

Women and “making science”: an analysis of comedy films used in pharmaceutical education

A mulher e o “fazer ciência”: uma análise de filmes de comédia no ensino farmacêutico

Lêda Glicério Mendonça^{1,2,3}
Lucia de La Rocque¹

¹ Instituto Oswaldo Cruz, Fundação Oswaldo Cruz, Programa de Pós-graduação Stricto Sensu em Ensino em Biotecnologia e Saúde. Rio de Janeiro-RJ, Brasil.

² Instituto Federal de Educação, Ciência e Tecnologia do Rio de Janeiro, Curso de Farmácia e de Especialização em Educação e Divulgação Científica. Rio de Janeiro-RJ, Brasil.

³ Universidade de Coimbra, Faculdade de Letras, Programa de Doutorado em Estudos Feministas. Coimbra – Portugal.

Correspondence

Lêda Glicério Mendonça
leda.mendonca@ifrr.edu.br

Abstract

This paper discusses the representation of women in five comedy films and the absence of women in the scientific field; these films were used as subsidies for a study case used in support of Deontology teaching. The films selected for this case study were: “Monkey Business” (1952); “The Nutty Professor” (1963); “Junior” (1994); “The Nutty Professor” (1996) and “Senseless” (1998). The films were centered around experiments with therapeutic substances, in which the scientist responsible for the research was always a man. When the resolution of the case study was presented to students, even though most of them were women, they did not realize this situation except when they were made aware of it. This shows that even potential scientists perceive the underrepresentation of women in science as natural. The feminist concept within film critique, called “Male gaze,” and other references for techno-scientific relations were used as a basis for the debate. The analysis of the films showed that although they have been produced within a timeframe of 46 years, women were still portrayed as passive and were excluded from important positions by hierarchization and oppression mechanisms. Thus, comedy films can contribute to humanistic education, which is a goal of the current National Curriculum Guidelines for Pharmacy, particularly focused on making students aware that drug development is also a role to be played by women pharmacists.

Keywords: Pharmaceutical Education. Comedy Film. Feminist Criticism. Science and Art. Male Gaze.

Resumo

O artigo busca entender a representação das mulheres, e sua ausência no campo científico, em cinco filmes de comédia que foram utilizados como subsídio para um estudo de caso em apoio ao ensino de Deontologia Farmacêutica. Os filmes selecionados foram: “*O inventor da mocidade*” (1952), “*O professor aloprado*” (1963), “*Junior*” (1994), “*O professor aloprado*” (1996) e “*Sem sentido*” (1998). Os filmes foram centrados em experimentos com substâncias terapêuticas, nos quais o cientista responsável pela pesquisa era sempre um homem. Durante a apresentação da resolução do estudo de caso observou-se que, mesmo a maioria dos alunos sendo mulheres, estas não percebiam tal fato, salvo quando alertadas. Isso pode indicar que potenciais cientistas percebem como natural a menor representatividade da mulher nas ciências. O caminho encontrado para balizar a discussão repousa na crítica feminista cinematográfica denominada “*Male gaze*” e em outros referenciais nas relações de tecnociências. A análise dos filmes demonstrou que, apesar de produzidos em um intervalo de 46 anos, neles as mulheres foram retratadas de forma passiva e excluídas dos espaços de destaque por mecanismos de hierarquização e opressão. Assim, o cinema de comédia pode contribuir na formação humanística, almejada pelas atuais Diretrizes Curriculares Nacionais de Farmácia, com atenção especial voltada para conscientizar a categoria de que o posto de cientista do medicamento é também de protagonismo da mulher farmacêutica.

Palavras-chave: Ensino Farmacêutico. Cinema de Comédia. Crítica Feminista. Ciência e Arte. *Male Gaze*.

Introduction

This article both seeks to understand the mechanisms that have relegated women to the background of doing science and turns to such representation in five (U.S. film industry) Hollywood comedy films that have been used to support a case study applied in teaching of Pharmaceutical Deontology.

Deontology is the list of objective determinations, operational and practical instructions that the members of a professional group must follow in the exercise of their activities to guarantee uniformity, in all its aspects and sites, of the group’s work and action, as if it were the action of a single individual.¹ The main object of teaching Deontology, therefore, is to problematize the

application of laws concerning the conduct of professionals, but should not be restricted to this. It needs to go further and bring up a reflection on ethical principles. Students must understand the difference between ethics and morality, between duty and law, between individual and collective law, and among differences of class, ethnicity, gender and culture, in order to be able to think about their future professional conduct and its implications in society.

The movies selected for the case study were: “*Monkey Business*” (1952); “*The Nutty Professor*” (1963); “*Junior*” (1994); “*The Nutty Professor*” (1996) and “*Senseless*” (1998).

Although the first focus in using these movies in the classroom had been to raise discussions about the situations involving experimentation with therapeutic substances and the whole legal framework that this demands, it was evident at the time of screening the movies that in the screenplays women were in a subordinate position towards men, especially in the act of “doing science.” This circumstance has motivated the reflection that is presented here and should not be separated from discussions about pharmaceutical professionals’ ethical conduct. Other issues have appeared throughout the pedagogical practice application but the focus of this work was the discussion of gender relations.

Women in movies are usually represented according to a stereotype, necessarily referring to categorization phenomena, which can also be analyzed as elements of social representation.² Arruda³ makes an interesting conceptual parallel between Social Representation Theories (SRT) and Feminism, since both are intended to reveal and/or conceptualize aspects of objects hitherto undervalued by science, considered as minor (women and common sense), demystifying such hierarchization. In this way, one participates in the other when it comes to analyzing the representation of women in different contexts.

Women are in the movies to complete the meaning of stories and appear, most of the time, in a passive attitude towards events and as an “objectification” of male desire. The main plots are, in the case of the five movies, based on the male character. There are many feminist critique arguments to analyze and explain such situation. Movies feminist theory has had and has great importance both in feminist movements and in film studies, founding a new perspective of analysis whose approaches accompany the questions and studies of gender.⁴

In Feminist Studies, there are many theoretical approaches to discussing the representation of women in artistic expressions, such as: identifying the ways in which “femininity” is evidenced in representation; creating or transforming hierarchical structures of domination; producing a cultural practice that resists the positioning of women as a spectacle or an object of the male gaze⁵ – the latter two are the points of greatest interest in this text. With regard to the exclusion of women in science, it is possible to think of the hierarchical structures of domination. And as for the representation of passive women, one takes into account the “woman as a spectacle” in male gaze.

