Marc Ayrault François Fillon *I don't know*

What is the name of your city's mayor?

Who works at the Assemblée Nationale?

- congressmen ministers journalists *I don't know*

Who is Nicolas Sarkozy?

- a minister a former President a congressman *I don't know*

Who is currently leading France?

- A left-wing President a moderate President a left-wing President *I don't know*

What is the capital of France?⁹ Tokyo Paris New-York *I don't know*

What is the Front National?

- a rock band a newspaper a political party *I don't know*

What elections were held in France in March?

- presidential elections European elections city council elections *I don't know*

⁹ This item aimed to verify that the children had taken the test seriously and had sufficient reading and cognitive skills to understand it. The few children who failed this question were not taken into account in the analysis. The item is therefore not included in the knowledge scale.

Appendix 2. Description of the variables

Variable	Measurement	Mean (standard deviation)
Knowledge level [scale]	The test included 17 questions overall (see Appendix 1), but the knowledge scale used above is a grade out of 15: two pairs of questions (those on François Hollande and Manuel Valls) were awarded 1 point for the pair (0.5 points for each question) because they addressed a single knowledge item.	7.72 (3.55)
Age [ordinal variable]	This study refers to the class children are enrolled in, with each class corresponding to an age group based on birth year. This measure is not precise regarding children's biological age, as a small part of the children repeated or skipped a year.	2 (1)
Gender [nominal variable]	Children were asked their gender in the questionnaire.	
Academic competence [ordinal variable]	Teachers were asked the academic competence of each pupil, i.e. the evaluation of his/her educational achievement. The question was "Is the child a "very good pupil/ good pupil /average pupil / pupil facing difficulties / pupil facing great difficulties?" (translation)	2.38 (1.23)
Social background [scale]	The social background variable is an index indicating the social characteristics of the school. This index is based on questions about the parents' occupations. Schools in which most parents have upper-class occupations score higher on the scale than schools in which most parents have working class occupations. Parents' occupations were not taken into account on an individual level because many children did not answer these questions precisely enough. Yet at a collective level this variable indicates quite accurately to which extent the schools are favored or disadvantaged.	3,97 (1,13)
Family politicization [scale]	Family politicization is an index built on several questions of the questionnaire : - "Do your parents read a newspaper? <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> I don't know. If they do, which one do they read?" - "At home, do you hear discussions about political figures (François Hollande, Nicolas Sarkozy...)? <input type="checkbox"/> yes, often <input type="checkbox"/> yes, sometimes <input type="checkbox"/> not so much <input type="checkbox"/> I don't know" - "At home, do your parents listen to the news on the radio? <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> I don't know" (translation)	1,22 (1,04)

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