

# **What are the motivations that steer women and men towards a career in veterinary medicine?**

*Christine Fontanini  
Professor Education Sciences, University of Montpellier 3, France  
LIRDEF EA 3749*

## **Summary**

Over the past twenty years, in many European countries, feminization of veterinary studies has increased. In France, currently, women represent 72.6 % of the students enrolled in the professional training programs (EACEA, 2009).

What are women's motivations for this course of study leading to a career in veterinary medicine? Why are men leaving this profession even though forty years ago, this profession was mainly male in France?

In order to attempt to answer these questions, we carried out a questionnaire-based survey in 2008 with 119 students (90 women and 29 men), enrolled in scientific preparatory classes Biology, Chemistry, Physics and Earth sciences with the objective to enter in a veterinary school.

We can consider that this female choice is partially based on the fact that compared to boys, girls have spent more time with animals (equine or pets) during their youth and have "acquired" a certain knowledge of the veterinary profession through trainings with (male or female) professionals. We can readily speak of "early" professional socialization for girls.

We have also noted that girls wish to steer themselves towards these studies for "sentimental reasons as well as a passionate personal interest" whereas boys show motivations which are "technical or financial". The latter can be found in other professions (these characteristics do not only pertain to the veterinary profession) whereas caring for animals for "sentimental reasons and passionate interest" could be observed in few professions. We can consider that these differences in motivation between boys and girls explain male students lesser interest in the veterinary profession.

## **Short Bio :**

**Christine Fontanini** is Professor Education Sciences in the University of Montpellier in France. She's responsible for courses on gender in the 2<sup>nd</sup> year Masters's Degree program *Counselling, Training, Education* and for a Diploma of University *Consulting Equality Women-Men*.

Her researches concern essentially the educational and vocational guidance of girls and boys in the higher education in France and the hidden curriculum in the higher education.

## **Introduction**

For twenty years, in many European countries, feminization of the veterinary studies has increased. In France, actually, the girls represent 72.6 % of the students enrolled in the professional training programs (EACEA, 2009). Feminization of some highly qualified professions is generally explained by the higher success rate of the girls at school and their willingness to carry on brilliant studies.

Nevertheless, what are girl's motivations for this course of study leading to a career in veterinary medicine? Why are boys "abandoning" this profession even through 40 years ago, this profession was mainly male in France ?

We have already highlighted socialization of girls towards animals (Fontanini, 2009). Video games and toys portraying (a male or a female) veterinarian or relating to the caretaking of animals or involving equestrian riding are in fact mainly directed towards girls (Fontanini, 2008).

We hypothesize that other socialization factors contribute to this career choice, especially for girls.

### **Methodology**

In order to attempt to answer these questions, we carried out a questionnaire-based survey in 2008 with 119 students (90 girls and 29 boys), enrolled in scientific preparatory classes "Biology, Chemistry, Physics and Earth Sciences" with the objective to enter in a veterinary school. These classes were based in Toulouse, in the south west of France. These students are in majority 18 years old.

We have a small number of boys which implies that often statistic test of Chi2 rules do not apply. Comparisons of the two genders must therefore be considered with caution.

### **Short presentation of the scientific preparatory classes "Biology, Chemistry, Physics and Earth Sciences".**

In France, to become veterinary surgeon, it is necessary to prepare the exam for two years (three years if redoubling) in scientific preparatory classes "Biology, Chemistry, Physics and Earth Sciences". After these preparatory classes the exam to enter a French veterinary surgeons school is very selective as the entry success rate is only 13 % on average these last years (Report on A exams, section BCPST, 2005). One can only pass it twice in his/her lifetime with an age limit of twenty two years old for a first inscription.

The general population of students of these preparatory classes is very peculiar in the landscape of higher education. At the beginning of term in 2007, 9.5 % of the graduates in General or Technical studies integrated the first year of a Preparatory Class to access what we call in France "Une Grande Ecole", such as "Polytechnique". Most of the students are from the general section of secondary education (95.6 %) and a small amount (4.4 %) is from the technological section (Pons, 2007).

Preparatory classes welcome overwhelmingly good and very good pupils: half of them obtained a well and very well grade to their A level (Lemaire, 2008). Moreover, 18 % of the pupils joining a preparatory classes for a "Grande Ecole" are ahead of their class compared to only 3.4 % of the bachelors. The social origin of the male and female pupils in these preparatory schools is high and equal specially in scientific preparatory classes (Baudelot, Dethare, Lemaire, Rosenwald, 2003).