As for the exclusion of women in science, there are several works that blur the topic. There are those who seek statistics to demonstrate inequality⁶⁻⁸; those that deal with the biological determinism that considers women incapable of performing logical reasoning tasks, which would have been related, over time, to being seen as faulty men, having smaller brains or because of the reproductive functions that, consequently, would divert study time into care for offspring.⁹⁻¹¹ And there is a historical construction that reinforces a hierarchization between the sexes and women's subaltern roles.

In the present day, we still feel the reflexes of Ancient Greece in relation to the philosophical conceptions of the representations of the feminine, which have led to think of the feminine as a derivative and, consequently, women as the second sex, throughout the Western tradition.¹² There is even a prevailing thought that women in the modern capitalist world still do not own their own body and mind and when this occurs it is at great risk.¹³

Other issues also explain the exclusion of women in the scientific field or the academy. In the early 1980s, Margaret Rossiter proposed two concepts that broaden the meaning of the glass ceiling phenomenon: hierarchical segregation, a phenomenon in which, as one ascends the ladder of power and prestige, fewer and fewer women are viewed. And territorial segregation, a phenomenon in which women tend to cluster in areas of less prestige and lower remuneration, responsibilities related to caring for others, and that replicate the home tasks, such as teaching, nursing and nutrition.⁹

The so-called "glass roof" phenomenon is characterized by women's professional rise to a certain point. When reaching higher positions, higher visibility or decision-making positions, there is an invisible barrier preventing them from going up. However, there is the opposite of this, which further increases inequality: it is the phenomenon called glass escalator, a situation in which men progress faster and with less qualification than women, especially in areas where there is female predominance.¹⁴

With respect to "women as spectacle" there is, in this field, an important movement evoked by Mulvey¹⁵ and expanded by Kaplan¹⁶ that rests on the feminist cinematographic critique and analyzes the representation of women taking as support Freudian and Lacanian psychoanalysis. They defend the fact that women are mostly represented erotically, in a passive attitude, under a male gaze.

On the *male gaze*, Laura Mulvey states that women are represented in two levels: as erotic objects inherent in the script itself and as erotic objects for the spectators' eyes, sharing a tension on both sides of the screen. Ann Kaplan¹⁶ states that "in Hollywood movies women are denied an active voice and a speech. In silence, they live frustrated lives or, if they resist this condition, sacrifice their lives for such boldness."

Returning to the movies in question, women take on a secondary position in relation to the male protagonists. Of the five movies cited, the only one that does not follow this pattern so clearly is *Junior* (1994), in which there is a reversal of biologically determined social roles. The movies present a gradual increase of women’s participation in professional fields, according to the chronology in which they were produced and conceived. However, in most movies the erotization of females’ images remains. Therefore, the analysis shall be divided into historical time periods: *Monkey Business* (1952) set in the post-World War II period; *The Nutty Professor* (1963), in the period of the (state of geopolitical tension) Cold War; and *Junior* (1994), *The Nutty Professor* (1996) and *Senseless* (1998), in the 1990s, an era of great technological advances and the collapse of communism.¹⁷

Making a temporal parallel of how women were portrayed in the movies from the perspective of feminist theories, it should be noted that fiction reflects the behaviors and thoughts practiced in reality: *Monkey Business* (1952) was filmed in the transition between the first generation of feminism (First-wave feminism or First Wave), which represented the emergence of the feminist movement, which would fight for equal civil, political and educational rights, reserved only for men, and the second generation (Second-wave feminism or Second Wave). *The Nutty Professor* (1963) was produced in the second phase of feminism, which emerged in the 1960s and 1970s, especially in the United States and France. American feminists emphasized the denunciation of male oppression and the pursuit of equality. Movies *Junior* (1994), *The Nutty Professor* (1996) and *Senseless* (1998) were screened in the Third-wave feminism or Third Wave, whose proposal focuses on the analysis of differences, otherness, diversity and discursive production of subjectivity.¹⁸

Perception of women’s image by spectators and by themselves

The use of comedy movies in contribution to teaching Pharmaceutical Deontology in this context had already been practiced since 2008. Over time, it was noticed that students, when presenting the results of the case study, were restricted only to respond to the proposed script, probably due to the short time allocated to the course (30 hours/class) compared to the course total workload (5,103 hours/class).

The pedagogical practice presented here was conducted in four classes, two in 2012 (here called 1-2012 and 2-2012, respectively) and two in 2013 (here called 1-2013 and 2-2013, respectively). The five movies were watched by the four groups as shown in Table 1.

Table 1. Case study application timeline based on comedy films

Movie title	School class 1-2012	School class 2-2012	School class 1-2013	School class 2-2013
<i>Monkey Business (1952)</i>		x	x	
<i>The Nutty Professor (1963)</i>			x	X
<i>Junior (1994)</i>	x	x	x	
<i>The Nutty Professor (1996)</i>			x	x
<i>Senseless (1998)</i>	x		x	x

The classes in which the movies were shown were constituted as follows: 1-2012 class – 28 students (3 men and 25 women); 2-2012 class – 9 students (2 men and 7 women); 1-2013 class – 33 students (4 men and 29 women); 2-2013 class – 13 students (3 men and 10 women). These numbers show that the classes are mostly females’.

The students, in presenting the resolution of their case studies, supported by the movies plots, would not extend to topics that are evident in the movies, such as: why isn’t the scientist who experimented with therapeutic substances a pharmacist? Why don’t women play a decisive role in events? Why isn’t the experiment conducted by a woman?

