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"Let's not be too eager about equality" – brain sex, heteronormativity, and the scientific mystique

The popular science book under the title *Brain Sex* was probably the most important publication about sex of the Polish nineties. The theory about biological background of psychological and social differences between women and men, accessibly expounded by two British journalists, became the fundamental way of understanding gender in Poland. During subsequent years the views expounded in *Brain Sex* were exaggerated, oversimplified and used for political disputes in Poland, but above all they were repeated and, via popular publications, journalists, politicians and priests' statements, they gained the status of self-evident nature.

As every reductionism claiming that some differences between people are natural, universal and unchangeable, the brain sex was a source of arguments especially for the conservatives. Therefore, it should not come as a surprise that its dominance was used by right-wing journalists, although even they, as it will be shown, had to adapt the concept for the needs of their arguments. However, it is surprising that also the liberal media joined the popularization of the brain sex. As I am going to advocate, it results from the fact that the brain sex obtained the status of a scientific consensus beyond dispute. In consequence, the critics of the brain sex were from the start, without being heard, called ideologists and ignoramuses. The "scientific mystique" – a belief that scientists are impartial, apolitical, and their conclusions are final (Messing, 1983, p. 75) – contributed also to the popularity of the brain sex. The susceptibility of Polish liberals

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to the "scientific mystique" enabled the liberal and left-wing press to propose some theories which due to their open sexist nature would not have appeared there in any other context.

The genesis of the popularity of the brain sex in Poland is complex and its analysis requires work which would be more extensive than the volume of this article. In the article I am going to take a close look at the recent years, when the brain sex became an argument in a political dispute concerning gender. It is crucial to notice that the inclusion of the brain sex into anti-gender theory and activism did not undermine the belief about its scientific and indisputable status – liberal and left-wing commentators did not distance themselves from the brain sex, as they did in case of other claims put forward by anti-gender theorists. In order to explain why this happened, I will outline the role of the brain sex in anti-gender discourse, and then I will analyse the public activity of two Polish scientists – neurobiologists whose scientific position and activity for popularisation of the discourse of the brain sex were used in the writings of the opponents of gender. I am going to describe their journalism and analyse how their opinions were positioned as objective and neutral in the liberal media, despite of their involvement in conservative reductionism.

The presence of scientific research in the media involves oversimplifications and exaggerations, such as in the example of the brain sex. The question whether the research to which the media refers is scientifically confirmed is not going to be analysed in this article. I assume, after numerous representatives of natural sciences, that the brain sex is a contentious issue and its scientific foundations are questionable and in many respects doubtful (Bleier, 1984; Bluhm, Jacobson, Maibom, 2012; Dussauge, Kaiser, 2012; A Fausto-Sterling, 1985, 2000, 2012; Fine, 2010; Fisher, 2011; Jordan-Young, 2010; Kaplan, Rogers, 2003; Pawłowska, 2013; Schmitz, Höppner, 2014). Therefore, I will pass over the judgement on which of the proposed differences in structure and functioning of the brain seem to be scientifically confirmed, which of them constitute a moot point, and which are altogether false. What is crucial for me is the remark of a biologist Anne Fausto-Sterling that "the idea of brain sex has acquired a cultural valence and resonance that goes far beyond the scientific evidence that supports it" (2012, p. 27).

What is the brain sex?

"The brain sex" is a conviction that the observed differences between women and men, e.g. in capabilities and preferences, result primarily from differences in brain structure and functioning. Thereby, the brain sex belongs to the beliefs based on reductionism –an attempt to explain "complex phenomena by deterministic behaviour of smallest constituent parts"

(Gould, 1996, p. 27). A common feature of anthropological reductionisms is an assumption that some aspects of human behaviours, for example gender roles, sexual preferences, intelligence, aggression or religious beliefs, may be reduced to a one-dimensional phenomenon and explained with a single theory. In this respect, the brain sex is similar to sociobiology and evolutionary psychology, where it is assumed that human behaviours result from evolutionary processes, and to genetic determinisms, according to which it is the genes that determine human identity, behaviours and desires (Nelkin, Lindee, 2004). Due to their simplicity, reductionisms are very popular in Western culture (Hubbard, 1990), with the reductionisms concerning the brain currently arousing special interest (Vidal, 2009). Researchers also indicate that biological determinisms such as the brain sex are connected with conservative politics, since they allow to formulate the defence of social *status quo* in scientific language and, simultaneously, they divert the attention from the social causes of inequalities (Bleier, 1985; Lancaster, 2003; Rose, Lewontin, Kamin, 1984). As the evolutionary biologist and the historian of science Stephen Jay Gould put it, thanks to reductionisms "millions of people are now suspecting that their social prejudices are scientific facts after all" (1996, p. 60).