Girls represent 42 % of the total number of pupils in the Preparatory Classes. They are mainly in literature classes (76%), in equal number in economic and commercial classes (55%) and are in minority in scientific classes (30%). However, their ratio vary greatly according to the specific scientific section: 70% in biology, chemistry, physics and earth sciences, 27.9 % in engineering mathematical and physics sciences and only 10.8 % in physics and technological (Pons, 2007).

For the 2005-2006 scholar year, the preparatory classes "Biology, Chemistry, Physics and Earth Sciences" only welcome 12.2% of the total number of the pupils in scientific preparatory classes (Bouhia, 2006). All the pupils of this preparatory class have a scientific baccalaureat (99.7%; Bouhia, 2006).

### **Theory**

Except for their school results and their social origins, many research showed that the beginning of girls' orientation in higher education corresponds mainly with socialization of the pupils and their choice of orientation in the secondary education.

Girls and boys are not educated in the same way by families (Duru Bellat, 2004; Gautier, 2008). At school, they are confronted with a scholar construction of differences between boys and girls. According to Jacques (2003: 70), the "*girls undervalue more frequently than the boys self-evaluation of their school potential whose three indicators were highlighted: the estimate of the chances to pass successfully the A level, the choice of prestigious sections, their intentions after the A level. The factors of this undervaluing adjustment are the family socio-cultural level and the objective school value*".

The differentiated orientations toward a specific job according to the pupils gender have to be related with the representations that the youngsters associate with various professions (Mosconi & Stevanovic, 2007). These last can be regarded as "female" or "male" by knowing that "*it doesn't only relate to the fact that they are mainly invested by men or women, but also that they better fit in for one or the others on criteria of aptitudes, interests, of personality, required physical characteristics, working conditions...*" (Vouillot, 2007: 94). Thus, girls are generally more willing to choose relational jobs and jobs in which they could take care of others. Boys are more attracted by (and directed towards) scientific and technical trades.

Moreover in "scientific term" (in the last year of the preparation of the scientific baccalaureat) girls choose more than boys the speciality "earth and life sciences" (they account for 58.1% of the total number of pupils) compared to "physics and chemistry" (46.8% of girls) and mathematics (39.6% of girls) (Statistical References, 2009). This choice reduces considerably their possibilities of integrating specific sections where mathematics and physics are dominant subjects as in the preparatory classes. Thus, they choose more often studies of biology (in preparatory classes or at the university) or medicine.

Duru Bellat (1990) proposed another explanation concerning girls' orientations for a specific job. She advances that girls make realistic choices of compromise by anticipating a need for spare time. Therefore, they choose less prestigious and less fascinating careers which will enable them to work part-time or with flexible work schedules.

According to Ferrand, Imbert & Marry (1996), girls have a greater versatility in their scholar success and a bigger freedom in the studies they choose.

Our research is part of the studies on pupils orientation (Guichard, 1993; Bourdieu, 1989; Boudon, 1973; Baudelot & Establet, 1992, Boutinet, 2001), and more specifically, on girls' orientation towards scientific sections in secondary and higher education (Duru Bellat, 2004; Mosconi, 1994; Stevanovic, 2006). We are also referring to the professions' representations of male and female youngsters (Mosconi & Stevanovic, 2007).

## **Results**

- *Knowledge of veterinary surgeons and cohabitation with domestic animals*

Boys know more veterinary surgeons in their social entourage (27.6%) compared to girls (14.4%). On the other hand, girls (77%) were a little more numerous to have lived all or part of their life with at least a domestic animal compared to boys (62%). These pupils thus cohabit with more domestic animals than the average french family since 52% of homes have at least a domestic animal (Tourre Malen, 2006).

When growing up, girls and boys were as numerous as each other to be surrounded by domestic animals. Precisely, 96.7% of boys and 94.2% of girls had at least one pet during childhood; 100% of boys and 97.7% of girls had at least one domestic animal during adolescence and 90% of boys and 81% of girls have at least one pet for the current period.

Serpell (2005) had already highlighted different factors influencing the choice to become veterinary surgeon. These were: good contacts with animals during childhood and

adolescence, interests for animals and possession of dogs and/or cats. We thus make the assumption that this common life with at least a domestic animal could give them the idea to become veterinary surgeon in particular when they had to bring their own pet to a veterinary surgeon.

- Reasons to become veterinary surgeon

When asked: “*What are the main factors, according to you, that influence you to become veterinary surgeon?*” Three answers (closed) at the maximum could be chosen among ten possible answers.

