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**Title:**

The development of explicit occupational gender stereotypes in children: comparing perceived gender ratios and competence beliefs

**Authors:**

Valentina Canessa-Pollard<sup>1,2</sup>, David Reby<sup>3</sup>, Robin Banerjee<sup>1</sup>, Jane Oakhill<sup>1</sup>, Alan Garnham<sup>1</sup>

**Corresponding author:**

Valentina Canessa-Pollard, email address: [v.canessapollard@gmail.com](mailto:v.canessapollard@gmail.com)

**Affiliations:**

<sup>1</sup>School of Psychology, University of Sussex, Falmer, BN1 9RH, UK

<sup>2</sup>Psychology, Institute of Education, Health and Social Sciences, University of Chichester, PO19 6PE, UK

<sup>3</sup>Equipe Neuro-Ethologie Sensorielle, ENES / CRNL, CNRS UMR5292, INSERM UMR\_S 1028, University of Lyon / Saint-Etienne, France

**ORCID:**

Dr Valentina Canessa-Pollard 0000-0002-3646-7871

Prof Alan Garnham 0000-0002-0058-403X

Prof Robin Banerjee 0000-0002-4994-3611

Prof David Reby 0000-0001-9261-1711

## Development of occupational gender stereotypes in children

The development of explicit occupational gender stereotypes in children: comparing perceived gender ratios and competence beliefs

### **Abstract**

Overcoming gender occupational stereotypes is a major educational objective in removing barriers to children's future career ambitions and employment aspirations. Yet, the mechanisms that underlie the development of occupational stereotypes in school-age children remain unclear. This questionnaire study investigates the developmental relationship between two possible factors contributing to occupational stereotype development, perceptions of occupational gender ratio and personal beliefs about occupational competence, across the primary school years. One questionnaire assessed beliefs about the occupations held by men and women, by asking 195 children, aged 6 to 11 (UK Years 2 to 6), to report on the gender ratio of 24 occupations (e.g., who does a specific job) on a 5-point Likert scale (only males, mostly males, both, mostly females or only females). A second questionnaire assessed stereotyped attitudes by asking 194 children of comparable age to judge the competence of men and women (e.g., who can do a specific job very well) on the same scale. We found that children across age groups predominantly assigned men and women to traditionally male and female occupations, respectively, both in terms of perceived distribution and competence. However, while the perceived distribution of men and women remained stable across the sexes and age groups, stereotyped responding for competence was lower in girls than in boys, and decreased with age in both sexes for traditionally male and gender-neutral (but not for traditionally female), occupations. Some occupations which have become less gender-segregated in the workforce (e.g., Doctor, Head teacher), are also becoming more gender-balanced in children's beliefs. Taken together these results suggest that children's occupational stereotypes are influenced by developmental differences in children's understanding of gender, as well as perceptions about what jobs women and men have. We conclude by discussing practical implications for targeted interventions aimed at reducing occupational stereotyping in children.

**Keywords:** occupational stereotypes; gender stereotypes; stereotype development; perceived competence; occupational segregation

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## Introduction

Over the last 30 years, children in Western societies have consistently been found to aspire to jobs that follow traditional gender-based patterns (Franken, 1983; McGee & Stockard, 1991; Sellers, Satcher, & Comas, 1999; Chambers et al., 2018), despite egalitarian trends in the labour market (e.g., increases in dual-earner families (Blossfeld & Drobnic, 2001)), as well as the existence of anti sex discrimination employment legislation in these countries.

The extent to which occupations are seen as gender-stereotyped appears to be one of the major factors affecting career choices, with individuals mostly preferring occupations that they consider gender-appropriate (Stockard & McGee 1990). Indeed, men are less likely to choose health care, elementary education, and domestic roles (HEED), while women are underrepresented in leadership roles, and in the science, technology, engineering, and mathematical (STEM) fields (Beede et al., 2011; Leopold et al., 2016). Consequently, educators in the UK (i.e., Commission on Gender Stereotypes in Early Childhood, 2020) and other countries (i.e., Norwegian Government's Gender Equality Action Plan, 2014) have been urged to challenge gender stereotypes early, to ensure that pupils' aspirations are not limited by traditional ideas about what girls and boys can do.

