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Challenges of Intersectionality in Gender, Science and Technology*

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Abstract

This article reflects challenges regarding the interrelations between gender, science and technology (GST). The context of the commemorative event of 20 years of the Gender Studies Center - PAGU, was a great opportunity to conduct such a debate, allowing us to do a collective analysis of the trajectory of this field in Brazil and abroad, especially about the contributions of PAGU in the last decades.

Keywords: Gender, Science, Technology, PAGU.

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Introduction

This paper presents the main discussions raised in the Table "Challenges of Intersectionality in Gender, Science and Technology"[1] which integrated the activities of the International Seminar "Rethinking Gender and Feminisms," celebrating 20 years of the Gender Studies Nucleus – Pagu. The moment of celebration of such an influential institution as Pagu that has been training numerous professionals over the years allowed us a sociological perspective on what we continue to do today, after two decades, and what we will do in the future. And in that sense, there is nothing more appropriate than to reflect on the interrelations among gender, science and technology that are constitutive of modern life.

For some time, reflections on science and technology as social constructions have been questioning interpretations that have considered such activities as objective and rational constructions, apart from social relations. There is a growing number of historians, sociologists, anthropologists, biologists, among others - all feminists - who have contributed a significant critique of science and technology, incorporating gender perspectives into this debate.

Since the 1990s, when this issue was already institutionalized in the Anglo-Saxon world, but still little known in Brazil, Pagu opened this line of research – a research emphasis that still is not among the main currents of gender studies, particularly in Brazil. However, the researchers of Pagu quickly recognized that the relationship between gender and science (more than technology) brought an important contribution to gender studies. Thus, over the years Pagu has welcomed a large group of students who today are PhD students or PhDs working on this issue.

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[1] Round table held September 11, 2014 (9:00 a.m.), mediated by Dr. Maria Conceição da Costa (DPCT/UNICAMP), with presentations by Dr. Maria Margaret Lopes (PAGU/UNICAMP) and Dr. Martha Zapata Galindo (Freie Universitat, Berlin). Dr. Rebeca Feltrin, a researcher with the Miseal project, has been a collaborator for our GST activities.

Debate: Relations between Gender, Science & Technology

First it should be noted – as emphasized by Prof. Maria Margaret Lopes in many of her presentations - that, as researchers on the subject of the History of Science, Social Studies of Science and Technology (SSST [ESCT]), Science, Technology and Society (STS), we can not even consider that there are sciences that are not 'human': in other words, that there are no sciences and technologies that are not human, social constructions. However, whenever we refer to the subject, we need to justify that the constant polarization between natural, exact, and human sciences does not hold, but must prioritize those scientific activities that are less attractive for women, whether in terms of practices and potential careers or in terms of critical reflection on the part of feminist theorists or specialists in gender relations or women's studies.

As strongly pointed out by Prof. Martha Zapata Galindo[2], gender relations permeate the various areas of knowledge. What is the role of women in different areas? What is the relationship between men and women in science? How many women are there, how many are included, how many excluded? This issue continues to deserve our priority, particularly because it has been seen as a minor issue within the social sciences, i.e., as if women were already present in the sciences and that there were no more major issues to be raised and/or researched. The arguments assume that there is already a fair amount of women in science, in research in general, that women are project leaders, receive grants

[2] We will refer here to some of the central ideas of Prof. Martha Zapata Galindo's presentation, particularly highlighting observations stemming from her participation in ANPOCS, 2012, which confirmed for her the importance of women as pillars of research in Brazil [ANPOCS: Associação Nacional de Pós-Graduação e Pesquisa em Ciências Sociais/The National Association of Post-Graduate Researchers in the Social Sciences/ANPOCS). In her presentation, she addressed the social movements in the academic field and how gender studies has widened and offered space to issues that, although important today, were not seen as so important twenty years ago.

for doing many relevant research projects, etc. It is true that in Brazil, since the early 2000s, the number of young researchers at the level of Scientific Initiation [undergraduate majors] has surpassed the number of men. Nevertheless, as we point out, this matter has not been exhausted either in practical or theoretical terms. Recent articles about feminism and activity in science subjects and university courses show that European austerity policies have affected gender studies centers, closing centers, especially in England and reduced, if not cut, subsidies for investigations related to gender studies in other European countries. Thus, it is interesting to note that, in the name of economic austerity, government policies have once again ended up adversely affecting women.