Male and female pupils choose 2.6 answers on average. To answer this question, girls choose the following answers: love for animals (78.8 % compared to 62 % for boys), vocation (50% compared to 34.5% for boys) and a former experience with a veterinary surgeon (for example training course of professional discovery; 35.4% compared to 22% for the boys). In first, boys choose interest for medicine and surgery (41.3 % compared to 28.8% for girls) as an answer, followed by attraction for a greater income (31% compared to 6.6% girls). These differences are significant ( $\chi^2=21.13$ ).

Therefore, girls have more reasons than one can qualify as “emotional ones” and considered choices; whereas boys choose “technical” and financial explanations. Other reasons were chosen in proportions very close to each other between pupils to the two genders: attraction for the rural world, attraction for research and interest for human relations.

The will to become a veterinary surgeon hasn't occur by chance, nor has it emerged through a theoretical thinking or a phantasm because of the sheer number of pupils, most of them girls, who had at least a training course in a private veterinary surgeon clinic (training course during the last class of the college and/or over school times holidays...).

A female student wrote :”*My various training courses in a veterinary surgery really enabled me to know that it is what I wanted to do with a clear preference for the surgery and the use of new technologies (celioscopy, laser, TV-surgery)*”.

Another female student who worked frequently part time in a veterinary surgery expressed his enthusiasm to become a veterinary surgeon:” *I find wonderful the fact to go to the farms and to help the farmers, to be in the mud, to cure animals, to listen to farmers or pet owners.*”

Another female student noted :” *I want to become a veterinary surgeon for the wildlife in order to make up for the damage caused by humans (poaching...). I want to be a veterinary surgeon in Africa. I met one in a village in the bush in Cameroun.*”

- Professional representations

The following question was in the questionnaire: “*Indicate two spheres of activities that you consider at the exit of the veterinary surgeon school among the following proposals*”. We wanted to know whether the students wishing to enter a veterinary surgeon school had already considered specific spheres of activity as veterinary surgeon and which one. Male and female students gave on average as many answers: 1.7 for the girls and 1.8 for the boys. Significant differences between the two genders were found among the students projects ( $\chi^2=15.29$ ).

Girls are more attracted than boys by the following specialities:

- equine specialty (difference of 24.2 points : 31.1% for girls and 6.9% for boys);
- humanitarian action (difference of 16.7 points : 24.4% for girls and 7.7% for boys).

Boys are more interested by these activities:

- mixed medicine: pets + farm animals + equine (difference of 14 points: 44.8% boys and 31.1% girls);
- rural medicine (difference of 12 points : 20.7% boys and 8.9% girls).

Male and female students are equally interested by the specialization concerning “pets”, “teaching/research” and “wild fauna”.

Contrary to boys it was found that a large proportion of girls was attracted by equine medicine. This difference was also observed in the first year students from the schools (Sans & Darré, 2007).

After these results, it is necessary to highlight the strong feeling that female students have for riding in the group of students wishing to take care of animals. This result may be in relation of a higher proportion of female riders compared to male riders (Tourre Malen, 2006). Furthermore, a recent study has highlighted a correlation between the aspiration of female riders to practice a veterinary career and equestrian riding (Fontanini, 2010). However, equestrian riding conveys more than just a good relationship with horses. It leads to the caring of animals which can instigate a professional vocation oriented towards animals or horses care.

We can hypothesize that equestrian clubs are true breeding grounds for future veterinarians. Considering that for the past twenty years there are more girls than boys that ride, it is logical to ascertain that girls are more attracted to veterinary profession.

Pupils were invited “*to note the first 4 words (nouns, verbs, adjectives, expressions) which came to their mind when the word veterinary was used*”. The objective was to have a better understanding of their representations related to the job of veterinary surgeon. Girls gave a slightly lower amount of words (2.85 on average) compared to boys (3.37).

Pupils quoted terms related to technical skills (medicine, surgery, care) but very few related to fields of activity (only rural medicine was named). Lot of the words used relate to their enthusiasm for the profession (love, passion, respect, animal, human contact...).

Significant differences between girls’ and boys’ answers were found ( $\chi^2=30.24$ ). Male and female pupils quoted equally and occasionally (between 5 and 15%): help/utility, medicine, surgery, nature, horse, difficult studies, dreamed job and rural medicine. When compared to girls, boys used more often words such as : animal (difference of 10 points), heal (difference of 14 points), money (difference of 12 points) and private sector (difference of 10 points).