The concept that women and men have brains which are built differently and these differences determine the intellectual capabilities, personality traits, and preferences is not new – the historians of science point that its sources can be found in nineteenth-century natural sciences. At that time Western scientists agreed that women radically differ from men in terms of their physical build, life capabilities and duties and that the differences were supposed to guarantee the well-being of the whole species. The change in gender ideas did not come together with any new discoveries, but it resulted more from the new, politically driven interpretation of the already known facts (Laqueur, 1990). The eighteenth and nineteenth century is a time of thorough changes in social gender order, questioning the *status quo*, which previously seemed to be obvious. The French Revolution and socialist, equality utopias, industrialisation and mass work of women in factories, proposals of changes in marital law, women's struggle for access to higher education, the fight for participation in the public sphere including the right to vote, as well as anti-suffrage campaigns – all these factors contributed to shaking the gender order in the West. "Scientists responded to this unrest with a detailed and sustained examination of the differences between men and women that justified their differing social roles", writes the historian Cynthia Eagle Russett. "Anatomy and physiology, evolutionary biology, physical anthropology, psychology, and

sociology evolved comprehensive theories of sexual difference." (Russett 1989, p. 10). Thus gender became a subject of fundamental significance for Victorian natural sciences.

In the nineteenth century, it was assumed that the size of the brain correlates with intelligence, and therefore statistically smaller brains of women were to prove their intellectual deficits (Gould, 1996, p. 105–141; Malane, 2005, p. 1–5; Russett, 1989, p. 30). Women's brains were also thought to be weaker, less developed and more primitive than men's. Their structure was to resemble the brains of children (Russett, 1989, p. 33; Gould, 1996, p. 129). However, the inferiority of women was not explicit – although women were to be limited by reproduction and physically and intellectually weaker, eventually their dissimilarity attracted men and served the improvement of the race (Laqueur, 1990; Schiebinger, 1993). It is connected with the development of complementarity – the concept that the sexual differences complement and attract each other. Therefore women, at least white women from the middle and higher class, are not simply worse than men, but they are naturally different, and their radical dissimilarity guarantees the stability of heterosexuality and reproduction. In this way radical sexual differences remain in harmonious interdependence. In a subversive way, the Victorian complementarity provided then the equality and community of sexes – but only within heterosexuality. Such logic – of legitimizing heterosexuality by means of the narrative on the differences attracting each other – will accompany contemporary narratives on the brain sex.

In Poland the popularity of the brain sex started in the early nineties in connection with an enormous publishing success of a popular science book under the same title. The book by David Jessel and Ann Moir *Brain Sex: The Real Difference Between Men and Women* was published in Poland in 1993, four years after its English original, in a prestigious series Biblioteka myśli współczesnej [The Collection of Contemporary Thought], known also as "plus minus infinity". As early as before the first edition of the book, its extensive parts were published in three subsequent editions of "Przekrój" magazine, where the book was presented as ambitious and revolutionary. So far six editions of *Brain Sex* has been published – which is definitely a record of the books from The Collection of Contemporary Thought. Moreover, *Brain Sex* was additionally reprinted almost every year[1]. During the whole nineties, the book by Moir and Jassel ranked high on bestsellers' lists. Despite the passage of time, it is still a subject of additional printings and remains popular among the readers.

[1] Subsequent editions and additional printings: 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2002, 2003, 2004, 2006, 2007, 2009, 2014, 2015, 2016, 2017.

One can say that *Brain Sex* is the most important, the most influential book about gender published in post-transformation Poland.

The main aim of *Brain Sex* is to naturalize gender differences. According to the authors, statistical differences between women and men, such as school results, choice of professions, interests or sexual preferences, result from different build of the brains of women and men. The differences are inborn – they stem from evolutionary, genetic and hormonal factors – and any attempts to change them are groundless. Therefore, the book is directed against political correctness and feminism, which are presented as a dominant political power, hindering the articulation of the obvious truth that women and men differ in a great extent. Moir and Jessel explicitly claim that *Brain Sex* falsified Kate Millett's statement that "many of the generally understood distinctions between the sexes in the more significant areas of the role and temperament, not to mention status, have in fact, essentially cultural, rather than biological, bases." (p. 251). Thereby Moir and Jessel's book subscribed to the rhetoric of American backlash: conservative reaction to feminism, in which women were being convinced that only life in keeping with the traditional values and gender roles may lead them to personal happiness (Faludi, 1991).

