

GENDER THEORIES IN THE CONTEXT OF SOCIAL ROBOTICS

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Abstract: *At present, the discourse of gender studies discusses the negative consequences of gender stereotypes that have emerged in the context of a traditional gender system. Gender as a constituent part of a human being is used in the development of social robots. So the problems of gender that have arisen in society are transferred to the sphere of robotics. The introduction of social robots into everyday practice requires a special approach to the development of interfaces and software, namely the revision of the binary gender system. Developers can apply the already available results of gender studies in the field of social robotics and in that way foster the overcoming of gender stereotypes established in the society.*

Keywords: *sex, gender, social robotics, robot, gender theories.*

Modern studies examine the question of introduction and adaptation of social robots in society is actively discussed [1]. The interaction of people and such machines is carried out through a social interface [2], which includes for example the image of robots. In most cases, robots have an anthropomorphic form. A human being perceives human-like forms more positively, because it shortens the period of recognition of the robot and allows one to immediately determine its function set [3].

The desire to create "in one's own image and likeness" is partly visible even in times of myth creation, when a person to some extent "takes on the role of God" and tries to create something that resembles a man as far as possible. For example, the myth about Pygmalion, the sculptor of Crete who carved an ivory statue fell in love with it, while Aphrodite enlivened the sculpture [4]. In fiction, examples of the realization of this desire can be found in such works as "Frankenstein or modern Prometheus" of M. Shelley, "The Sandman" of E. Hoffmann., "Golem" of G. Mayrinik. Frequent use of anthropomorphic interfaces tells us that people tend to see their own reflection in the machines.

The transfer of human traits to machines is common in the field of social robotics. In addition to the external form of robots, developers are engaged in filling the platform, which contains a set of behavioral components. Some of them are associated with such important components as sex and gender. Traditionally, sex is

understood as a biological characteristic of a person, which determines the distinctive features of men and women at anatomical, genetic, and reproductive levels. Later, the term gender appeared, which is defined as the socio-psychological characteristics of a person, a construct formed in dependence of culture, social norms, socialization, etc. The term gender was introduced by sexologist John Mani in 1955 [5], and the concept of gender was widely adopted in the 1970s thanks to the development of the feminist movement.

Research led to the formation of a complete understanding of gender, its important components. The main components we can distinguish are:

1) Sex - determines belonging to an inborn biological sex, taking into account the structure of genitals;

2) Sexual orientation - socially or individually accepted patterns of sexual desires, feelings, practices and identities;

3) Gender identity - determines the gender identity of the individual;

4) The gender structure of the personality - the patterns of socially recognized emotions, organized by the structure of the family and parenthood, established by the individual;

5) Gender Processes - includes social learning practices, role-based replicas that define gender-responsive behavior and the development of gender identity;

6) Gender beliefs - commitment or denial of gender ideology;

7) Gender display - the presentation of the individual as a representative of a certain type of gender identity through clothing, cosmetics and other markers. [6]

Each of the components is seen in gender models: masculine and feminine. Masculine is peculiar to men, and is characterized by a set of such qualities as striving for power, courage, strength, confidence. Feminine qualities are considered to be such as patience, fidelity, lack of selfishness. This served as the basis for the formation of gender stereotypes - the notions common in the society about the characteristics and behavior of representatives of different gender. In the case of stereotypes, we can observe the advantage of men over women, as well as the belittling of the latter. D. Stockard and M. Johnson in his work "Sex and Gender in Society" came to the conclusion that the difference in the social roles of men and women occurs through the use of image-symbols, such as the wife-keeper of the hearth, the man-earner, and others. The media translates these images, which turn into stereotypes [7]. Gender patterns in society are usually asymmetric: "men/masculine" is usually considered as a primary, significant and dominant one, and "women/feminine" is defined as a secondary one, insignificant from a social point of view and subordinate to the first one. Researcher Bern Shawn believes that gender stereotypes can be generalized and resistant to new information, which prevents society from reconsidering its views on modern society [8]. The state of things aggravates man's inclination to systematize knowledge: associative thinking prevents an individual from reflecting on the actions of men and women, and abstracting away from gender deep rooted in gender stereotypes.