As Dr. Zapata Galindo pointed out, many of the concerns about the intersections between science, technology and gender are common to us internationally, as in the case of Germany and Brazil - and especially to Pagu, an important center of reference in gender studies in Brazil. In Europe (and Germany in particular), there was an amazing plurality of feminisms that began with researchers (more theoretical) helping to form other groups, which, although without any very clear political identity, have acquired an important position. Important because they helped women to have access to, and evolve within, the scientific field. They also contributed to other marginalized groups gaining access to the scientific field. However, even though Europe has institutionalized inclusion measures, the results are still depressing. From an intersectional perspective, access is still very limited.

In Germany, these discussions have advanced in the last decade, constituted by an approximation of Luhmanian thought and critical theory, working with the theory of intersectionality. Excellent policies have existed in the European Union (EU), which showed a significant increase from 2006, but currently we are witnessing a precarious impoverishment of intersectional policies.

In this regard, there are still many difficulties in Germany, including the precariousness of women's work. Scientific excellence is articulated by generating funds and programs (such as Horizon

2020) that invest resources for scientific research and thus delineate research. The transversalization of the gender perspective, a subject that we consider important in recent years, has been propelled by intersectionality, which includes the recognition of diversity and is positioned with certain markers of difference - sexuality, religion, ethnicity, race, disability, etc. By 2008, in the EU, only Austria had applied the measures of inclusion proposed, and the other countries did not accept the quota policy. To the present, the new Eastern European members of the EU have incorporated almost nothing of these measures of inclusion. The countries of Latin America have tried to incorporate this debate, seeking to articulate it in different ways.

To continue discussing the issue of gender equality in S & T it is important to articulate three fundamental issues:

- Who does what and in what field?
- How are these actors are represented in scientific fields?
- How are the actors transformed into "heroes" in the history of science or are they simply forgotten?

Thus, aware of a global picture of the importance of the history of institutions and the role of women in science and technology, we must continue our struggle to maintain centers of feminist studies, such as Pagu, and for the greater visibility and space for women in the diverse areas of knowledge. To contribute to this perspective, we engaged in the Miseal project (Medidas para Inclusão Social e Equidade em Instituições de Ensino Superior da Américan Latina/Measures for Social Inclusion and Equity in Latin American Institutions of Higher Education), coordinated by Pagu in partnership with the Freie Universitat of Berlin (2012-2014). Its objectives were to promote processes of social inclusion and equity in Latin American institutions by proposing measures to improve mechanisms for access, retention and mobility in universities, the training of specialists on inclusion and equity and the articulation of a network of specialists focused

on joint research, collaboration and exchanges between European and Latin American universities.

One of the important results of Miseal was the implementation of a disciple of Doctoral Studies on Inclusion, Intersectionality and Equity [ESIINE] in Latin America. The ESIINE consists of an international cooperation program involving institutions of higher education in Latin America and Europe in an innovative initiative that aims to promote studies and research that address the multiplicity of factors characterizing the exclusionary processes related to different population groups in higher education in Latin America: the poorest sections of the population, people with special needs, ethnic/racial minorities, gender or sexual orientation.

In this sense, the various issues involving knowledge, as located and determined by historical conditions of production and mobility, provide ample scope for comparison and further studies. Encouraged by this proposal, colleagues in the DPCT/IG [Dept. of Scientific and Technological Policy/Institute of Geosciences/ Campinas], the IFCH [Institute of Philosophy and Human Sciences/Campinas] and Pagu developed two of the lines of research related to ESIINE, which refer to "Anthropology, Corporeality and Techno-science" and "The Issue of Science and Technology in the Social Sciences". Another result to be highlighted is the creation of the Observatório Transacional de Inclusão Social e Equidade no Ensino Superior (Transactional Observatory of Social Inclusion and Equity in Higher Education/OIE), designed to be a monitoring tool for production and dissemination of information and to facilitate the exchange between educational institutions, researchers, funding managers, governments, civil society actors and entities of transnational activity. The OIE has a normative mission that seeks to impact the formulation of measures and policies regarding social inclusion and equity in local institutions of higher education.