On the wave of popularity of *Brain Sex* in Poland, other popular science books on similar subjects were published (Brizendine, 2006, Polish edition 2006; Brizendine, 2010, Polish edition 2010; Rubner, 1999). Also guidebooks for people in heterosexual relationships basing on the brain sex discourse got a sympathetic response from readers. As early as in Moir and Jessel's book, it was claimed that deep and unavoidable differences between men and women threaten the stability of heterosexual relationships, since they lead to misunderstandings, conflicts and unfulfilled expectations (1993, p. 15). In this situation, knowledge about the build of the brain and psychological differences between sexes resulting from it was to help to overcome the heterosexual crisis and ensure a long-lasting and happy marriage. Many guidebooks developed this concept, with the bestselling series "Why Men … and Women …" written by Allan and Barbara Paese (2000, 2002, 2003, 2007, 2009) among them. The series had five books, all with numerous reprints (2001, 2003, 2004, 2007, 2010). The brain sex was also applied in the bestselling cycle "Men Are from Mars, Women Are from Venus", most extensively in the volume *Why Mars and Venus Collide* (Gray, 2008, Polish edition 2008).

Laid out in the popular publications, the logic of biological complementarity according to which love and desire stem from the very differences between sexes explained and legitimized heterosexuality, but it also allowed for a theory of homosexuality. This issue has

been a part of the brain sex discourse from its very beginning: influenced by the Victorian complementarity, the first theoreticians of homosexuality claimed that since only the sexual opposites can attract one another, a homosexual man needs to have the female psyche and a lesbian should be masculine to some extent. Therefore, homosexuality was thought of as sexual inversion (Kennedy, 1997; Steakley, 1997). Similarly, in contemporary pop-science publications on the brain sex, biological determinism goes together with naturalizing of homo- and transsexuality – both phenomena are presented as the effects of genetic disorders and disorders in prenatal development, leading to incorrect functioning of brain. Due to such etiology, the authors of *Brain Sex* and *Why men don't listen…* claim, homo- and transsexual persons do not bear any responsibility for their inclinations and they also cannot change them. The authors persuade their readers that transsexual persons need to be tolerated. Moreover, both in *Brain Sex* and in popular guidebooks, homo- and transsexuality are not referred to as diseases; however, they remain undesirable. Therefore, the authors suggest diminishing the probability of them appearing among children – they recommend rest and control of the level of hormones during pregnancy (Moir, Jessel, 1993, p. 179; Pease, Pease, 2001, p. 222). It is worth adding that the distinction between homosexuality and transsexuality is getting blurred: assuming sexualisation of the brain, the popularisers of the brain sex understand transsexuality literally as a female brain in a male body or a male brain in a female body. Similarly, homosexuality is for them primarily a sexual inversion, one that encompasses both psychology and somatics. Therefore, lesbians may be characterised with thicker facial hair (Pease, Pease, 2001, p. 223), and gay men naturally have – in the authors' opinion – feminine inclinations, e.g. to dress tastefully (Pease, Pease, 2007, p. 30). In this perspective homosexuality is a less advanced variation of transsexuality.

The above deliberations show that the concepts of the brain sex and "gay brain" are similar in many respects as they constitute two aspects of the same discourse – they are reductionisms, in which gender complementarity – a stable binarism of gender roles and sexual orientation – is assumed. In both cases heterosexuality and traditional gender roles are presented as natural and normal, whereas homosexuality is regarded as a medical exception whose causes need to be scientifically explained. The brain sex and "gay brain" are connected on a methodological level (if there are no differences between the brains of men and women, the thesis that gay men have feminine brains does not hold), they complement and legitimize one another, and they also stem from the same tradition in natural sciences.

Brain sex in the anti-gender discourse

The nineties are a period of relentless popularity of the brain sex discourse and naturalistic explanations of statistical differences between women and men. Press releases on biological determination of gender roles systematically returned in the media, both the conservative and liberal ones, especially together with news from Western scientific research on biological determination of gender (Młodawska, 2009). Since the criticism of reductionism generally did not break through in the public sphere, the brain sex gained a status of obviousness and at the same time it enjoyed scientific prestige. The brain sex discourse gained a new, openly political significance after 2010, when it was woven into the anti-gender discourse – a conservative reaction to liberal social changes, especially feminism and normalisation of nonheterosexuality. Supported by the Polish Episcopal Conference, the positive social programme of anti-gender theorists is in conformity with the Catholic anthropology – it calls for heterosexual marriage, conservative gender roles and Christian sexual ethics (Duda 2016; Graff 2014; Graff, Korolczuk, 2017; Grzebalska, 2015).

