Subject: [Bsc-es] Equity4ES Gazette #9 - October 2024
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Date: 07/10/2024, 17:11
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October 2024 Issue #9

War, Inequities, and Science

Welcome to the ninth issue of the Equity4ES gazette!

In these issues, we cover the latest debates on gender equity. We bring to the table arguments in favour and against topics, policies and initiatives that are being proposed around the world to address gender gaps in the workplace, science and the public sphere.

This ninth issue aims to highlight the impact of war on inequity and the importance of creating spaces to debate these topics within the scientific community.

War and Inequity

It is not hard to imagine how war tears down communities and strips vulnerable groups of the resources, time and energy to make advancements towards their rights. But war does not simply leave things stagnant; it also worsens the already-existing forms of oppression, such as patriarchal oppression.

One of the direct ways in which gendered violence manifests during conflict is through the

use of sexual assault as a weapon of war, which is classified as a war crime under International Humanitarian Law [1]. In spite of this, the tactic is often used systematically rather than as a series of individual acts conducted by ‘rogue soldiers’ [2, 3].

Aside from its intentional weaponization, war-torn regions also tend to experience an increase in violence against women and gender minorities as a ‘side-effect’; as social tensions rise and civilians are put in vulnerable positions due to the loss of shelter and material resources. On top of this, the destruction of critical infrastructure such as hospitals and roads directly affects people's sexual and reproductive rights, complicating access to menstrual hygiene products, birth control, hormone replacement therapy, abortion, and pre- and post-natal care [4].

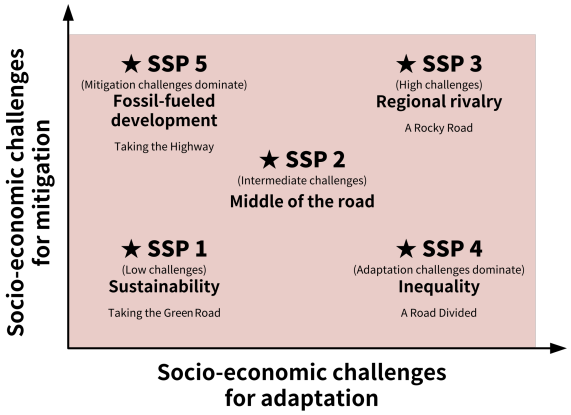
Civilian men and boys can also suffer disproportionate impacts due to the sexist association of masculinity with violence. For example, men may be presumed to be combatants solely based on gender and age [2]. This constitutes a form of gender-based discrimination in itself, and it can also obscure the real number of civilian deaths caused by military operations [5]. For instance, US administration officials have stated that during the Obama administration, counter-terrorism policy in the US government counted "all military-age males in a strike zone as combatants, (...) unless there is explicit intelligence posthumously proving them innocent" [6].

Aside from its direct local impacts, war also has an indirect impact on vulnerable populations through its socioeconomic and environmental consequences. For example, some effects of the war in Ukraine, such as impacts to the global supply chain, have widened gender gaps, food scarcity and energy poverty globally [7]. When famine, precarious medical services and climate change are worsened by armed conflict, the impact is disproportionately felt by women and other marginalized groups, such as those with fewer financial resources and people in the Global South [8].

War and the Environment

War not only causes environmental degradation but also undermines global efforts to combat climate change. The scientific community warns that scenarios deviating from peace and collaboration result in higher levels of global warming, with severe impacts on climate and biodiversity. The latest IPCC report describes the worst-case projected scenario as:

> SSP3: Regional rivalry (A Rocky Road)
> "A resurgent nationalism, concerns about competitiveness and security, and regional conflicts (...) A low international priority for addressing environmental concerns leads to strong environmental degradation in some regions." [9]



Source: Wikipedia - Shared Socioeconomic Pathways

We can all agree that projecting the future is challenging given the myriad opportunities for humankind to make "right" or "wrong" choices. However, we don't have to imagine much when current wars perfectly illustrate the environmental costs of conflicts. Russia's invasion of Ukraine has generated at least 175 million tonnes of carbon dioxide equivalent (tCO2e) from direct warfare, landscape fires, rerouted flights, forced migration, attacks on fossil fuel infrastructure and future reconstruction [10]. Similarly, the first two months of Israel's invasion of Gaza produced 281,315 tCO2e, greater than the annual carbon footprint of over 20 of the world's most climate-vulnerable nations [11]. But what is worse, these contributions to climate change occur with political impunity under the excuse of "exceptional circumstances" [12].