Occupational stereotypes are formed early on. In a forced-choice task, Gettys and Cann (1981) asked 2.5 to 8 years olds to indicate whether a male or a female adult would be most likely to engage in 10 occupations, and found evidence of stereotyped perceptions of traditionally female and male occupations at all ages. Subsequent studies have shown that occupational gender stereotyping persists through the school years and well into in adolescence (Hewitt 1975; Miller & Budd, 1999), though there is some evidence of decreasing stereotyping with age, particularly in females (Franken, 1983; Vogler, 1994; Miller & Budd, 1999). More recently, and in line with earlier research findings, Ikonen and colleagues (2019) found that when asked whether some occupations were more suitable to men or women, Finnish ninth graders predominantly linked women to occupations in the female-dominated fields of healthcare and beauty and men to occupations in the male-dominated construction industry and firefighting. They also found that girls held more liberal views than boys. Similarly, a large-scale poll of UK children aged 4 to 8 (2018) reports that

## Development of occupational gender stereotypes in children

the majority of children still held gender stereotypical views about careers that are available to men and women (e.g., women cannot be footballers, builders or lorry drivers, and men cannot be beauticians, hairdressers or nurses).

While the available research clearly demonstrates that primary school children can reproduce occupational stereotypes associated with men and women, there is a lack of clarity in the literature about whether stereotyping is just about knowledge of occupational gender distribution (“who does a particular job”) or whether it also reflects competence stereotypes (“who can or should do a particular job”), as these two questions have often been used interchangeably (Bigler, 1997). This difference has important implications for educators in terms of designing evidence-informed interventions that target the kind of stereotyping children are subject to, and that consider children’s evolving understanding of gender. Specifically, based on cognitive perspectives on gender development (see Martin, Ruble, & Szkrybalo, 2002 for a review), we should expect questions on gender ratio and on personal beliefs about occupational competence to reveal different developmental patterns. From toddlerhood to about 7 years of age, children show very rigid beliefs (e.g., judging someone’s abilities, behaviour and interests to be inherent and appropriate to one gender, to the exclusion of the other). After this peak of rigidity, a phase of relative flexibility follows (Martin & Ruble, 2004; Signorella et al. 1993; Martin et al., 2010; Trautner et al., 2003), in line with cognitive capabilities (e.g., increase in memory capacity, complex classification skills) developing with age. Because occupational stereotypes are learnt very early in childhood, long before the capacity to critically question their validity, young children (up to about 7 years of age) are likely to provide responses to both ratio- and competence- type questions that adhere to the dominant gender stereotypes (e.g., beliefs that men and women inherently possess attributes that equip them for gender-typical roles). From about 8 years of age, however, children should be less likely to assume a causal relationship between gender-related occupational segregation in certain jobs and people’s competence in those jobs. Accordingly, they would show more flexible beliefs (e.g., that both men and women are good at any job), even if their perceptions of occupational ratio, in line with real-world occupational segregation, may not change (e.g., still perceiving that some jobs are done mostly by men or women).

However, the ways in which perceptions of occupational ratio are linked to beliefs about competence, and their broader implications for educators, remain to be examined. Our study attempts to fill this fundamental gap in the literature, by comparing developmental trajectories of perceived occupational gender segregation and competence beliefs in children aged 6 to 11. In line with previous literature, we hypothesise that, (i) from about age 8,

## Development of occupational gender stereotypes in children

children will show a decline in their gender-based perceptions of occupational competence, but not in their perceptions of occupational gender ratio, and that (ii) boys will show more fixed beliefs about occupational competence than girls.

### Methods

#### Materials

Following Bigler's (1997) observations, we used two different questionnaires with different groups of children: one questionnaire (ratio questionnaire) asked about the extent to which men or women are actually engaged in particular occupations ("who does the job of being a(n) \_\_\_\_\_?"). The other questionnaire (competence questionnaire) asked about children's gendered beliefs about competence ("who can do these jobs really well?"). Both questionnaires presented the same list of 24 occupations, 8 traditionally male, 8 traditionally female and 8 gender-neutral (see Appendix 1 - Table S1), as compiled from previous literature with adults and children (Misersky et al. 2014; Miller & Budd 1999; Wilbourn & Kee 2010, Vervecken et al. 2013; Gettys & Cann 1981; Liben et al. 2002) and archival data on true gender ratios from the UK Office for National Statistics (ONS). Each occupation was presented in a familiar typeface (Comic Sans), alongside a simplified description, as well pictorially, to aid comprehension (e.g., poet was defined as "writes poems" and clipart showed words handwritten on a piece of paper with a quill). For each occupation children were asked to mark their response on a 5-point scale, which was supplemented by graphic prompts. The scale ranged from "only women" (with four women figurines), "mostly women, some men" (three women, one man), "both women and men" (two women, two men), "mostly men, some women" (three men, one woman) and "only men" (four men). Additionally, half of the questionnaires had the left/right order of scale items reversed (from "only men" to "only women"), to counter-balance possible order effects (Gabriel et al., 2008).