At the moment, the binary system of masculinity-femininity is reflected in any sphere of human activity. Social robotics is no exception and also follows it, to a greater extent dividing robots exclusively into male and female. Components of gender are seen in such elements of design as color, shape, imitation of sexual characteristics in appearance, voice of machine, etc. The use of a binary gender system transfers gender stereotypes to the field of robotics, which determines the scope of robot's activity, its social role. People interact with robots and transfer traditional stereotypes to them. In the Bielefeld University study, man-like robots with short hair were defined by respondents more active than woman-like robots with a long hairstyle. Machines with female gender characteristics in the "body" structure were perceived as more communicative. Moreover, respondents clearly distinguished between the "male" and "female" duties of robots with male and female interfaces correspondingly [9].

Undoubtedly, robots do not undergo male or female gender socialization, during which they could get a full set of social characteristics. Thereafter, the gender components can manifest themselves in the interface and design of the robot, both in behavior and function set. For example, the android model Geminoid F (F from female) being developed at the University of Osaka tries to simulate a gender identity [10]. Sex and gender display are used in sex robotics. Harmony, sex robot of Abyss Creations company, can change the behavior on owner's demand, and also has female genitalia [11]. As a rule, the components of gender are laid in robots with respect to personal experience of their developers.

The impact of gender stereotypes in society is especially evident in the professional sphere. They cause a gap in wages between men and women, create a list of prohibited professions, sex discrimination in IT, business areas and others [12]. We can assume, that the use of the traditional gender system in robotics will help to combat inequality in the professional environment. Robot's exterior is developed in conformity with existing stereotypes being transferred to the functional elements of robot, despite the versatility of the software and the multifunctionality of the machine. So, Robots with masculine "qualities" are now proposed for work in the police, construction, transport management and a number of other branches, and robots with pronounced feminine "qualities" are programmed to be nannies, waiters, maids, etc. In the future, the use of the traditional gender system in the interfaces of social robots will essentially fix gender stereotypes in the human mind, which will have a serious impact on the development of certain industries and structures.

Today, many social movements suggest to revise the existing gender system and oppose gender stereotypes. One of them is transhumanism [13] advocating for the use of science and technology to improve human capabilities with the aim of eliminating negative aspects of human existence like diseases, aging, death.

Transhumanism and feminism provide a basis for post-genderism, a new social and political movement. Its representatives advocate for the elimination of sex and gender in people on a voluntary basis with the help of biotechnology. The

supporters say: the division by gender roles affects the lives of individuals negatively, which forms a negative future for our society.

One of the first thinkers, who formed the ideas of post-gender, was Sulamith Firestone. In her book "Dialectics of Sex", she argued that it is necessary to eliminate the very sex segregation, so that the genital differences between people would no longer be of cultural significance [14]. Both sexes will have equal opportunities to give a birth to children, or, in other words, none of them will depend on the other. Donna Harway says in her essay "The Manifesto of Cyborgs" that women can become completely free after becoming post-genital organisms [15]. The same revolutionary ideas were supported by Alison Jagger: she argues, that the final transformation of human nature implies the possibility of transforming the natural possibilities of man, which until now were considered to be biologically inherent in only one sex [16].

A new view suggests a radical revision of the physical component of a person, but we can not ignore the social, which is gender. For post-genderers the rejection of gender, the transition to non-genderes and the abolition of gender identity are seen as a step forward in the development of society and technology. After elimination of the barrier between male and female, the individual will be characterized only by his own actions and achievements.

Engineers can either significantly update them by proposing a new gender system, or try to completely abandon them. The latter option can be much more effective. The rejection of the gender system as a whole will lead to significant changes not only in the field of social robotics, but also in society as a whole.

The results of gender studies make it possible to assume, that the gender paradigm will soon be changed. Refusal of gender seems possible, and the creation of a gender-neutral robot can serve as an impetus to the emergence of a new society.

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