These questions would always be raised by the professor after the students’ presentation, broadening the discussions inherent to the subject matter, the last two questions being the most interesting in this work. Unfortunately, because the subject matter had a small workload in relation to the course total, the students usually would stop to respond to the script of the case study, without enough time for a more refined reflection or ample discussion. What struck us as strange was the fact that even though there were 71 women in a universe of 83 students, none of them realized that the experiment had not been conducted by any woman or at least questioned that.

Data provided by the Brazilian National Federation of Pharmacists extracted in mid-2012 indicate that, at that moment, there were about 370 thousand registered and active pharmacists in Brazil, and that women represented 70% of these professionals.¹⁹ From the moment the situation was exposed by the professor, the students would notice it. This suggests to us that the situation is so enthroned in a social collective that the female absence in science is already naturalized, is part of common sense, which is reflected in fiction and in the media, returning in turn to the audience, closing a “vicious circle.”

Mulvey¹⁵ and Kaplan¹⁶ criticize the classic narrative cinema, considering that this one has explored women as erotic objects to be contemplated by male gaze. Mulvey¹⁵ reports that what has led her to interpret the eroticized and passive portrayal of women in Hollywood movies was her participation in a reading group on Freudian psychoanalysis because Freud had developed theories on the sexuality of women based on the principles of a patriarchal society. She appropriated, then, Freudian concepts such as scopophilia and voyeurism, to try to understand the male gaze.

Psychoanalysis is used not only to deepen a cinematographic analysis but to analyze a dominant phallographic discourse based on a sexual difference that supports the truth of all science, the logic of the whole discourse. Women function as the “other,” without a voice that only exists and is represented by the masculine.²⁰ The “other,” the “different” is considered a flawed being, therefore without voice or initiative to make the decisions ahead.

Kaplan has focused her work on the analysis of movies produced in Hollywood, largely demonstrating the ways in which patriarchal myths function to situate women as silent, absent, and marginal. Even though the movies mentioned in this work have been produced in three distinct temporal spaces, passivity and feminine subaltern roles persist, as shall be seen below.

The post-World War II and the “Queen of the home”

The first film to be addressed here is *Monkey Business* (1952), produced a few years after the end of World War II. Wartime social context meant that there was a need for female labor in terms of jobs, replacing men who had gone to the front. With the end of the war, the men who survived returned to their jobs, reactivating the ideology that valued the difference of roles by gender, leaving the domestic ground to women.

The access of women to the scientific field in the United States was still hampered by a law would release studies in higher cycles with payment of annuities to war veterans.⁹ Added to this, postwar American capitalism, with its promise of prosperity and consumption of durable goods, popularized the American way of life, which would reinforce women’s image as queens of the home in messages conveyed by the media, even in the movies. This retrogression led to the emergence of a new type of feminism in the following years, Second-wave feminism or Second Wave⁴, which launched women’s struggle for greater space in society.

For better understanding, the movie plot is described below: Dr. Fulton (Cary Grant), married to Edwina (Ginger Rogers), is a researcher at Oxly chemical company and is developing and testing on monkeys a product intended to function as an elixir of youth titled “B-4.” One day a monkey gets loose from captivity and randomly mixes substances, creating the much desired product.

Accidentally, the mix made by the monkey is poured into the lab's drinking fountain and everyone in the company drinks from the contaminated water, experiencing all kinds of effect and confusion.

It is interesting to note that in the film *Monkey Business* women are totally excluded from the scientific environment and decisions. In the laboratory where the experiment is conducted, only men work. The idea presented in the film is that if Dr. Fulton would discover the formula of youth he would be aspiring to win a Nobel Prize. Looking for historical references⁸ when talking about a male science, a reasonable indicator could be the very small number of women who have won the (set of annual international awards) Nobel Prize. They are only 16 among the Sciences laureates (two in Physics, four in Chemistry and ten in Medicine and Physiology; of these, only three are women).

In the film there are two female characters who help in the plot. One of them is Edwina Fulton, the scientist's wife, and he is the leading character in the plot. The other one is Lois Laurel (Marilyn Monroe), the secretary of the owner of Oxly chemical company. The first one, Edwina, is represented as the "queen of the home" and always comes to the aid of her husband. Even if she has a solid background in science, which is convenient for preparing the wife of a great scientist, she does not practice the profession, but is restricted to domestic activities and helps her husband when necessary. The other character, starred by (Marilyn Monroe (American actress and model) Marilyn Monroe, is represented in an eroticized fashion, since only her physical attributes are evidenced. Her intellectuality, on the contrary, is questioned at all times.

As for Marilyn and Hollywood movies, Kaplan has pointed out that in the 1950s movies were interesting because they would show old codes collapsing. Sexuality was floundering everywhere but it was not recognized. In the 1950s, the fear of sexuality seemed repressed. Therefore it would overflow everywhere, especially in actresses like Marilyn Monroe and (American film and television actress) Natalie Wood, comparing to (German actress and singer) Marlene Dietrich, (American actress and singer) Lauren Bacall or (American actress and dancer) Rita Hayworth.

Based on the characters portrayed in the film, with regard to subaltern roles and exclusion in the scientific field, women have always been present in the course of humanity, including in the field of sciences. But their participation would either be denied or erased, since political, social and cultural mechanisms categorizing them as incapable of developing scientific activity would be created.²¹ In the case of Edwina, it would be the pressure of her social condition. She had been properly educated to support her scientist husband and her intellectual attributes should be used only for the maintenance of her family. In the case of Lois, because of her humble beginnings, she would have to submit to working to support herself but she would not be able to reach a leading position in the world of work because she was a woman. Only a subaltern position as a secretary would remain.

As in Western society women are seen as the “other,” the difference in itself already establishes and implies a hierarchy, as can be seen, for example, in women’s long journey in search of citizenship and economic autonomy in the twentieth century, in the U.S.: due to not being men, often they would be and still are prevented from reaching certain job positions.¹³

At the height of the cold war

The second film to be dealt with is going to be *The Nutty Professor* (1963), which was produced and released in the first half of the Cold War, in which the planet was in a theoretical state of peace but with an imminent preparation for war to erupt between the United States and the Soviet Union. Thus, in the period when the arms race was established, exercising military and scientific professions would require a “certain insanity” to promote the technological development that would contribute to the war without it being openly revealed.²²

From this comes a period of encouragement for scientific training. In the United States, Title VII of the Civil Rights Act (later enforced by the Equal Employment Opportunity Act, 1972) prohibited discrimination based on gender in education and employment. In this technological frenzy, many women have gained ground in the scientific field.