The brain sex turned out to be a useful tool in conservative discourse, since it provided arguments referring to the findings of natural sciences for the Catholic gender anthropology according to which women and men are equal in terms of their personal dignity, but their equality is based on an essential psychological, physical and ontological difference (Case, 2016). Catholic complementarity is a theological concept, and it does not require a proof of natural sciences. However, an additional, scientific justification of the concept provides the Catholic anthropology with the appearance of universalism and modernity, hence the frequent use of the brain sex. The most extensive Polish anti-gender publication is *Pułapka gender* [Gender Trap] by a journalist Marzena Nykiel (2014). A whole subsection of this book is devoted to *Brain Sex*. Nykiel claims that the twenty five-year-old book by Moir and Jessel resolved the dispute concerning the influences of nature and culture on gender roles. She writes that *Brain Sex* "crushed feminist rubbish" (p. 266) and quotes the book extensively (p. 266–267). The appearance of the bestseller by Moir and Jassel in Nykiel proves the unique position of the book despite the passage of two decades. Other example of involvement of the brain sex into the fight with gender is a book by Mieczysław Guzewicz *Gender i apokalipsa* [Gender and the Apocalypse]. The author refers among others to the guides by John Gray about Mars and Venus, as well as on his own life experience; he radicalizes and sentimentalises the differences between sexes, stretching them to all aspects of life.

Guzewicz presents a Catholic variant of the discourse on saving heterosexuality: he believes that in the face of the crisis of traditional marriage it is necessary to propagate insight, such as "the woman has been created to spread love in the world, the man has been created to change the world, to understand it" – simultaneously, according to the author, such differences result from the very different build of the brain (2015, p. 101–105).

The brain sex is used to prove that gender is an ideology and to accuse feminists of ignorance and manipulation. Ewa Jackowska, a psychologist involved in anti-gender activism, writes:

> The concept of gender cannot aspire to the measure of scientific theory, since its fundamental presumptions are not based on the result of scientific research. […] Solid research, generally accepted by the scientists, clearly proves that the differences between men and women concerning their physical features and many psychological features result from differences in genotypes and present themselves in early childhood irrespective of the educational environment. I would like to add that the proponents of gender ideology evade commenting on the results of medical research, which presents the differences in morphology and the functions of central nervous system of women and men (Jackowska, 2014, p. 102–103)[2].

What is interesting, no reference to the brain sex discourse is made in the most important foreign anti-gender publication translated into Polish. In the extensive *Global Sexual Revolution*, which constitutes the main source of information and inspiration for Polish anti-gender journalists, the German author Gabriele Kuby does not refer to this issue, which shows the unique significance of this reductionism in the Polish public sphere (2013).

In anti-gender journalism the usefulness of the brain sex discourse is limited to explaining heterosexuality and the social position of women – anti-gender theorists refer to the brain sex, when it seems consistent with the Catholic anthropology. And since according to the Church homosexuality means "lack of order" and problems of moral nature, the aspects of the brain sex involving hardwiring homosexuality in the brain are silenced and negated, although the biological theories on determining sexual roles, sexual identity and sexual orientation are connected with each other. Gabriele Kuby explains that the theory of biological conditioning of homosexuality is untrue, scientifically undermined and "nobody is born a gay or

[2] The above excerpt is worth noticing also because Jackowska provides a footnote to American academic manuals (Bee, 1998; Brannon, 1999) in which, however, there is no information referred to by Jackowska. Quite the opposite, the authors of the manuals claim that the statistical differences between brains of men and women are small, and their social effects are impossible to estimate. The original title of Brannon's manual is, nota bene, *Gender: Psychological Perspectives*.

a lesbian" (2013, p. 214). Also Guzewicz underlines, referring to Kuby, that "nobody has so far discovered a gene determining homosexuality" (2015, p. 78).

