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# Whiteness Should Be Introduced to Postcolonial Critiques of FSTS

Abstract: Subramaniam et al. (2016) exhorts postcolonial critiques of feminist STS to include Indigenous and decolonial knowledges from Latin America. I suggest that these intersecting contributions should also theorize whiteness as an important and overarching power structure. Whiteness historically contributed to and contemporarily still contributes to the shaping of our understanding of gender, sexuality, disability, class inequality and race relations, but has also structured and informed colonial conquests and empires. This also applies to the hierarchies of knowledge established within the academy, where, for example, contributions from Indigenous communities remain irrelevant and ignored. My article, using broad strokes of the brush, hopes to briefly establish the importance of considering whiteness in postcolonial analysis as it; 1) has globally structured socioeconomic and political relations by race, 2) was established through colonial violence, 3) necessitated the social construction of whites as a racial category, and 4) procured societal protections by law, enabling its operations to become entrenched in the norms of contemporary (postcolonial) society.

**Keywords:** postcolonial epistemologies, knowledge production regimes, whiteness, race, violent power relations

Weißsein sollte in die postkoloniale Kritik der fSTS eingeführt werden

Zusammenfassung: Subramaniam et al. (2016) regen an, dass die postkoloniale Kritik der feministischen STS indigenes und dekoloniales Wissen aus Lateinamerika miteinbeziehen sollte. Ich empfehle, dass diese sich überschneidenden Beiträge auch Weißsein als eine wichtige und übergreifende Machtstruktur theoretisieren sollten. Weißsein wirkte historisch und wirkt in der Gegenwart auf unser Verständnis von Gender, Sexualität, Ableismus, Klassenungleichheit und Rassismus, und hat auch die kolonialen Eroberungen und Imperien strukturiert und geprägt. Dies gilt ebenso für die in der Wissenschaft etablierten Wissenshierarchien, in denen beispielsweise Beiträge indigener Gemeinschaften als irrelevant gelten und ignoriert werden. Mein Artikel möchte darlegen, wie wichtig es ist, Weißsein in der postkolonialen Analyse zu betrachten, denn Weißsein 1) hat sozioökonomische und politische Beziehungen weltweit nach der Kategorie race strukturiert, 2) wurde durch Gewalt etabliert, 3) machte das soziale Konstrukt von Weißen als eine Kategorie von race erforderlich, und 4) verschaffte sich gesellschaftliche Absicherung durch Gesetzgebung, die es ihr ermöglichte, ihre Eingriffe in den Normen der heutigen (postkolonialen) Gesellschaft zu verankern.

**Schlagwörter:** postkoloniale Epistemologien, Wissenschaftsforschung, Weißsein, race, gewaltvolle Machtverhältnisse

#### Introduction

Science and Technology Studies (STS) have advanced knowledge production by weaving together modes of historical and contemporary knowledge production with their social contexts, organization, and controversies. STS has convincingly established itself as a multidisciplinary field of science that is based on theoretical and empirical engagement with the material, while revealing that science and society cannot be studied in isolation but should be seen through a reciprocally complex tandem relationship that is constitutive of each other. In current times where COVID-19 has rayaged the world and disproportionately affected Black people and People of Color, followed by the shock waves that streamed through the world after the public witnessing of the murder of a Black man – George Floyd in 2020 through a teenager's cellphone camera – various fields of science including the neurosciences have begun reflecting on the relevance of race(ism) to knowledge formation and our understanding of the world.

Critiques of colonial science and their hierarchies are already established in the field of STS (Harding 1994, 2011; Schiebinger 2004; Seth 2009; McNeil 2005; Anderson 2002 to name but a few scholars), which is probably one of the pioneering disciplines of research demonstrating how science and their technosciences on the one hand, and the societal complexities, histories and cultures on the other hand co-constitute each other. These intersections are hardly obvious in the natural sciences including the cognitive neurosciences. It is interesting to me for example, that when the neuroscientists explore the notion of race and racism, they explore it with a detachment from themselves. Scientists in that field paint themselves as observants of a phenomenon that takes place 'outside' the confines of their scientific apparatus – a societal issue from which (neuro)science (and natural sciences at large) remain sterilised. Moreover, when race and racism are addressed as in some fields of the social sciences including Gender Studies, the approach taken is that of almost exclusively examining the effects of racism on Black people, Indigenous people and People of Color (BIPOC). While this approach has been fruitful in exposing the damaging effects of colonialism, enslavement and racialized discrimination, it still excludes the exploration of whiteness; a deep-seated socioeconomic political structure that not only generates the effects that are lived by BIPOC as race and racism, but one that also conceived the project of colonial subjugation.