Contemporary cinema, of course, went much further than the (stylish Hollywood crime dramas) film noir in the explicit representation of female sexuality. The causes that have led to this are well known: the numerous 1960s movements produced radical cultural changes that loosened the rigid puritan codes.

An ostensible display of female sexuality has been a threat to patriarchy and required a much greater level of objectivity about the underlying causes of women being relegated to absence, silence and marginalization... Patriarchal fears no longer work in this post-1960s era: sexual women can no longer be labeled “evil,” since they have acquired the right to be “hot” and sexual.¹⁶

Because fiction reflects real life and the society in which it was created and in turn influences them as well, there is in the film a spontaneous liberality in female sexuality. There is also a greater participation of women in the academic field and in decision-making environments, practically in a ratio of 1: 1 between men and women, which is demonstrated both in the scenes in which a classroom is shown and in the Teachers’ Council room, where men and women share the same spaces in equal proportions.

For better understanding, the movie plot shall be presented here: Dr. Kelp (Jerry Lewis), the son of an oppressive mother (Edwina Kelp – Elvira Allman), is a thin, skinny and clumsy high school teacher. He falls in love with a student, Stella Purdy (Stella Stevens) and decides to experience

in himself a tonic that he invented that makes him more virile to try to conquer his beloved one. The experience provides moments of Dr. Jekyll and Mr. Hyde to Prof. Kelp.

There are two prominent female characters. One is sweet student Stella Purdy, for whom the teacher falls in love. The other is Edwina Kelp, the repressive mother who was implicitly responsible for raising such a clumsy and timid teacher.

The first one, Stella, is a student of Prof. Kelp. Angelic, she is at the same time sensual and experiences the freedom of going out at night, drinking and smoking in a puritan society in a countryside town in the United States. In the film, she is portrayed as an average student, sometimes careless due to being an “airhead” when she falls in love with Buddy Love, the second personality of Prof. Kelp. Movies continue to present much more that old image of women who do not use the intellect to do science.²¹ And they continue to describe the idea already discussed by so many other feminist theorists about sexual stereotypes based on biological evidence that associates men with characteristics of rationality, competitiveness and objectivity, and women of passivity and emotionality. So much so that, in the final portion of the film, Buddy Love says that science can live without Stella’s contribution and she leaves her studies to become a wife and a mother, as it is for the redemption and salvation of women in the Western patriarchal domination system of the time.

The second one, Edwina Kelp, appears little in the plot. It is the oppressive mother who is rude and authoritarian with Prof. Kelp and his father. She delegates to Mr. Kelp part of the household chores whenever possible. At one point, the father of Prof. Kelp takes the tonic and has his masculinity exacerbated, beginning to dominate the relationship.

In both cases, what is observed is the fetishist model according to which women are diegetically controlled by matrimony – or else, when she does not submit to the model, she must be punished, the (stock character of a mysterious and seductive woman) *femme fatale* must be metaphorically murdered. “Revolver or knife take the place of the phallus that must, by eliminating her, dominate her.”¹⁶

The era of crisis and critical feminism

The last three movies were produced in the 1990s. The world, in this period, had undergone many changes. The “Golden Age” had ended, in which many countries had experienced a wide economic growth in the West. Not only had communism collapsed but the capitalist world had also suffered a series of cyclical crises between 1980 and 1990. On the other hand, the world experienced great technological boom, which brought more comfort to homes, diminishing jobs, feeding the crisis.²²

Feminist movements were transformed throughout the 1970s. Second-wave feminism or Second Wave, that of equality, which seeks to break down the barriers that prevent women from accessing the public world. In 1980, the feminism of difference, which discusses sexualization. And in 1990 the radical feminism, which discusses the fact that science, sexuality and gender are designed in a dichotomous way, trying to renegotiate hierarchical processes.²³

It was only in 1970 that statistics began to be drawn to seriously measure women’s participation in science in the United States. In that country, at the end of the 1990s women constituted 54% of graduates (half of whom were graduates in science). Exclusion would appear at postgraduate levels, where only 40% of doctoral candidates were women.⁹

In countries such as Brazil, for example, the academic landscape is better and women’s participation in the total of researchers is higher than the world average, even when compared to countries with a great scientific tradition. This positive aspect, however, contrasts with a harsh reality: urban violence increases the mortality of men in prime working age and social inequalities make it relatively easy for middle-class women to hire maids to replace them in their household chores, forming another hierarchization network, the social one.¹¹ In Brazil, even though women are better prepared for work, they continue to earn lower wages.⁸ Numerically, in a group of workers studied by a human resources company, 19.5% of women were postgraduates, the proportion among men being 17.3%. A total of 44.2% of women have graduate degrees, compared to 38% of men. Even so, they earn on average 40% less than them.

It is important to say that the women portrayed in the movies have different insertions in the scientific field. Although more expressively sharing scientific positions, they remain on the scene only to passively complete the story, waiting for active actions from the leading male character, perpetuating the male gaze. One is a renowned scientist, leader of the line of research, with her own laboratory on the movie *Junior* (1994). Another one is an undergraduate teacher who does not develop any experiment or any other relevant activity in the film *The Nutty Professor* (1996). The third one is an average graduate student in the movie *Senseless* (1998).

The analysis of the female characters representation politics in fiction movies has been a central concern in many feminist critiques and has detected the absence of strong female roles out of the traditional patriarchal view.²⁴ It is from this perspective that the female personalities of the three movies shall be briefly described.

Another interesting question is that two of the three movies discussed here are based on Genetic Engineering experiments (*Junior and The Nutty Professor*). The experiment in the *Senseless* movie is related to neuroscience. The image of science reflected in the movies reproduces what is new or some leading research at the moment the movie projects are conceived. In the 1990s, such scientific fields would be having great repercussions. In general, in the movies the first part explains achievements in science and then scientists try to escape the consequences of their discoveries/creations.²⁵

Everything is changed in a performatory world

Of the movies so far covered, *Junior* (1994) is perhaps the one that most departs from the standards of women's eroticization and passivity images in movies, though falling into another quite widespread stereotype: that of the solitary clumsy scientist, sloppy with their appearance.