#### Participants

The sample consisted of 398 children, from Years 2-6 (ages:6-11) in the UK system attending one large city primary school, and two village primary schools in Sussex. Of the original 398 children, 9 did not specify their sex and their data were therefore excluded. The final sample included 194 (105 males) who completed the occupational competence questionnaire, and 195 (102 males) who completed the ratio questionnaire (see Table 1 for a break-down of participants by Year Group and Sex). A three-stage consent procedure was

## Development of occupational gender stereotypes in children

employed. Head teachers first approved the study in each school and parental consent was then sought. Participants provided their own verbal assent on the day of the study. The study received ethics approval from the Sciences & Technology Cross-Schools Research Ethics Committee (C-REC) at the University of Sussex (Certificate ER/VC44/9).

### **Procedure**

Two classes per year group were randomly sampled in each school. One class completed the ratio questionnaire, and one class completed the competence questionnaire during Personal, Social, Health and Economic education (PSHE) lessons. The questionnaires were administered by the researchers and, for six classes (112 children), by the class teachers (after being briefed by the researchers). Instructions were read out to the class prior to completion of the questionnaire. The instructions asked children to complete the questionnaire at their own pace, in silence and by themselves, and to ask for help (e.g., if they found it hard to read or if needing clarification about the occupations) by putting their hand up. Most children completed the questionnaire unassisted. Once every child in the class had finished, questionnaires were collected, and children were de-briefed by researchers or teachers reading a standard de-briefing text.

## **Results**

### **Preliminary analyses**

Firstly, we verified the extent to which the selected occupations are still valid representatives of each stereotyped category, by conducting a frequency analysis for each occupation. Responses of “only men” and “mostly men” were grouped together and defined as male-biased, “both men and women” responses were defined as non-biased, and responses “mostly women” and “only women” were grouped together and defined as female-biased.

The results (Appendix 1 - Fig S1) revealed that most children gave the congruent response (non-biased) to all gender-neutral occupations and to most male-typed occupations (only or mostly men), with the exception of Doctor and Head-teacher, for which most children gave “both men and women” responses in both questionnaires (ratio questionnaire: 80.8%, 68.6%; competence questionnaire: 83.5%, 84.1%, respectively). Additionally, police officer and aeroplane pilot received slightly more non-biased responses than male-biased responses in the competence questionnaire (60% and 62.6%, respectively), but not in the ratio questionnaire. In the female-typed category, all occupations received most responses in the female-biased category (only or mostly women), with the exception of Secretary, for which a minority of children gave female-biased responses (ratio questionnaire: 10.8%, competence

questionnaire: 9.8%). The descriptive statistics (Mean and Standard Error) for each of the selected occupations in the two questionnaires are provided in Figure 1.

### **Exploring children's perceived occupational sex ratio and competence beliefs**

To provide a developmental account of children's perceived gender ratio and gender-based competence in adult occupations, we first conducted a four-way mixed ANOVA testing the main and interaction effects on children's ratings with questionnaire type (ratio, competence), year group (five levels: 2 to 6), and participant sex (male, female) as between-subject factors, and occupation type (female-typed, gender-neutral and male-typed) as a within-subject factor. Where differences were found between means, pairwise comparisons were used (Bonferroni corrected).

Figure 2 illustrates the mean questionnaires' ratings of boys and girls for the three occupations, according to each year group. The main ANOVA revealed a main effect of occupation type in both questionnaires (Table 2): female-typed occupations were preferentially assigned to women ( $M = 2.45, SE = .02$ ) and male-typed occupations were preferentially assigned to men ( $M = 3.61, SE = .02$ ), while gender-neutral occupations were preferentially assigned to both men and women ( $M = 3.1, SE = .01$ ),  $ps < .001$  (3 on the scale = both women and men). There was also a significant main effect of questionnaire type (Table 2), with slightly more male-biased responses in the ratio ( $M = 3.1, SE = 0.2$ ) compared to competence questionnaires ( $M = 3.0, SE = 0.2$ ) across occupation types,  $p < .05$ . While there was no significant main effect of sex,  $p > .05$ , there were significant 2-way interaction effects of occupation type with questionnaire type and sex, and 3-way interaction: in the competence questionnaire, girls' ratings were less female-biased for the female-typed occupations ( $M = 2.5, SE = 0.4$ ), and less male-biased for the male-typed occupations ( $M = 3.4, SE = 0.3$ ) than boys' (female-typed:  $M = 2.3, SE = 0.4$ ; male-typed:  $M = 3.7, SE = 0.3$ ), while no differences in ratings between the two Sexes were found in the ratio questionnaire for these occupations,  $ps > .05$ . Boys' ratings were also slightly more male-biased ( $M = 3.2, SE = 0.2$ ) than girls' ( $M = 3.1, SE = 0.3$ ) for the gender-neutral occupations in the ratio questionnaire.