I would like to start this endeavour by reflecting about the role of science in what is known and what remains unknown. I have been in higher education for twenty years now in the context of Africa, Europe and Northern America, and it surprises me, yeah it in fact shocks me to apprehend the fact that the histories and contributions of Peoples of Color in their integrity remain absent within the ivory towers. The Maya civilization, a non-white civilization, is historically one of the world's oldest civilizations, famed for having developed a highly sophisticated writing system and for possessing highly advanced scientific expertise in the fields of art and architecture (Proskouriakoff 1950; Spinden 1975; Stierlin 1964), agriculture (Coe 2011; Whitmore/Turner II 2000), mathematics (Thompson 1971; Kallen 2000) and the astronomical system (Leon-Portilla 1990; Coe

1992) is scarcely mentioned in academic discourse. That the Maya developed the most accurate pre-telescope astronomy in the world is a fact that is readily overshadowed by the Europeans' baptism of Galileo Galilei as the 'father' of observational astronomy. Even the site of the earliest mathematical texts available in the world upon which 'modern' mathematics was developed is outside the ideological west (Neugebauer 1969). I have come to understand through extensive self-educating, that the historical events and processes that have obliterated Black people and their cultures from the world's archive of remembering were perpetrated through physical acts of erasure and hence violence, and continue to be sustained in the academy through epistemic erasure and distortion. Whiteness as the author of the global (western) academy has established white cultures, traditions and ways of thinking or habitus as the academic ordinary. I have travelled through the fields of Physics, Mathematics, Gender Studies, Neuroscience and the Cognitive Sciences, Pedagogy and Teacher Training, Sociology and Philosophy and significantly few have thought about whiteness or understood its relevance in shaping their world. It is this seemingly universal ignorance that inspires my writing.

### Introducing the Concept of Whiteness

Whiteness is a social and political construction that is built upon a system of rules and values that strictly confer privileges and advantages to white people while elevating white culture to the status of the global norm. Charles Mills (1997) calls this taciturn 'agreement' among whites (knowingly or not) to exploit BIPOC, a Racial Contract.

Both globally and within particular nations, then, white people, Europeans and their descendants, continue to benefit from the Racial Contract, which creates a world in their cultural image, political states differentially favouring their interests, an economy structured around the racial exploitation of others, and a moral psychology (not just in whites sometimes in nonwhites also) skewed consciously and unconsciously toward privileging them, taking the status quo of differential racial entitlement as normatively legitimate, and not to be investigated further. (Mills 1997: 40)

Mills in the very first sentence of the first chapter of his aforementioned book declares that "white supremacy is the unnamed political system that has made the modern world what it is today" (ibid.: 1).

In this article I want to discuss the ways in which whiteness is structurally embedded into current postcolonial cultures of society. I make the claim that white western society is constituted by whiteness, even though whiteness as a system of power remains widely invisible because it carries the characteristic of blending already racialized-colonial arrangements and activities into the norm and out of sight through inexplicit whitening processes. I make the claim that whiteness is the norm around which epistemologies are created, and is as well

the norm that shapes every scientist's process of knowledge production, including that of the vigilant feminist STS scholar. Whiteness reproduces racialized structural hierarchies that have far-reaching devastating effects on BIPOC because they are not (easily) provable, observable, nameable and not necessarily intentional.

Whiteness is a complex matrix of power that sustains orders of control that consistently set Europe at the center of the world. It was historically established on the pillars of a) colonial conquest and violent subjugation, b) exterminations and genocides, c) a claim to racial purity and hence white supremacy, as well as d) an amassing of wealth (humans and land) that was strictly protected by law and channelled to people who could claim 'whiteness as property' (Harris 1993). "When a racial group's collective is backed by the power of legal authority and institutional control, it is transformed into racism, a far-reaching system that functions independently from the intentions of self-images of individual actors" (DiAngelo 2018: 20). Whiteness is a structure of power that is controlled by networks of white people and their institutions in the west, extending to non-western societies through colonialism. It is a configuration of economic, political and cultural intersections that are enabled and propagated by orders of difference, regulations of belonging and hierarchies of dominance within society, extended into educational institutions that remain unattended to by feminist and postcolonial STS.