For better understanding, here is the movie plot: Dr. Arbogast (Danny DeVito) and Dr. Hesse (Arnold Schwarzenegger) work at a university developing the product "Expectane," which can help infertile women to conceive children. Government health authorities veto the continuity of the tests and, consequently, the university cancels the research financing. Facing this, the two are forced to perform self-experimentation in Dr. Hesse, getting the first known male pregnancy. In order to do this, they steal the egg from a cryogenic researcher, Dr. Diana (Emma Thompson), who becomes the child's father.

In view of the plot here presented, many questions are brought up. About Bioethics, which involves assisted reproduction; about the attribution of behavior, responsibilities and social roles demarcated by the reproductive issue; on the relations of power over fatherhood/motherhood, offspring and body. There is a reversal of social roles in the father-mother binomial in the story. With this, there are two female figures to be appreciated, Dr. Diana (mother-father) and Dr. Hesse (father-mother). For circumstantial reasons, Dr. Hesse dresses as a woman and with the experience of becoming a mother made possible by the intake of the Expectane drug, he starts to behave according to maternal feminine stereotypes.

Attention must be paid to the fact that on the movie only the man was allowed to perform behaviors considered feminine, whereas this type of performance was not allowed to Dr. Diana, who behaves within the Western and patriarchal patterns expected for her. Performativity attests that identities are culturally constructed, floating and changing, not fixed. This situation influences human behavior, making genders unrelated to sex-as-matter and sex-as-instrument-of-cultural-signification.²⁶

Therefore, being a woman is becoming a woman. But since this process has nothing fixed, it is possible to become a being who neither the socially constructed category of man nor that of woman truly describes, as is the case of Dr. Hesse's behavior throughout the film.

The question remains: contrary to the Freudian psychoanalytic theory that women are characterized as a flawed man, marked by the lack of phallus, in the case of the movie *Junior* (1994), wouldn't men also be flawed and envious, pursued by the desire that was denied them, that of generating a life?²⁷ Focusing now on Dr. Diana, she is already a renowned researcher in the scientific field. She has funding for her cryogenic research and because she has prestige and encouragement, she receives the laboratory that used to belong to Dr. Hesse and Dr. Arbogast to develop her experiments.

Studies on the representation of science and scientists in the media, especially in the movies, are nothing new. In the conception of greater part of the lay population, a researcher is a male genial klutz, full of tics, ridiculed and misunderstood by his students and peers.²⁸ Dr. Diana is clumsy and does not care to look sexy in her routine. When getting ready for a party, she gets confused with her skirts and heels.

Schiebinger⁹ traces an interesting panorama on women dedicated to sciences, who often abdicate caring for their appearance, such as (Polish and naturalized-French physicist and chemist) Marie Curie, always seen in public in a simple black dress and an updo. Along the same lines, American chemist and physical chemist Geraldine Lee Richmond has confessed to having abandoned vanity to gain scientific credibility from her peers (men). And NASA American astronomer Dr. Anne L. Kinney has seen to stop lecturing in dresses and to start lecturing in jeans and plaid blouses because she felt as if her appearance attracted more attention than her speech, a fact that frequently occurred. Thus either women must forcibly rid themselves of vanity, whether by mimicking masculine attitudes in order to be understood by the other members of the academy, or by the strategy of concentrating attention on their scientific contributions and not in their physical beauty. Even though Dr. Diana (mother-father) is in principle mimicking masculine attitudes, she gets carried away by romanticism and marries Dr. Hesse, father-mother of her daughter.

Black women – african american women

The last two movies to be presented here [(*The Nutty Professor* (1996) and *Senseless* (1998)] bring together the representation of the American black community. It is impossible to approach the subject without thinking about the issues not only of female subaltern roles but also of racial segregation.

Interestingly, both movies were directed by white filmmakers (*The Nutty Professor* was directed by Tom Shadyac and *Senseless* was directed by Penelope Spheeris, a white woman). This fact in itself presents two interesting situations: the movie representation of blacks from the perspective of whites and the vision of a white filmmaker on the condition of blacks and women portrayed in the movie.

Another intriguing fact is that *The Nutty Professor*, starring (American comedian, actor, writer, singer, and producer) Eddie Murphy in several simultaneous roles, is a remake and adaptation of the 1963 *The Nutty Professor* movie, starring (American actor, comedian, singer, film producer, film director, screenwriter and humanitarian) Jerry Lewis. It is noted that the representation of what was inappropriate in 1963 for a man (skinny, shy, clumsy) has changed over time, following the growing consumerist appeal of the American capitalist society, in which the protagonist of the 1996 movie is obese, greedy and therefore also clumsy like that in the 1963 movie.

Even though these two movies are the latest of the five movies chosen to be used in the classroom, women's participation is far less expressive than in the other three chronologically prior movies. Women are in the plot, in fact to complete the plot sense, but play their roles in an absolutely passive fashion. They make men, protagonists in the stories, take the reins of the situation, both to be able to conquer their object of desire, the supposed girlfriends, as to protect them (the mothers). This shows that the male gaze still perpetuates itself, even in more recent comedy films. Black women portrayed in the movies (aspiring wives or mothers) come from distinct backgrounds and are all redeemed by marriage or motherhood in the same way that other female characters are referred to by Kaplan.¹⁶

Some mechanisms may explain the hierarchization and subaltern role of black women portrayed in these two movies. From the psychoanalytic perspective, because they are considered as "the other," non-men, non-white, because they appear on the movie as supporting the science doing or outside the scientific environment. In this sense, Butler²⁶ reinforces that sexism, homophobia and racism would be the repudiation of bodies according to their genders, sexuality and/or skin color. It would be an "expulsion" followed by a "repulsion" that underlies and consolidates culturally hegemonic identities in the axes of gender/ethnicity/sexuality differentiation. The operation of revulsion can consolidate "identities" based on the institution of the "Other" or the set of Others through exclusion and domination.