As for them, girls, more often noted love, passion and respect (difference of 25 points) and contact with other human beings (difference of 8 points) when compared to boys. Once more, girls appear to put forward emotional reasons and passion to explain their choice to become veterinary surgeon when compared to boys. These feelings towards animals are probably related to their numerous contacts for some of them with horses, for a vast majority with domestic animals and with habits that young girls got when playing with animals by the means of toys, games, magazines and books (Fontanini, 2010).

It was found, once more, as in many other studies, that girls have a lesser propensity than boys to choose a profession for its financial advantages. Despite the increasing proportion of women at work and at University for more than thirty years, the economic model of the “breadwinner” (the man, principal provider of resources) advanced by Parsons in the 1950s has persisted. Girls keep choosing a profession more for their personal interests in it (taste, aptitude) than for the income it might procure them (Veleine, 2004). This difference between the two genders is built upon education and contacts they have with different kind of people. In general, women are still supposed to take care of the children and men are still supposed to be more interested by their work.

It is possible that this project where women are more involved comes owing to the fact that compared to boys; girls shared their life with an animal (equine and/or domestic) during their life for a longer period of time. It comes also from the fact that women “acquired” some knowledge of a veterinary surgeon’ work from their training courses in a veterinary surgery. It is possible to speak about “early” professional socialization for girls as compared to boys.

#### Were the pupils interested by other field of study?

One question was to check whether pupils had been interested by another field of study other than veterinary surgeon and if that had been the case, if they could specify which one.

A significant nuance first of all is located ( $\chi^2=5.12$ ): about half of girls (46.9%) was not attracted by other fields whereas it is the case from only 28% boys. A significant difference ( $\chi^2=5.12$ ) can be seen quite rapidly : about half of the female students (46.9%) weren't interested by another field of activity whereas this percentage was only 28% for male students.

Once again, it can be assumed that girls had a school and professional project much more precise than boys and to succeed in it, they had to enter a preparatory Biology, Chemistry, Physics and Earth Sciences classes.

Among male and female pupils who were attracted by other activities various choices were quoted in close proportions. Among male pupils, other field of study like preparatory classes and technical classes such as IUT/BTS are found more interesting. Being accepted in preparatory Biology, Chemistry, Physics and Earth Sciences classes is the most important reason that decided them to choose this field of activity.

### Other fields of study

Gender	Boys	Girls	Total
<b>Other fields of study</b>			
No reply	28 % (14)	46.9 % (53)	41.1 % (67)
Medicine/Pharmacy/Dental Studies	22 % (11)	21.2 % (24)	21.5 % (35)
S.T.S (Sciences and Technical Studies)	26 % (13)	15.9 % (18)	19 % (31)
University of Science	8 % (4)	7.1 % (8)	13.5 % (22)
Other Universities	4 % (2)	1.8 % (2)	7.4 % (12)
Other choice	10 % (5)	12.4 % (14)	11.7 % (19)
Total	100 % (60)	100 % (130)	100 % (190)

$\chi^2$  non significant.

The amount of answers is higher than the amount of pupils because each pupil could choose more than one answer. For example, for S.T.S; 13 boys out of 50 choose this answer, that is 26% of boys.

### Conclusion and further work

We can consider that this female choice is partially based on the fact that compared to boys, girls have spent more time with animals (equine or pets) during their life and have "acquired" a certain knowledge of the veterinary profession through trainings with (male or female) professionals. We can readily speak of "early" professional socialization for girls.

We have also noted that girls wish to steer themselves towards these studies for "sentimental reasons as well as a passionate personal interest" whereas boys show motivations which are "technical or financial", The latter can be found in other professions (these characteristics do not only pertain to the veterinary profession) whereas caring for animals for "sentimental reasons and passionate interest" could be found in a few professions. We can consider that these differences in motivation between boys and girls explain male students lesser interest in the veterinary profession.

Other reasons might explain this choice. One can think that girls are more attracted to biology compared to boys (Veleine, 2004) and that is the reason why female pupils choose this highly prestigious field of study. In addition, parents are probably happier to push excellent girls to carry on with preparatory Biology, Chemistry, Physics and Earth Sciences classes whereas excellent boys are influenced to move towards mathematical and Physics preparatory classes (Ferrand, Imbert & Marry, 1996).

It is sure difficult to estimate the influence of these extracurricular activities for adolescents on girls choosing veterinary medicine as a career. It's the reason why we want to interview

male and female veterinary surgeon in exercise to find out what are the motives that pushed them to become veterinary surgeon.

In any case, if we add to these results, the socialization of girls towards animals through toys, games, magazines, and books, there are grounds to believe that there will be more and more women signing up for veterinary school entrance exams.