There was a significant main effect of year group,  $p < .05$ . This effect was qualified by significant 2-level year group x occupation type and 3-level year group x occupation type x questionnaire type interactions. To explore these interactions, a second set of ANOVAs were run within questionnaire type, with year group as between-subject factor, on each of the occupation types (female-typed, gender-neutral and male-typed). The analyses included

## Development of occupational gender stereotypes in children

polynomial contrast analyses and post-hoc comparisons between groups (with Bonferroni correction). Inspection of polynomial contrasts revealed that children's ratings in the ratio questionnaire for the female-typed and gender-neutral occupations did not vary as a function of year group, as no significant linear or higher-order trends were found,  $ps > 0.5$ . Significant linear ( $F(1,189) = 6.1; p = .015$ ) and quadratic ( $F(1,189) = 7.7; p = .006$ ) trends in the ratio questionnaire were found between year groups for ratings of male-biased occupations. There was a reduction in male-biased ratings between Year 2 children ( $M = 3.9, SE = .03$ ) and the older age groups ( $Ms < 3.6, SEs < .04$ ),  $ps < .05$  (Figure 2 c, d), as established by post-hoc comparisons between year groups. In the competence questionnaire, there were significant linear and quadratic trends for year group on children's ratings for the male-typed (linear:  $F(1,190) = 70.1; p < .001$ ; quadratic:  $F(1,190) = 4.2; p = .003$ ) and gender-neutral occupations (linear:  $F(1,190) = 38.9; p < .001$ ; quadratic:  $F(1,190) = 7.6; p = .006$ ), with ratings for both occupation types decreasing with age (Figure 2 a,b). Additionally, post-hoc comparisons revealed a significant decrease in male-biased ratings between Year 2 children (male-typed:  $M = 4.0, SE = 0.5$ ; gender-neutral:  $M = 3.4, SE = 0.4$ ), and the older year groups (male-typed:  $Ms < 3.7, SE = 0.5$ ; gender-neutral:  $Ms < 3.3, SE = 0.4$ ),  $ps < .05$ . However, there were no significant linear or higher-order trends for year group on children's competence ratings for the female-typed occupations,  $ps > .05$ .

## Discussion

The findings extend the existing literature regarding children's understanding of adult occupational roles by exploring and comparing the developmental trajectories in elementary school children of both perceptions of occupational sex ratios and gender-related beliefs about occupational competence. In keeping with findings going back to the 1970s (e.g. Hewitt, 1975), we found that children answering both questionnaires preferentially attributed male-typed occupations to men, and female-typed occupations to women, with the youngest age group exhibiting the highest levels of stereotyped responding. However, in line with our hypotheses, ratings on the two questionnaires showed different developmental trajectories. After year 2, ratings of perceived sex ratio remained stable across year groups (with the exception of greater male-bias in year 2 children for the male-typed occupations), with slightly more male-biased responses across all occupation types. Ratings of perceived competence showed a linear decrease in male-bias with age for both the male-typed and gender-neutral occupations, though there was no corresponding reduction in the female bias

## Development of occupational gender stereotypes in children

for the female-typed occupations. From a methodological standpoint, these findings support the contention made by Bigler (1997) that competence-type questions (e.g., “who can do a job really well”) and ratio-type questions (e.g., “who does the job of being”) measure different, though related, constructs namely gender-based beliefs about occupational distribution and competence, and should not be used interchangeably. This means, for instance, that for researchers studying the developmental patterns of gender-role attitudes from childhood to adulthood, it would be more appropriate to use competence-type questions (e.g., “who can/should”), while ratio-type questions (e.g., “who does the job of being..?”) would be better suited for testing beliefs about the state of the world.

From a theoretical standpoint, the observed age-related decrease in male-biased competence ratings for the male and gender-neutral occupations is also consistent with developmental increases in stereotype flexibility found in other domains (e.g., choice of toys, activities, peers: Trautner et al., 2005), which in turn have been linked to children’s changing cognitive abilities (e.g., abilities to classify on multiple dimensions: Bigler & Liben, 1992). However, we did not observe a similar shift away from female-biased ratings for the female-typed jobs, as children continued to view women as more competent than men in female-typed occupations across the age groups. It is possible that lack of access to counter-stereotypical role models and job awareness may be reflected in these findings. For instance, while recent years have seen a relative increase of women’s visibility in male-typed roles in the UK workforce (Devine et al., 2021), in media portrayals (Smith et al., 2014), and in UK career educational programmes (e.g. Ten Steps programme, WISE 2020), there is comparative lack of male role models and career education efforts to increase male representation in female-typed careers (e.g. Chambers et al., 2018). Second, specific behaviors which are typically associated with female-typed jobs, such as caregiving, are often seen as requiring traits that are typically attributed to women (e.g., warmth: Eagly & Carli, 2003; friendliness: Wharton, 1999; helpfulness and cooperation: Cejka & Eagly, 1999). If competence in these jobs is also judged on these traits, children may rate men as less competent than women, unless men in feminine occupations take on female-like behavioral traits. Supporting this hypothesis, 8- to 10- year-olds have been found to make gender stereotypical judgments about adults’ occupational competence on the basis of their voice, rating adult speakers of both sexes with feminine (high-pitched) voices as more competent for the female occupations, compared to male-typed or gender-neutral occupation (Cartei et al., 2021).