Deepening our studies on Latin America, we consider it important to understand how the field of SSST and gender studies – both with particular traditions in Latin America – have

approached each other, and how the dialogue between the two fields has evolved. We initiated a study on the conferences Iberoamericano de Ciencia, Technología y Género (Iberoamerican Conference on Science, Technology and Gender) and that of ESOCITE,[3] seeking to understand how gender studies have given importance to SSST by identifying trends, thematic choices, methodological difficulties, as well as to understand to what extent, in some Latin American countries, gender studies gives attention to STS studies (and STS – Science, Technology, Society – attention to gender studies). We also seek to examine to what extent Latin American production is disseminated in periodicals that center on such issues.

However, it is important to emphasize that it is impossible to develop this work without first going from a critique of the traditional and persistent views on Science and Technology. The term 'gender and science' appeared in the late 1970s coined by Evelyn Fox Keller (1978), an author who remains today a key reference in the field. As Margaret Lopes recalls, Donna Haraway - whose concept of cyborg (Haraway, 1991) became popular as an icon of these discussions - proposed to give attention to "modest witness" (Haraway, 1996). This work allows us to go back in time in search of the roots of postures that strengthen the supposed neutrality of science and technology, a 'neutrality' that seeks to exclude embodied people (with their diverse sexualities) from understandings of modern science. Donna Haraway widely promotes Elizabeth Potter's book *Gender and Boyle's Law of Gases* (2001) to discuss the issue.

Potter offers us an interpretive key to understanding the relations between gender and science. According to Potter, in the context of England in the 1600s, where gender identities

[3] ESOCITE: Associação Brasileira de Estudos Sociais das Ciências e das Tecnologias/Brazilian Association of Social and Scientific Studies and Technologies. This study, preliminarily presented in the Seminar, generated an article by Maria Margaret Lopes, Rebeca Buzzo Feltrin, Bruna Mendes de Vasconcellos and Maria Cleófas Faggion Alecar, "Interseções e interações: Gênero em Ciências e Tecnolgias na América Latina."

proliferated, the Anglo-Irish natural philosopher Robert Boyle proposed that he would assume the clear and binary distinction between men and women based on different modes of modesty: modesty that derived from corporal attributes that would define women and modesty derived from the attributes of the mind that would define men.

Modest men, who exercised the virtues of experimentation in strictly regulated public spaces, should be so auto-invisible that their bodies would not contaminate their experiments or their accounts of them, lending credibility to their descriptions of other bodies and minimizing critical attention regarding their own persons. Rich discussions, deeply engendered, but also very unfamiliar, made bodies 'disappear' for a long time from the scientific context, relegating questions of feminist theorists almost iconoclastic, such as "associating gender with science." This concept of male modesty is one of the ideas that have persisted and continue to be active, although they are rarely directly referred to. Such conventions regarding male modesty in respect to the mind in experimental practices rendered increasingly invisible any gender connotation respecting modern science. They transformed the civil, urban gentleman bachelor into an asexual ideal that would be uncritically shared and pursued even by women who have dedicated themselves to science in later centuries (Lopes, 2008).

Final considerations

All these questions about the interrelations between gender, science and technology, discussed during the event commemorating the 20th anniversary of Pagu, underlie the work that we have developed over the years with the support of this study nucleus. There is still a long way to go for greater inclusion of women in science and technology, but the fact is that already a lot of progress has been made in that direction. In recent decades, there was a huge expansion of these disciplines, as can be seen in the growing number of publications relating gender, science and

technology, both at scientific conferences, and in publications in academic journals.

Since scientific and technological knowledge is situated and determined by historical conditions of its production, thus comparative studies, cooperation in research, and mobility in graduate school pose possibilities of consolidation of the fields of gender studies, science and technology.

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