Additionally, climate change itself can be a catalyst for conflict. As global warming progresses, extreme weather events and resource scarcity become more common, threatening livelihoods and sparking disputes, particularly affecting vulnerable communities. For example, recurrent droughts in Syria caused competing political factions to weaponize water for their own ends [13] and recent conflicts emerged in New Caledonia, a paramount nickel source, as France wanted to increase the colonial control over the territory [14].

As we consider the ethical implications of our actions, it is clear that addressing climate and war requires a commitment to actions that benefit the society as a whole, without exceptions. Humanity and the planet we live on depend on it.

War and AI

The role of science and new technologies should also be considered when discussing the impacts of war on society and on social inequity. In particular, AI (Artificial Intelligence) is increasingly being developed and adapted for military purposes, where its capabilities are being harnessed for autonomous targeting and engagement systems.

These developments raise significant ethical, legal, and security concerns, primarily because these systems can make lethal decisions without human intervention [15, 16]. The issue is further magnified by the fact that while these autonomous systems are programmed to follow

rules strictly, they cannot make moral judgments, even when the laws of war themselves might be ethically questionable.

Such autonomous systems are already being developed and tested in military applications, transforming modern warfare [17]. Examples include robots with automatic machine guns featuring target recognition and engagement capabilities [18], autonomous UAV drones, robot dogs carrying machine guns and explosives [19], AI-controlled machine guns used in assassinations [20], and Israel's deployment of AI-based rapid target identification systems in the Gaza Strip [21, 22].

The ethical and legal complexities of AI in warfare demand a robust international framework focused on accountability, meaningful human oversight, and responsible development of autonomous weapons systems (AWS) [23]. The scientific community must play an active role in these discussions, as researchers and developers are essential contributors and enablers of this expanding application of AI. Many researchers at the forefront of these advancements are concerned and actively sharing their worries [24, 25].

Our expertise is vital to ensure these weapons are developed with clear ethical guidelines and rigorous safeguards.Through international collaboration among scientists, policymakers, and ethicists, and with adequate vigilance, we can ensure AI technologies are deployed responsibly and ethically, balancing innovation with global peace and security imperatives.

War, Ethics and Science

Scientific research and technological development may seem neutral to the broader research community, but when considering their ultimate outcomes, it becomes evident that they carry moral consequences and responsibilities, making true neutrality impossible [26]. For example, science and technology that is not open-source and accessible cannot be neutral, as it limits knowledge to the side with the resources to develop it. An example could be the patents in medicine and the inequity in the distribution of COVID-19 vaccines between different countries [27].

The bias in the development and knowledge distribution is even greater when it is related to military research, as this is always done in the most confidential way. Countries generally call for this military development as a measure of self-defence, but this same argument has also been used to justify invasion and imperialism. Historically, a large part of the science budget has been directly or indirectly aimed at military development.

It may be difficult to distinguish between scientific enquiry and technological activity for military purposes [28]. Many wars of the last century have been fought based on military-scientific races, e.g. the space race. Many of today's tensions between nation-states are due to scientific and technological developments, and in particular, weapons of mass destruction.

Therefore, the fact that the BSC is involved in military projects [29] cannot be passed as a neutral thing; it is already a political statement in itself as this project feeds the previously discussed logic. Although our research is not focused on military development, as BSC workers, we feel it is a moral duty to criticise the standardisation of this type of research in our institution. If our goal as individuals and scientists is to contribute to a more equitable society, we need to have spaces in the scientific community to discuss these issues.

Recommended reads

- Gendered impacts of armed conflict and implications for the application of international humanitarian law
- Sex and drone strikes: gender and identity in targeting and casualty analysis
- Stop Killler Robot
- Israel's Killer AIs
- The Era of Killer Robots Is Here
- Science and war (1983)
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Public Mailbox

As part of the Equity4ES initiatives, we have opened a **public mailbox** to collect **anonymous testimonials** and experiences regarding gender issues in the workplace. We would like to share these testimonies publicly to raise awareness of these issues amongst our colleagues. Other aspects such as suggestions, ideas and feedback are also welcomed.

Public Mailbox

Agenda

- **Monthly meetings** the **3rd Friday** of every month at **3 PM**.

Make sure to also follow us on Twitter:

Our mailing address is: **equity4es@bsc.es**