### **Bibliography**

- Baudelot C., Dethare, B., Lemaire, S. & Rosenwald, F. (2003). Les CPGE au fil du temps. *Colloque Démocratie, classes préparatoires et grandes écoles*. ENS, 16 et 17 mai.
- Bouhia, R. (2006). Les étudiants en classes préparatoires aux grandes écoles. *Note d'information* n° 06-23, MESNR.
- Boudon, R. (1973). *L'inégalité des chances - La mobilité sociale dans les sociétés industrielles*, Paris : Armand Colin.
- Bourdieu, P. (1989). *Noblesse d'Etat et esprit de corps*. Paris : Minuit.
- Boutinet, J.P. (2001). *Anthropologie du projet*. Paris : PUF 6<sup>e</sup> édition.
- Duru Bellat, M. (2004). *L'école des filles. Quelle formation pour quels rôles sociaux ?* Paris : L'Harmattan.
- EACEA (2009). *Différence entre les genres en matière de réussite scolaire : étude sur les mesures prises et la situation en Europe – France*. Commission européenne, Eurydice
- Ferrand, M., Imbert F., Marry, C. (1996), « Femmes et sciences : une équation improbable ? L'exemple des normaliennes scientifiques et des polytechniciennes », *Formation Emploi*, n°55, p. 3-18.
- Fontanini, C. (2008). Jeux vidéo et jouets : un lien avec la féminisation du métier vétérinaire ? *Les Cahiers du CERFEE* n°25, pp. 147-165.
- Fontanini, C. (2009). La socialisation des filles vers le monde des animaux. *Congrès de la SFP Toulouse 2009 : « Psychologie et enjeux de société »*, Université Toulouse le Mirail, 17-19 juin.
- Fontanini, C. (2010). Presse et livres de jeunesse pour filles et adolescents, pratique de l'équitation : un lien avec la féminisation du métier de vétérinaire? In *Genre et socialisation de l'enfance à l'âge adulte*, (sous la dir. V. Rouyer, S. Croity-Belz & Y. Preteur), Toulouse : Eres
- Gauthier, G. (2008). *Orientation et insertion professionnelle : vers un rééquilibrage entre femmes et hommes dans tous les métiers*. Rapport d'activité Sénat n°404. Annexe au procès-verbal de la séance du 18 juin.
- Guichard, J. (1993). *L'école et les représentations d'avenir des adolescents*. Paris : PUF.
- Jacques, M.H. (2003). Garçons et filles de classes terminales : le filtre sexué des représentations du cursus et des intentions d'orientation post-baccalauréat. *Carrefours de l'éducation*, 15, janvier-juin, p. 62-81.
- Lemaire, S. (2008). Disparités d'accès et parcours en classes préparatoires. *Note d'information* 08-16, MESR
- Mosconi, N. (1994). *Femmes et savoir - La société, l'école et la division sexuelle des savoirs*, Paris : L'Harmattan, 1994.
- Mosconi, N. & Stevanovic, B. (2007). *Genre et avenir. Les représentations des métiers chez les adolescentes et les adolescents*. Paris : L'Harmattan.
- Pons (2007). Les étudiants en classe préparatoire aux grandes écoles. *Note d'information* 07-37, MESR.
- Report on A exams, section BCPST (2005). [www.concours-agro-veto.net](http://www.concours-agro-veto.net)
- Sans, P. & Darré, R. (2007). Les représentations et motivations des étudiants et des étudiantes en 1<sup>ère</sup> année d'école d'ingénieur-e ou vétérinaire. *Un=Une, Lettre du réseau « Egalité des chances entre les femmes et les hommes dans l'enseignement supérieur agricole »*, n°6, mai, Ministère de l'agriculture et de la pêche.
- Serpell J.A. Factors influencing veterinary students' career choices and attitudes to animals. *Journal veterinary Medical Education* 32 (4), 491-496, 2005
- Stevanovic, B. (2006). *La mixité dans les écoles d'ingénieurs*. Paris : l'Harmattan.
- Tourre-Malen C. *Femmes à cheval*. Paris : Belin, 2006.

- Veleine, C. (2004). *L'égalité des chances entre les filles et les garçons : la première insertion professionnelle des ingénieurs agronomes*. Rapport à la DGER, Ministère de l'agriculture, de l'alimentation, de la pêche et de la ruralité, décembre.
- Vouillot, F. (2007). L'orientation aux prises avec le genre. *Travail, genre et sociétés*, n°18, novembre.