In anti-gender publications the authors refer not only to the known popular science books, such as *Brain Sex* and the guides from the series on Mars and Venus, but also to the publications by Polish scientists, neurobiologists. Two professors of considerable standing appear often in the news – they are Anna Grabowska[3] and Jerzy Vetulani[4]. For example, an interview with Vetulani was made by Agnieszka Niewińska in *Raport o gender w Polsce* [Report on gender in Poland] (2014), and popular science work by Grabowska was referred to by numerous anti-gender commentators, including Marzena Nykiel (2014, p. 268), Paweł Bortkiewicz (2014, p. 64) and Mieczysław Guzewicz (2015, p. 101). Both scholars opposed incorporating their scientific work into anti-gender activism. However, before I present their reactions to the debates over gender, I am going to describe the ideas that Vetulani and Grabowska popularized in the mainstream media. As we are going to see, the reception of the brain sex indicates that complementarity and sentimental attitudes towards gender differences remain transparent both in pop-scientific discourse and liberal media.

The brain sex in the mainstream media

At the beginning it needs to be emphasized that the differences in the build of women's and men's brains are not the main scientific interest of both neurologists. However, Grabowska and Vetulani were making this concept popular in the media. Moreover, the professors' opinions are not identical: Grabowska limits her scientific work to neurobiology, whereas Vetulani synthesizes various reductionisms – he adds sociobiology and geneticization to his deliberations on the brain sex. He claims, among others, that the differences in the brains of women and men have shaped in the course of evolution, and "the biological objective of our existence is to ensure immortality to our genes" (Vetulani, 2010, p. 145). Moreover, Grabowska nuances her opinions. For example, she makes reservations that differences in build and functioning of the brain have statistical character, and therefore there are many

[3] Prof. Anna Grabowska is a neurologist, the Head of the Faculty of Experimental Neuropsychology of the University of Social Sciences and Humanities and Head of the Laboratory of Psychophysiology in Nencki Institute of Experimental Biology of the Polish Academy of Sciences. She is scientifically interested above all in the lateralization of the brain and dyslexia.

[4] Prof. Jerzy Vetulani (1936–2017) was a neurologists and biochemist, the Head of the Department of Biochemistry of the Polish Academy of Sciences in Cracow and a popularizer of science. He was scientifically interested above all in research of antidepressant substances and addictions.

exceptions to them. Moreover, the differences are not necessarily inborn and their translation into behaviour is not established. However, the reservations do not influence on the general thesis presented by Grabowska and the presented reductionism. For example – despite the above reservations, the popular and scientific article by Grabowska titled "Female brain, male brain that is why we are different" suggests with reductionist verve that the differences between men and women may be explained with the use of differences in the build of brain (2014). The theses of the decisive significance of "biological factors" can be found also in the text. Similarly, in Vetulani's writings one can find a statement that "functional significance [of differences in the brain built] is still unclear in many cases" (2010, p. 159); next, however, the professor conjectures a story about the brain sex as if the mentioned differences were absolute and explained human behaviours to the full.

Both Vetulani and Grabowska emphasize that female and male brains are different, but their various functions complement each other. "Female world – male world … why is it so difficult to communicate? Why are our brains absorbed with different matters and why do we perceive the reality around us so differently?" – Grabowska starts her post-conference article, referring to the narrative, well-known from the series of guidebooks for heterosexuals, about the crisis connected with the (allegedly) radically different constitution of men and women (Grabowska, 2004, p. 179). Similarly, Grabowska explicitly refers to the idea used in such publications that knowledge about the brain sex leads to heterosexuals living in agreement. She writes: "Getting to know and making oneself aware of the differences may help us arrange the proper relations between sexes based on respect and acceptance of one's difference" (Grabowska, 2014, p. 4). Similar statement is said in the interview with Grabowska to "Znak" monthly: "making oneself aware of these differences and their character may help us better understand our own sexuality and one another. With such knowledge, it is easier to have respect and understanding for another person's differences, which are reflected also in the person's gender" (Siemienowicz, 2014, p. 13). Grabowska sentimentalises the gender difference. She states that "we derive a lot of joy, a lot of wonderful experience – not only in the sexual sphere – from the fact that there are two genders, that our children are of two genders" (2014, p. 10). In all the above-mentioned examples, one thing should be found puzzling, namely the use of the first person plural. Who is the "we", to which the author refers? Who is being excluded? For sure they are LGBT persons. It comes as no surprise that sentimentalisation of the sexual difference transfers into perceiving heterosexual relationships as model ones. Grabowska, asked

about the result of upbringing of children by single sex couples, stated that there is little research concerning the subject and it does not necessarily examine the most important aspects of non-heteronormative parenting:

> A more important issue is whether such children, when they grow up, would be able to create partner relationships with the opposite sex, or whether they would fall into the trap of the indeterminacy of gender and gender roles. Together with all the negative consequences related to it, both for personal happiness and for social functioning (Pietryga, Kozik, 2013).