## Development of occupational gender stereotypes in children

As predicted, while boys and girls generally agreed that the majority of male and female-typed jobs were or could be performed largely by men or women, girls' ratings of occupational competence were less stereotyped than boys'. Girls' greater liberality has also been reported in most previous studies of children's occupational stereotyping (Alpert & Breen (1989); Evelo et al., 1991), and other gender stereotyped domains, including choice of toys and activities (Killen et al. 2002). One explanation for our findings is that girls may be under less pressure than boys to conform to gender norms, as male non-conformity is usually judged more harshly than female non-conformity by peers and adults (Martin & Ruble, 2010). There is also cumulative evidence that children have awareness of occupational status, as well gender congruence (O'Briant et al., 1978; Stockard & McGee 1990; Liben, 2001; Bigler et al., 2003). Consequently, the higher social value and pay of male-dominated jobs (e.g., typically higher pay and status than female-dominated jobs), could lead girls to assign higher competence ratings for women doing men's jobs, thereby increasing their own future social and financial standing, if they decide to go into one of these occupations.

In terms of ratings for the individual occupations chosen for the questionnaires, while the children assigned the large majority of occupations in gender-congruent ways, we also observed that the traditionally masculine occupations of Doctor and Head-teacher were perceived as more gender-balanced by the children in the present sample than in past samples (Garrett et al. 1977; O'Keefe & Hyde 1983; Miller et al. 1999). It is possible that the observed reduction of a male bias for these occupations may reflect increased exposure to women participating in these jobs in our sample of primary school children, given that women constitute 66% of the primary school head-teachers in the UK and 55% of GPs (Office of National Statistics, 2019). Unexpectedly, we also found that the traditionally female-stereotyped occupation of Secretary was attributed slightly more to men than to women by children in the present study. However, this finding may be an artefact of children's unfamiliarity with the job, given its rapid decline (by 47% - UK drop between 2001 and 2013, Financial Times 2015, Mar 26), suggesting that when children are unclear about an occupation, they preferentially assign it to a specific gender (male). This androcentrism could partly reflect the sex imbalance still present in the current UK work force (in 2019, 53.2% of the total workforce was male: World Bank, 2019), as well as, despite some recent changes, a sex imbalance in the occupational portrayals of men and women in children's books and television (e.g., Hamilton et al., 2006; Fitzpatrick & McPherson, 2010; Smith et al., 2012).

### **Directions for future research**

In conclusion, these data support a conceptual and methodological distinction between children's perceptions of occupational ratio and occupational competence. Since the reported data are cross-sectional in nature, longitudinal investigations are needed to confirm the developmental trajectories of perceived ratio and beliefs about competence observed in the current study. Moreover, combining questionnaire data with implicit measures of children's stereotyping may provide additional insight into the extent to which perceptions of occupational ratio and competence are accessed and maintained with age both at the explicit and implicit levels.

From the perspective of intervention, these data support the value of directly teaching children gender inclusive criteria for determining who can perform various occupations in the early years (e.g., 6 years old and younger), as most recently advocated by several UK charities (e.g., Teach First, 2019). However, simply presenting children with counter-stereotypical models, particularly at a young age, may lead to such models be dismissed by children as atypical of their gender (e.g., subtyping: Bigler & Liben, 2006; Richards & Hewstone, 2001). Indeed this "backlash effect" may explain the limited success of these interventions in the past (reviewed in Olsson & Martiny, 2018). Thus, interventions also need to draw attention to the masculine-, feminine-, and non-stereotyped skills needed for these jobs, so that children can perceive these jobs as attainable by and compatible with their own gender. Additionally, the observed differences in competence ratings between boys and girls and between occupation types suggest that, while gender stereotypes may have weakened for girls in relation to traditionally male occupations, more work needs to be done to challenge beliefs about gender-based ability for traditionally female occupations, and particularly with boys, to show children the vast range of opportunities open to them and ensure they do not start ruling out options for themselves at young age.

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## Development of occupational gender stereotypes in children

Table 1. Year Group and Sex distribution for Ratio and Competence questionnaires.