There is a direct and permanent connection between the maintenance of a patriarchal white supremacy in society and the institutionalization through means of communication of specific images, pursuits of ethnicity and blackness that sustain and maintain oppression, exploitation and global domination of all black people. Since the Atlantic slave trade (or transatlantic slave trade), white supremacy recognized control over images as fundamental to maintaining any system of racial domination.²⁹

The American feminist movement did not emerge from women victimized by sexist oppression but from white women belonging to the bourgeoisie who would claim social equality with men. In their anti-oppression speech, they would ignore the existence of all poor, non-white women. Feminists of the past did not pay attention and denied the hierarchy existing between ethnicity and social class. Over time, such attitude has been modified in terms of being more patronizing to poor and non-white women, allowing them to take part in movements and theorizations, as if both belonged to the white bourgeois classes and the others would be mere listening visitors. Here the hierarchization and subordination between the group of women are characterized, theoretically considered as a single and homogeneous block.³⁰

And finally the movies: *The Nutty Professor* (1996) is set in an unidentified city, apparently in the country side, where society is conservative. The protagonist of the film, Dr. Klump, fat and shy, teaches at a high school and develops a genetic rearrangement research that makes his

guinea pigs lose weight quickly. He falls in love with a freshman chemistry teacher at school, Karla Purdy (Jada Pinkett Smith), an admirer of his research. Intimidated by his physical appearance, he decides to experiment on himself the product that ends up turning him into Buddy Love, who in addition to being lean is more manly, which results in his alternation between periods of Dr. Jekyll and Mr. Hyde.

The film shows men and women, black and white, occupying the classroom equally. There are also women in the laboratory where Dr. Klump develops his experiment but there is more emphasis on his assistant – a white man. The school principal where the story takes place is also a white man. In the scientific field, referring to a higher degree education, women are faced with a “glass ceiling,” which prevents them from advancing in scientific graduation to the top, since these positions are almost always destined to white men. Although they are there in the movies, they do not occupy the main job positions.²¹

Dr. Klump comes from a traditional middle-class family from the countryside of the United States, consisting of grandmother, father, mother, brother and nephew, living together in the same house. Klump’s mother (also portrayed by Eddie Murphy, as well as the other family members, except the young nephew) is traditional and overprotective, always there to support and admire him for his scientific achievements. In this context, the mother is represented as “outside” the sphere of sexuality, in a non-threatening way for the man, iconically, to the taste of the patriarchy, as a perfect and completely self-denying domestic presence to the service and domination of the father.

As for Karla Purdy, she is a chemistry teacher who already knows and admires Dr. Klump’s work. She is not only Dr. Klump’s object of desire but the whole movie plot unfolds around the process of her conquest by the clumsy professor. She passively watches all of the movie actions (the bullying that the teacher goes through, the self-experimentation with the innovative drug, the revelation of all the misunderstanding arising from the situations exposed). Apparently, she does not develop any relevant scientific work, being her responsibility only to teach and to reproduce what is already placed in the scientific field. Also, other teachers are not clearly shown in the movie but it seems to be a mixed school, where white and black men and women are accepted. In her case, in addition to suffering with the invisible barriers of scientific ascension due to being a woman, there is also the fact that she is black, since, as we have explained earlier, although the school seems to offer equal opportunities to all, prominent positions seem to be occupied mainly by white men.

The concept of intersectionality coined by Patricia Hill Collins³¹ can offer an explanation for Karla’s condition in the movie. The concept refers to a way of thinking and interpreting different overlapping dimensions, such as ethnicity/gender, gender/class, class/ethnicity, understanding that different spheres may present different weights and forms of oppression. There are no references in the movie to whether she is in this condition by choice or lack of access but it is clear that scientific

subaltern roles are initiated by the fact that the school's principal is a white man. The possibility of experimentation in the laboratory is given to a black teacher. And the classroom is offered to two black teachers, being the woman's responsible only for teaching.

As for the movie *Senseless* (1998), it is set in New York, a city where all types of people coexist, with diverse cultures, supposedly an environment of egalitarian conviviality. Intriguingly, the project was directed by a white woman, (American film director, producer and screenwriter) Penelope Spheeris, without, however, giving some visibility to women, white or black, in her movie. They are there only in supporting roles because if they were excluded this would not make the slightest difference in the main events achievement. Not even the protagonist's interest in a woman motivated the main plot. And, in fact, the proposal of the comedy film is not this but to analyze excessive ambition in social ascension encouraged by a capitalist Western society.

For better understanding, the movie plot is described below: Darryl (Marlon Wayans) is the eldest son of a poor black woman living in (large neighborhood in the northern section of the New York City borough of Manhattan) Harlem who was abandoned by her husband with five children to raise. He is a student at a university and does all kinds of work to be able to pay for his Economics course and support his family. One of the jobs he accepts and shall better pay him is to be a human subject research volunteer paid for the development of a drug that sharpens all the senses. At the same time, an employee selection process to become a junior analyst on (Financial District of Lower Manhattan in New York City) Wall Street arises. He was initially excluded from competition because of his economic and social condition but is in for it again by cheating and benefiting from the superpowers conferred by the experimental drug, ending up to live all sorts of side effects that the experiment could cause.

As it turns out, even in the movie plot women do not have a direct participation in major events. Not even Janice (Tamara Taylor), the woman whom Darryl falls in love with, is mentioned. Romance between them appears only as a background.

This particular movie has several aspects that differ from those that have been covered up until then. The main character is not the scientist, but the human subject research volunteer. There is no self-experimentation, but Darryl (an economics student) volunteers for the experiment as well as for other activities (he sells sperm, blood, hair). Janice, his girlfriend, studies Literature at the same university. They are not part of the laboratory world.