Heteronormative complementarity is openly adopted here: Grabowska implies that heterosexuality is necessary for both happiness and social order, with binary gender roles guaranteeing the stability of heterosexuality. Not only are sexual non-conformists unhappy, but they also have negative influence on society.

Vetulani referred directly to complementarity in popular science introduction to neurobiology from 1985, in which he stated that "you cannot pass some visible psychological facts over in silence. Of course it has nothing in common with discrimination: eventually both sexes also should be analysed as complimentary creatures, not antagonistic ones" (1985, p. 51). For Vetualni, complementarity is not only the answer to the accusation of discrimination, but it is also totally naturalised, hence, non-controversial. However, in his later, more known writings, Vetulani explained heterosexuality by referring above all to sociobiology. Vetulani also underlined not complementarity, but the opposing reproductive interests of individuals of different genders. In this vision of sexuality, women, driven more or less consciously by the need of reproduction, aim at persuading genetically superior men to monogamy , while men try to impregnate as many women as possible.

Vetulani and Grabowska also considered theories of the brain sex concerning sexual orientation and gender identity. Grabowska suggests the relationship between the build of brain and sexual orientation many times, but she does not perceive this subject to be ultimately solved by science. For Vetulani, on the other hand, there were no doubts that sexual orientation results from the sexual inversion of the brain. The professor referred to well-known and broadly discussed research by Simon LeVay and Dean Hamer, and also to research on rams[5]. He adopted biological determinism of sexual orientation; however, he

[5] Ewes are a subject of interest for scientists due to the high percentage (ca. 8%) of males preferring copulation with males. Vetulani refers to rams many times, but he does not provide any information about the authors of the date of the research.

described homosexuality as "asocial behaviour" (2010, p. 179)[6]. In accordance with the brain sex tradition, but opposite to the contemporary medical classification, Vetulani claimed that transsexuality is a kind of homosexuality (2010, p. 168, 176). Thus, as far as their attitude to homosexuality is concerned, Vetulani and Grabowska remain more loyal to the pop-science understanding of the brain sex than right-wing, anti-gender journalists.

The dispute about gender, which directly wove the brain sex in Catholic anthropology, did not do any harm to the perception of the discourse as scientifically confirmed. Anti-gender activists referred to Grabowska's and Vetulani's articles, but the scholars dissociated themselves from this incorporation. In their replies, they presented their views as objective scientific truth, undermined by two opposite ideologies: gender and feminist ones. Vetulani stated:

> On the one hand, we have the Catholic church, which makes a bugaboo or even the enemy from gender; on the other hand, there are some feminist circles, which do not want to acknowledge some biological differences concerning the brain. Meanwhile, discussions on the issues connected with sex and biology have been going on in the world for a long time, and it is among competent scientists (Rotkiewicz, 2015, p. 149).

Vetulani made it clear many times that in his opinion feminists are not competent scientists. They do not argument, they "brawl" (Vetulani & Mazurek, 2015, p. 31). It is difficult to say whether the professor was not familiar with considerable achievements of biologists who indicated – at least – significant limitations of the brain sex, or whether he simply ignored it.

Both Grabowska and Vetulani perceived the opposition of feminists and gays as firmer and more influential than the opposition of the Church. For example, Grabowska writes:

> The subject of differences between sexes turns up like a bad penny in the media and popular press every time a person known in political or scientific circles breaches the binding canon of political correctness, assuming the absolute equality of women and men. Then the media hype lasts usually not more than a dozen or so days, and life goes on (2014, p. 1)[7].

Most probably he means the following article: Charles E. Roselli et al.,*The Volume of a Sexually Dimorphic Nucleus in the Ovine Medial Preoptic Area/Anterior Hypothalamus Varies with Sexual Partner Preference*, "Endocrinology" 2004, No. 145, p. 478–483.

[6] Vetulani's attitude to sexual variance is also visible in the manner in which he describes females of hyena. In his opinion, these animals are ugly, abnormal (2010, p. 123) and "disgusting" (2010, p. 159), because their looks – including the looks of their genitals – resemble males.