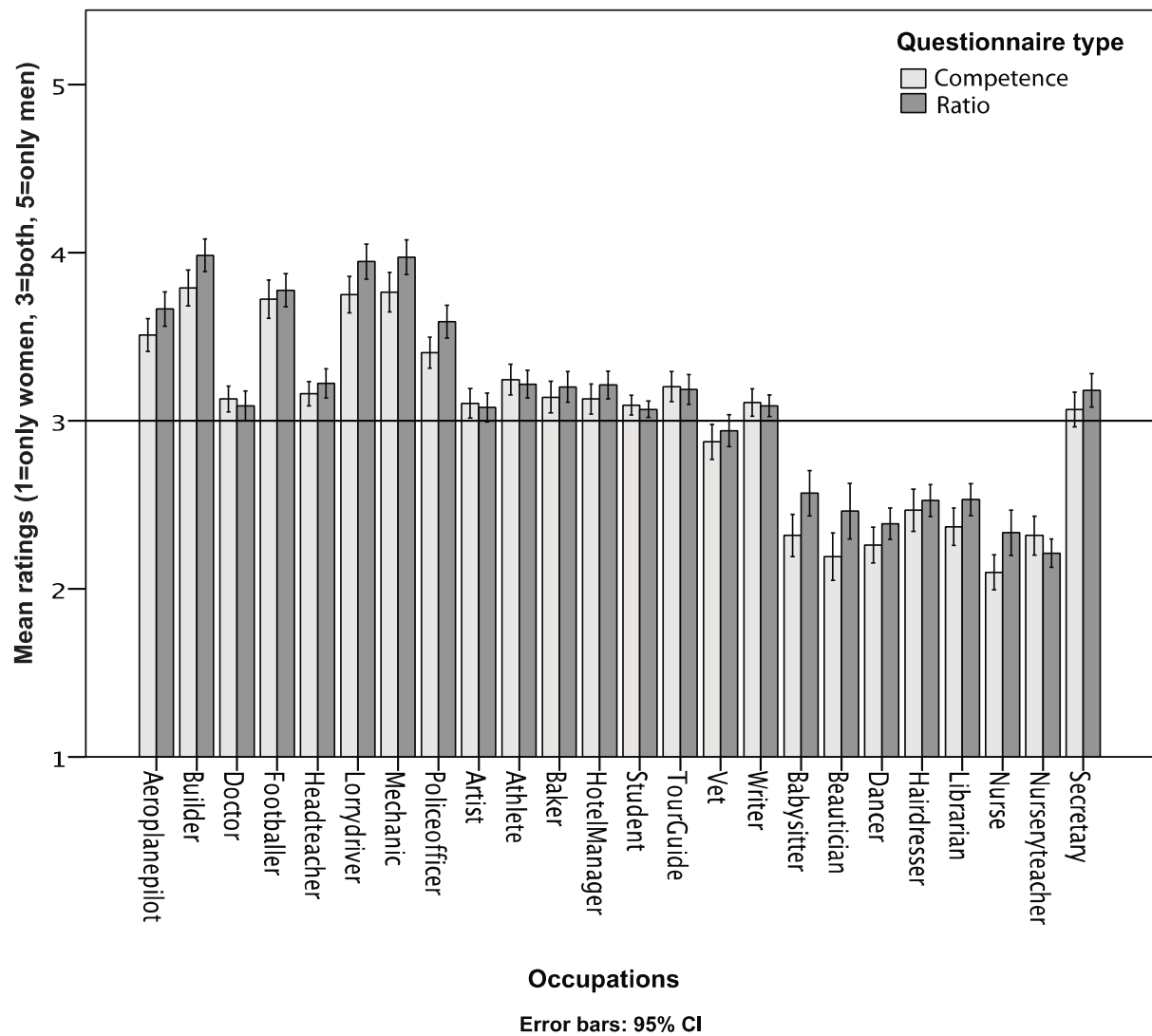
Ratio Questionnaire			Competence Questionnaire		
<u>UK YrGroup</u>	<u>Sex</u>	<u>N</u>	<u>UK YrGroup</u>	<u>Sex</u>	<u>N</u>
2	F	13	2	F	18
	M	18		M	20
<i>Total</i>		<i>31</i>	<i>Total</i>		<i>38</i>
3.00	F	11	3.00	F	16
	M	24		M	17
<i>Total</i>		<i>35</i>	<i>Total</i>		<i>33</i>
4	F	21	4.00	F	20
	M	20		M	20
<i>Total</i>		<i>41</i>	<i>Total</i>		<i>40</i>
5	F	25	5.00	F	23
	M	22		M	22
<i>Total</i>		<i>47</i>	<i>Total</i>		<i>45</i>
6	F	19	6.00	F	16
	M	21		M	23
<i>Total</i>		<i>40</i>	<i>Total</i>		<i>39</i>

## Development of occupational gender stereotypes in children

Table 2. Four-way mixed ANOVA testing the main and interaction effects on children's ratings with questionnaire type (ratio, competence), YrGroup (2 to 6), and participant Sex (male, female) as between-subject factors, and occupation type (female-typed, gender-neutral and male-typed) as within-subject factor.