As for the presence of women in the sciences and the academy, the movie shows classrooms with a practically balanced attendance from men and women, whites and blacks, but in the experimental laboratory the researcher who coordinates the experiment and his assistant are white. Even though in the United States black people are socialized into the educational system of white supremacy, many are convinced that they are unworthy to ascending in more complex fields of knowledge.²⁹

When, at the end of the film, the six finalist students stand out for the Wall Street job post, there is only one (white) woman, who is eliminated in the first phase of the competition. Not surprisingly, this fact was illustrated in the movie, and reveals an American reality of the time.

In the late 1980s, early 1990s, American statistician Betty Vette pointed out that out of every two thousand ninth grade boys and two thousand girls of the same educational level, one thousand of each group were given enough mathematics training to pursue studies in exact sciences. At the end of the secondary education, only 280 of the men and 210 of the women would have enough mathematical training to follow a technical career.⁹ Although the study has not gone into the depths of why these figures, and Penelope Spheeris probably has not relied on them in directing the film, from a simplistic and superficial interpretation of numerical data can come the common sense in portraying in the movie just one woman at the end of a dispute that depends on mathematical knowledge.

Women's participation in this plot is indeed small, although the movie has been directed by a woman. There are two female characters of greater prominence: Darryl's mother, who has not even had her name pronounced in the movie, and Janice, the girlfriend. Janice is black, the daughter of a white businessman and a black woman, which attributes another social stratum to her. With this, she had the opportunity of attending a Faculty of Literature, a course of her choice, contrary to the her father's will, who wished for her to be in Law School. Her involvement in the plot is small, costarring only in the romantic pair desirable for the audience's empathy with the film.

By the time the film was produced, ostensive discrimination in academia in the United States had already softened, for racial segregation in universities was perfectly permissible until the late 1960s and early 1970s, for example. Double embarrassment would be experienced by black women⁹, which does not appear in the movie. As for Darryl's mother, though she had initially raised her children alone, now she'd be depending on him to secure the home livelihood and raise his younger siblings.

In the beginning, the great struggle of black women was the opposition to racism, in the first place, an oppressive situation for both men and women. The aim of this struggle was for equality in existing social structures to ensure decent survival, since most of the people claiming were poor and lived in racially segregated neighborhoods.²⁹ Gender roles for black women in this condition were thus more clearly defined as mothers and housewives and they lived at the base of the chain of oppression, even in American feminist movements: white men and women who oppress all blacks, followed by white women and black men who oppress black women.³⁰

What you notice in the movie, then, is male supremacy over all actions. The protagonist is ridiculed throughout the story, although at times he underscores the current thinking of his ethnicity, because he is black (not in the wrong way, after all it is a comedy). Even though this is the most recent movie out of the five ones selected and directed by a white woman and featuring

blacks, there is the perception that, although years pass, the feminine passivity represented in the Hollywood movies continues to be perpetuated, since here they are almost unnoticed, as objects of admiration or pleasure, under the male gaze from an audience consisting of white men.

After everything

The comedy films discussed can serve as a useful tool for teaching Pharmaceutical Deontology, both in an objective way, dealing specifically with the subjects inherent to the subject matter, and in the sense of broadening the discussions that may arise from a deeper look at the movie projects, taking as a premise the humanistic formation of a critical and reflective student.

The five movies in question: “*Monkey Business*” (1952), “*The Nutty Professor*” (1963), “*Junior*” (1994), “*The Nutty Professor*” (1996) and “*Senseless*” (1998) were watched and analyzed by four school classes over 2012 and 2013 and the students restricted themselves to answering to an analytical script proposed that took into account only the operational issues of the subject, with little or no appreciation outside this scope from the classes observed, even if this possibility had been provided to them.

This is probably due to the fact that the subject matter has a small workload compared to the total course, mostly technical and instrumental. The fact is that the exclusion of women from the scientific field, evident in all the movies, was not even questioned by the students, mostly women (71 female students out of a total of 83). It was up to the subject matter professor to signal in all the school classes and make comments related to the movies and theoretical references appropriate to each situation. This leads us to believe that, even if women have achieved social advances through political movements, their subaltern roles are so rooted in common sense that even potential scientists (undergraduate students in the field of Health) naturalize this absence, not recognizing a place that is also theirs by right.

The points of the movies marked in the school classes during the presentation of the case study took into account the time space in which the movies were conceived. This situation makes all the difference to understand the way in which female characters were represented and analyzed, given that in 1952 (*Monkey Business*) the ideal of the female image was the “queen of the home”. In 1963 (*The Nutty Professor*), there was already a permission for sexuality for women, who should still be “nice girls.” In these first two titles, the male gaze is undoubtedly more present. In 1994 (*Junior*), the total reversal of roles allowed a man to be a mother and this behavior must be explained by the concept of performativity proposed by (American philosopher and gender theorist) Judith Butler. And finally, in 1996 and 1998 (*The Nutty Professor* and *Senseless*), they are in the academy, even if in a secondary way, but the conditions of deeper inequality felt by black women still remain.

Thus, women appear in supporting roles to do science or in supporting roles in the stories, taking on passive positions: in *Monkey Business*, Edwina is the subject of her husband’s experimentation; in 1963 and 1996, Stella is a student and Karla is an assistant professor; in *Junior*, although Diana is a researcher, she is in a romantic relationship with Dr. Hesse; and in 1998, in *Senseless*, Janice is just an object of desire for the protagonist. Even if time has passed and social transformations have taken place, old stereotypes still remain, albeit in a more veiled way.

All the facts presented here have served to more deeply reflect in the classroom, not only on the role of the researcher of therapeutic substances, but also on the place of women in the scientific field. The pedagogical practice proposed and amplified here demonstrates that the Science & Art intersection is promising to awaken important discussions, provided that the professor takes care in deepening the arguments. Thus comedy films can contribute to transcend issues inherent only in the subject matter and promote a more complete education for the student, showing that women, and in this specific case, pharmacists, can also be protagonists of “doing science.”

Acknowledgment

To financial support from Brazilian Coordination of Improvement of Higher Education Personnel (*Coordenação de Aperfeiçoamento de Pessoal de Nível Superior*; CAPES, in the Portuguese abbreviation) at the “Sandwich Doctorate” Program Abroad (PDSE in the Portuguese abbreviation)* program, process BEX 14355/13-2, and professors Adriana Conceição Silva Pereira Bebiano Nascimento and Maria Irene Ramalho, students’ advisors at the Doctorate Program in Feminist Studies at Portuguese University *Universidade de Coimbra*, Portugal.