[7] Grabowska may refer here to the statement by Laurence Summers, the ex-president of the University of Harvard, who during a public lecture in 2005 suggested that the small representation of women on the most prestigious posts in natural sciences may result from statistically smaller number of scientifically gifted women. The president's words caused a scandal

Contrary to what both scholars state, feminist criticism of scientific research did not become known on a large scale in the Polish press or public opinion. As a matter of fact, Vetulani on describing the opposition of the feminists against the brain sex, referred to some events in the Netherland in the eighties. He did not provide any footnotes to the presented anecdotes. However, it did not stop him from stating that "all the research indicating sexual dimorphism meets very strong opposition. However, it comes not from leading neurobiologists, but from feminist activist who have very slight neurobiological knowledge" (Rotkiewicz, 2015, p. 151).

Accusation of ideological and non-scientific character is a rhetoric strategy which allows to ignore the results of research that do not comply with one's vision of the world. Simultaneously, in Vetulani's statements one can see a naïve belief that science should be uncontaminated with social factors: "Similarly as in case of the announcement of Copernicus's or Darwin's theory, ideology – of any kind – has to step back from confrontation with the progress of science", wrote Vetulani, additionally legitimizing his opinions by comparing them with the legacy of the famous discoverers (Rotkiewicz, 2015, p. 151).

Vetulani thought that also research on the biological basis of male homosexuality "was questioned due to ideological reasons" (2010, p. 174) and caused "violent protests of the gay community" (Rotkiewicz, 2015, p. 150). It is not known what protests the professor meant. In the West sociologists were surprised at the defence of "gay brain" and "gay gene" by the significant majority of the gay movement (Brookey, 2002; Terry, 1995). Meanwhile, in Poland the revelations about the gay gene and the gay brain did not meet with strong reactions of LGBT activists[8]. It was the proponents of reparative therapy, Catholic and anti-gender activists, who polemicized in the media with the theory of the gay brain (Hall, 2016). However, Vetulani did not mention the criticism from the right-wing activists, but from gays. Determining the criticism as "ideological" allowed – again – for ignoring it substantially, and at the same time placed Vetulani on the position of an objective guardian of scientific truth, attacked by the Left: feminists-ignoramus and enraged gays.

Articles, books and lectures of both professors were given a warm welcome both in conservative and liberal circles, religious and secular ones. For example, Vetulani's book *Mózg: fascynacje, problemy, tajemnice* [Brain: fascinations, problems, and mysteries], which is

in the United States and obtained a lot of publicity abroad in the media. In Polish liberal mainstream press, the words were acknowledged as true many times and Summers was presented as a victim of political correctness.

[8] "Replika" does not ponder over the causes of sexual orientation and biological determination of homosexuality. "Inaczej" rarely and with reserve mentions the revelations of foreign scientists.

a collection of press articles and unpublished popular science texts, was issued in "homini" publishing house ran by the Benedictines. It had four editions in four years and obtained the title of The Cracow Book of the Month. An extended interview with Vetulani was published by prestigious "Czarne" publishing house in a series "No rush", advertised as "penetrating and important discussions about the most important issues". Moreover, Vetulani's article devoted to the brain sex and neurobiology of sexual behaviours was published in 2006 in liberal-leftist weekly "Polityka" (Vetulani, 2006). Vetulani himself obtained the title of "The Rationalist of the Year 2011" from the Polish Association of Rationalists working for secularity and rational thinking . He was also –perhaps most surprisingly – a member of the Committee of Honour of Warsaw's LGBT rights march Equality Parade since 2015. Numerous lectures by Grabowska, given as a part of events advertised in liberal press, such as The Festival of Science or The Brain Week were discussed in both popular science press (Lewandowska, 2001) and Catholic press (Różek, 2014). Similarly, Vetulani gave lectures during popular science events, including the ones organised by "Polityka". Therefore, it can be said that in liberal discourse the brain sex still functions as a neutral, commonly accepted scientific fact. Gender inequality is being covered up with a story about the scientifically stated difference and the ideology of gender complementarity that grants heterosexual attraction. Meanwhile, the scientists are presented as the discoverers of the laws of nature who emerge victorious from the conflict with political correctness and the illusions of individuals concerning equality. Complementarity and heteronormativity remain unnoticed and unquestioned in the process.