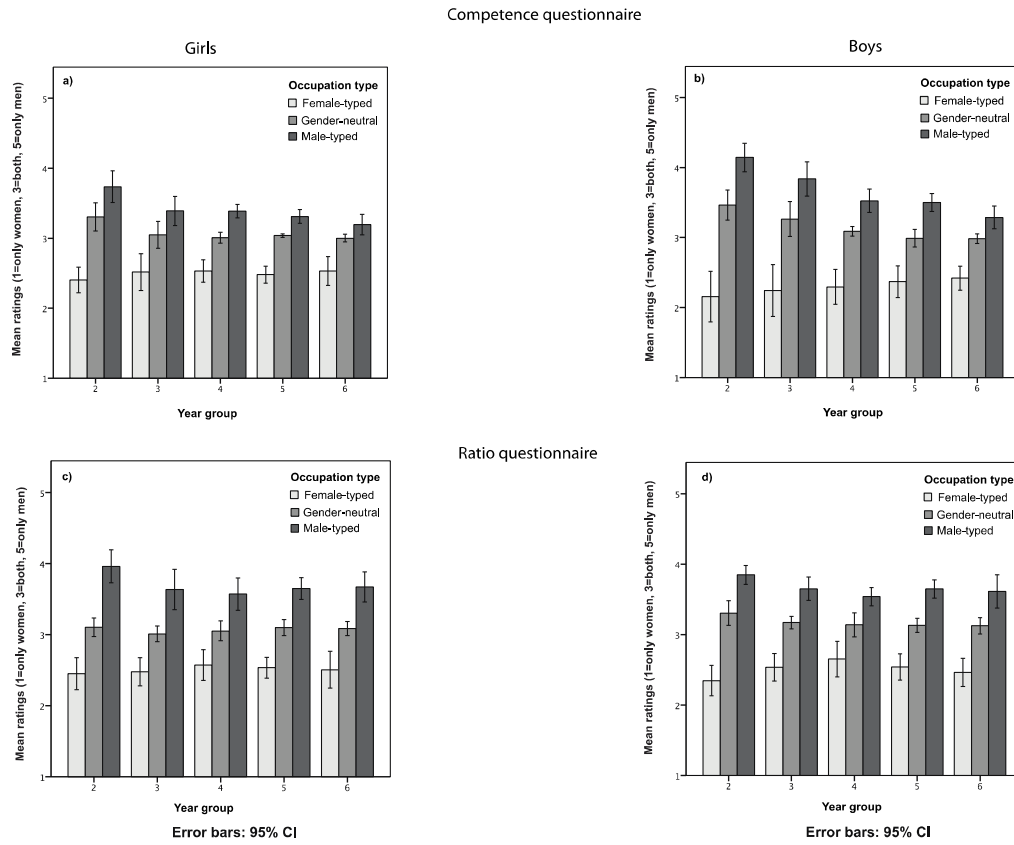
Source	SS	df	MS	F	p		Partial $\eta^2$
Occupation Type	251.06	5	125.5	932.003	<.001	**	.716
Occupation Type * Sex	2.448	9	1.536	9.088	<.001	**	.024
Occupation Type * Questionnaire Type	1.049	2	0.524	3.893	.021	*	.01
Occupation Type * YrGroup	9.487	8	1.186	8.804	<.001	**	.087
Occupation Type * Sex * QuestionnaireType	2.874	2	1.437	10.667	<.001	**	.028
Occupation Type * YrGroup * Questionnaire Type	2.115	8	0.264	1.963	.048	*	.021
OccupationType * QuestionnaireType * Sex	2.874	2	1.437	10.667	<.001	**	.028
OccupationType * YrGroup * Sex	0.835	8	0.104	0.775	.625		.008
OccupationType * QuestionnaireType * YrGroup * Sex	0.648	8	0.081	0.601	.777		.006
Error(Occupation Type)	99.402	73	0.135				
Intercept	10492.12	1	10492	60488.177	<.001	**	.994
Sex	0.316	1	0.316	1.82	.178		.007
YrGroup	4.853	4	1.213	6.995	<.001	**	.07
Questionnaire Type	2.203	1	2.203	12.699	<.001	**	.033
Sex * Questionnaire Type	0.042	1	0.042	0.243	.622		.001
YrGroup * Questionnaire Type	1.625	4	0.406	2.342	.055		.025
Error	64.006	36	0.173				

## Development of occupational gender stereotypes in children



**Figure 1.** Mean occupational ratings for each of the 21 occupations in the competence (light grey fill) and ratio (dark grey fill) questionnaires on a 5-point scale (1=“only women”, 2=“mostly women and some men”, 3=“both men and women” (black horizontal line), 4 = “mostly men and some women”, 5=“only men”).