References

1. Sousa FC. *Ética e deontologia: textos para profissionais atuantes em bibliotecas*. Florianópolis: Editora UFSC; 2002.
2. Batista MM. Estereotípi e representação social: uma abordagem psicossociologia. In: Barker DA, organizador. *O poder e a resistência dos estereótipos*. Aveiro: Universidade de Aveiro; 2004, p. 103-116.
3. Arruda A. Teoria das representações sociais e teorias de gênero. *Cadernos de Pesquisa* 2002; 117(127):127-147.
4. Tega D. *Mulheres em foco: construções cinematográficas brasileiras da participação política feminina*. São Paulo: Cultura Acadêmica-UNESP; 2010.
5. Cruz AL. O olhar predador: a arte e a violência do olhar. *Estudos feministas e cidadania plena*. *Revista Crítica de Ciências Sociais* [Internet] 2010; 89. [acesso em: 14 maio 2014]. Disponível em: <https://rccs.revues.org/3685?lang=es#tocfrom1n1>

6. Keller EF. Qual foi o impacto do feminismo na ciência? *Cadernos Pagu* 2006; (27):13-34.
7. Costa MC. Ainda somos poucas: exclusão e invisibilidade na ciência. *Cadernos Pagu* 2006; (27):455-459.
8. Chassot A. A ciência é masculina? É sim senhora. *Vale dos Sinos: UNISINOS*; 2011.
9. Schiebinger L. O feminismo mudou a ciência? Santa Catarina: EDUSC; 2001.
10. Cozzi ALF. As personagens femininas em Macunaíma: sexualidade e gênero no modernismo pós-1922. 5º Prêmio Construindo a Igualdade de Gênero. Redações, artigos científicos e projetos pedagógicos vencedores. Brasília: Presidência da República, Secretaria de Políticas para as Mulheres; 2010. p. 83-103.
11. Nogueira P. A ciência das mulheres. *UNESP Ciência* 2011; (17):18-25. [acesso em: mar 2013]. Disponível em: http://www.unesp.br/aci_ses/revista_unesp-ciencia/acervo/17/a-ciencia-das-mulheres.
12. Henriques MF. Concepções filosóficas e representações do feminino: subsídios para uma hermenêutica crítica da tradição filosófica. *Estudos feministas e cidadania plena. Revista Crítica de Ciências Sociais* jun 2010; 89. [acesso em: 12 abr. 2014]. Disponível em: <http://rccs.revues.org/3661>.
13. Ramalho MI. Difference and hierarchy revisited by feminism. *Anglo Saxonica* 2013; III(6):23-45. [acesso em: 12 abr. 2014]. Disponível em: <http://www.ulices.org/images/site/pdfs/ASaxoIII-N6a.pdf>
14. Corrêa VSA. Gestão escolar e gênero: o fenômeno do teto de vidro na educação brasileira [Dissertação]. Curitiba: Universidade Federal do Paraná. Pós-graduação em Educação 2010.
15. Mulvey L. Visual pleasure and narrative cinema. *Screen* 1975; 16(3):6-18. [acesso em: 15 maio 2014]. Disponível em: <http://www.jahsonic.com/VPNC.html>.
16. Kaplan A. A mulher e o cinema: os dois lados da câmera. Rio de Janeiro: Rocco; 1983.
17. Blainey G. Uma breve história do século XX. São Paulo: Fundamento; 2008.
18. Narvaz M, Koller SH. Metodologias feministas e estudos de gênero: articulando pesquisa, clínica e política. *Psicologia em Estudo* 2006; 11(3):647-654.
19. Federação Nacional dos Farmacêuticos. Campanha sou mulher, sou farmacêutica, tenho direitos! São Paulo: FENAFAR; 2012. [acesso em: 29 maio 2014]. Disponível em: <http://www.fenafar.org.br/pdf/livreto-mulher.pdf>.
20. Irigaray L. Entrevista: poder do discurso/Subordinação do feminino. Transcrito por Catherine Porter. *ex-aequo* 2003; 8:45-55.
21. Araújo DB. A ciência e as relações de gênero. *Estudos IAT* 2010; 1(1):4-17.
22. Hobsbawn E. Era dos extremos: o breve século XX – 1914-1991. São Paulo: Companhia das Letras; 1994.
23. Maffia D. Crítica feminista à Ciência. In: Costa AAA, Sardenberg CMB, organizadores. *Feminismo, ciência e tecnologia*. Salvador: REDOR/NEIM-FFCH/UFBA; 2002. p. 25-39.
24. Silva RA. Estereótipos na ficção cinematográfica: a representação da cientista no filme *Contato*. *Intercom – Sociedade Brasileira de Estudos Interdisciplinares da Comunicação, XXX Congresso Brasileiro de Ciências da Comunicação*, Santos; 29 ago – 2 set 2007.
25. Cunha MB, Giordan M. A imagem da ciência no cinema. *Química Nova na Escola* 2009; 31(1):9-17.

26. Butler J. *Gender Trouble: feminism and the subversion of identity*. New York: Routledge; 1990.
27. Le Breton D. *Adeus ao corpo*. Antropologia e Sociedade. Campinas: Papirus; 2003.
28. Barca L. As múltiplas imagens do cientista no cinema. *Comunicação & Educação* 2008;10 (1):31-39.
29. Hooks B. *Black looks: race and representation*. Boston: South end Press; 1992.
30. Hooks B. *Feminist theory. from margin to center*. Boston: South end Press; 1984.
31. Sardenberg CMB. Da crítica feminista à uma ciência feminista. In: Costa AAA, Sardenberg CMB, organizadoras. *Feminismo, ciência e tecnologia*. Salvador: REDOR/NEIM-FFCH/UFBA; 2002. p. 89-120.

Received: April 13, 2016

Reviewed: July 27, 2016

Accepted: August 12, 2016