Conclusions

Whereas in right-wing discourses the brain sex provides justification of the Christian world view expressed in the language of science, in the liberal press the scientific aura of this concept allows to public sexist, discriminatory statements which would not appear there in any other context. Allow me to provide a few examples: "When it comes to culture, we would like gender equality, but it is not in compliance with our nature", stated a journalist from "Gazeta Wyborcza" in 2008. "Let's not be too eager about equality", an evolutionary psychologist agreed (Ulanowski, 2008, p. 24). "Women more and more often work in male's professions, although they have smaller predispositions to some of them, because of various reasons", "Polityka" stated in 2005, commenting the news

about the brain sex (Szymborski, 2005, p. 78). Members of privileged groups discussing the alleged limitations and obligations of minorities should be always treated with scepticism. However, science enjoys a lot of prestige in Western culture: the title of a professor, the charm of a white lab coat or, as Karen Messing put it, "the scientific mystique" situate the subject as impartial and free from emotions, prejudices and interests (1983, p. 75). Polish liberal discourse turned out to be unusually susceptible to this mystique – it can be explained with the fact that the scientific discourse constituted the fundamental tool in the fight with the political significance of the Catholic Church growing after 1989 and argumentation referring to religion. Science was also equalized with modernization, and it constituted a component of the liberal narrative on Poland's return to the Western world after the political transformation of 1989. However, in the subject of gender roles, the involvement of the liberal discourse in the reductionism expressed in the language of science allowed the liberals not to revise controversial and discriminatory beliefs on sex and gender. As a result "the scientific mystique" strengthened the radical right wing, which was able to introduce the word of "gender" to the public discourse in the meaning imposed by the right-wing and to present feminism as a social movement standing in opposition to the findings of science.

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"Let's not be too eager about equality" – brain sex, heteronormativity, and the scientific mystique

The article analyses the role of the brain sex in Polish public discourse of the last years. The authors of a popular book *Brain Sex* claim that differences between women and men stem from their different brains and thus they are universal and unchangeable; feminism is based on misrepresentation of science. This thesis was overtaken by right-wing journalists, as it gave scientific justification to conservative gender politics and complementarity – the gender ontology of the Catholic Church. However, in the right-wing journalism a significant aspect of the brain sex theory is silenced, namely, the claim that homo- and transsexuality result from disorders in brain development, they are unchangeable and should be accepted. Despite its conservative roots, the brain sex was popularized not only in right-wing, but also in liberal media. The aura of science that accompanied this popular idea allowed to naturalize anti-feminism and heteronormativity. This phenomenon is discussed on the basis of media activity of two Polish scientists, popular both in the right-wing and liberal media: Anna Grabowska and Jerzy Vetulani. Both present the brain sex theory as objective, universally accepted truth, attacked in the name of the leftist ideology by ignorant activists who deny science.

Keywords:

brain sex, gender, science, homosexuality, reductionism

„Nie popadajmy w przesadę z tą równością" – płeć mózgu, heteronorma i mistyka naukowości

Artykuł analizuje rolę płci mózgu w polskim dyskursie publicznym ostatnich lat. Autorzy niezwykle popularnej w Polsce książki *Płeć mózgu* twierdzą, że różnice między kobietami i mężczyznami wynikają z różnic w budowie mózgów, a przez to są uniwersalne i niezmienne, feminizm zaś jest oparty na fałszowaniu nauki. Teza ta została podchwycona przez prawicowych publicystów, ponieważ nadawała naukową legitymację konserwatywnej polityce płci oraz komplementaryzmowi – ontologii płci przyjętej przez Kościół katolicki. W prawicowym piśmiennictwie przemilcza się jednak istotny aspekt płci mózgu, mianowicie twierdzenie, że homo- i transseksualność wynikają z wad w rozwoju mózgu, są niezmienne i powinny być akceptowane. Mimo swoich konserwatywnych korzeni płeć mózgu była popularyzowana także w mediach liberalnych. Nimb naukowości, którym otaczany był popularny pogląd, pozwalał naturalizować związane z nim antyfeminizm i heteronormatywność. Zjawisko to omówione jest na podstawie działalności popularyzatorskiej dwojga naukowców, cieszących się popularnością zarówno w prawicowych, jak i liberalnych mediach: Anny Grabowskiej i Jerzego Vetulaniego. Oboje przedstawiali płeć mózgu jako obiektywną, powszechnie

uznawaną naukową prawdę, z którą w imię lewicowej ideologii próbują walczyć nieakceptujący ustaleń nauki aktywiści.

Słowa kluczowe:

płeć mózgu, gender, nauka, homoseksualność, redukcjonizm

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