# Development of occupational gender stereotypes in children



**Figure 2.** Boys’ and girls’ mean ratings of male-typed, gender-neutral and female-typed occupations by year group in the competence (a, b) and ratio (c,d) questionnaires.

## Development of occupational gender stereotypes in children

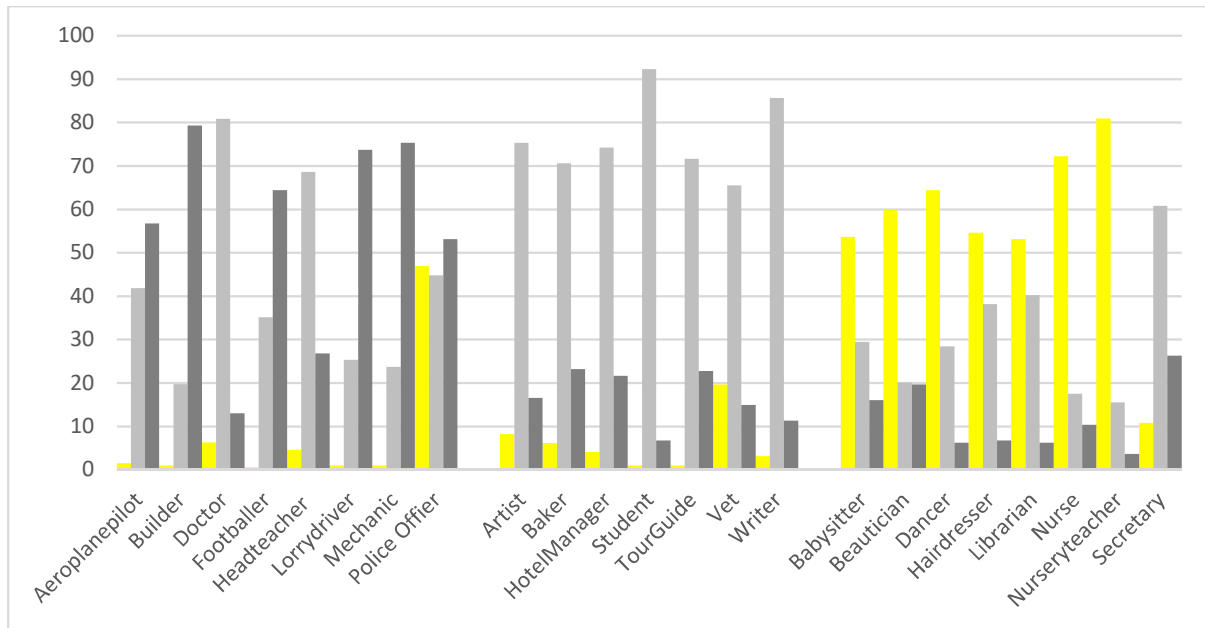
### Appendix 1

Table S1. List of job titles (original American versions indicated in brackets)

	<b>Job title</b>	<b>Description</b>	<b>Job Category (ONS)</b>
<u>Traditionally male</u>			
1	Aeroplane pilot (Airplane pilot)	flies planes	Machine operatives
2	Builder	builds houses	skilled trades
3	Doctor	cures people who are ill	Professional
4	Footballer (Soccer player)	plays professional football	sport
5	Head teacher	runs a school	Mgr and senior officials
6	Lorry driver (Truck driver)	drives lorries	Machine operatives
7	Mechanic	Fixes things like cars	skilled trades
8	Police officer	Fights crime	Service occupations
<u>Traditionally female</u>			
1	Babysitter	looks after children when parents are away	Service occupations
2	Beautician	paints nails and does make-up	skilled trades
3	Dancer	dances in performances on stage	sport
4	Hairdresser	cuts people's hair	skilled trades
5	Librarian	works in a library	Service occupations
6	Nurse	helps doctors look after patients	Professional
7	Nursery teacher (Kindergarten teacher)	teaches toddlers	Service occupations
8	Secretary	helps managers, makes phone calls, types notes	Admin
<u>Gender-neutral</u>			
1	Artist	creates art, like paintings and sculptures	skilled trades
2	Athlete	competes in sports professionally	sport
3	Baker	bakes bread and cakes	skilled trades
4	Hotel Manager	runs a hotel	Managerial
5	Student	studies at college	Other
6	Tour Guide	shows places to tourists	Service occupations
7	Vet	cares for animals	Professional
8	Writer	writes books	Professional

Occupations selected from previous studies with adults and children, and balanced, where possible, by job category according to the UK Official of National Statistics (ONS)'s categorisation.

## Development of occupational gender stereotypes in children



**Figure S1** Occupations Presented and Percentage of Children assigning them to only or mostly women (1, 2 scores – yellow bars), both Sexes (3 – light grey bars), only or mostly men (4, 5 scores- dark grey bars).