While the "intersections between the concept of race, scientific reason and knowledge production have been well documented in postcolonial and race-critical science and technology studies" as one reviewer of this article rightly pointed out, there has been no direct focus in explicitly examining the role that whiteness has played in shaping these intersections. I am not going to attempt to cover the various disciplines to prove and expose their interdependency on whiteness. What I merely attempt to do in this article is to show (1) how whiteness became the unnamed political system that has made the modern world, and (2) why that is relevant for our consideration in postcolonial feminist STS critiques today, as whiteness as a global power shapes all (our) scientific endeavours by demanding continuous re-enforcement through a rigorous re-centering of white supremacy in culture, history, economic and political production, including a geo-cultural construction that assigns to and tries to maintain power in the west. I will skip through significant historical, political and socioeconomic events with the objective of highlighting the points I want to make. Do not therefore be disappointed that this article diverts from the singular in-depth study of a subject that is common in STS. I am hoping nevertheless for this to be a welcome invitation to the reader for further exploration into whiteness's relevance within their own discipline of focus and area of study.

The Academy as a Site for the Reinforcement of Whiteness and its Intrinsic Violence

The fact that knowledge about the contributions and histories of Black people, Indigenous people and Peoples of Color (BIPOC) to world civilization is neither readily available online nor within the university canon is not an innocent mishap. Western modernity is inseparable from the logic of coloniality: "modernity's elaborate facade of 'civilizing' and 'civilization' covers its necessary foundation in the terror-logic of imperial rule" (Mignolo 2011: ix-x). This logic of imperial rule is expressed by the extension of "European dominion over much of the world's territory in the Americas, Africa, Asia, and the Pacific Islands" (Bush 2008: 129), and the annexation and control of their knowledge as an expression of western modernity. Technology for example, in the service of whiteness continues to virtually reposition Europe and North America at a place of intellectual dominance, as master and lord, pioneer and civilizer. According to Ruha Benjamin, "the power of the New Jim Code is that it allows racist habits and logics to enter through the backdoor of tech design" (2019: 160). Benjamin gives the example of a "decarceration startup" (ibid.: 164) called Promise that "addresses the problem of pretrial detention, which impacts disproportionately Black and Latinx people who cannot afford bail" (ibid.: 164). Promise tracks individuals on its app through GPS monitoring, making policing and surveillance profitable and more efficient, thus enabling an already oppressive system - the prison industrial complex - to gain traction. The absence and erasure of BIPOC innovations, presence and their association to the founding of the academy contributes to the longstanding colonial tradition of conquest, dominance and (intellectual) subjugation.

Kavita Philip (2004) demonstrates how local indigenous knowledge is appropriated by whiteness and transformed by colonial science into a universal knowledge, while converting the native into an object of scientific knowledge. In an analysis of colonial policies for the preservation and commercial exploitation of forests, Philip illustrates how British forest officials exploited indigenous knowledge and organization: "The claim that tribals were a menace to the forest is, on the surface, a contradictory one, since early foresters themselves had often learnt from tribal knowledge of tress and forest products" (ibid.: 89). Furthermore, the tribal organization and segmentation of tribal groups "were directly useful in categorizing and predicting labour patterns" (ibid.: 94). Consequently, local tribes were utilized for the local administration of the colony including knowledge production in spite of the fact that they were considered primitive by the colonizing British officials; "a reification of a pure or elevated nature, along with its pair, an elevated cultural sophistication, was accomplished through contrast with a corresponding nature-culture pair, namely, low or debased nature and low or primitive culture" (ibid.: 36). Thus, the economic interests and progress of the Forest Department sponged on "a discourse of moral progress from savage to civilized" (ibid.: 68). "Citation practices are political, especially when we start talking about "innovation" - oppressed people and places are rarely cited for their many inventions" (Benjamin 2019: 178). From this analysis it is clear that the invention of the dichotomies of objective/subjective, universal/local, modern/premodern, scientific/non-scientific by western colonial science depend on whether that knowledge is under the autocracy of white power structures. BIPOCs absence within academic intellectual literature is embedded in this tradition.

The simultaneous erasure of indigenous knowledge, and the elevation of white western knowledge themes exposes the locus of power when it comes to knowledge claims (Kessé 2018). It follows then that racialized patriarchal structures control access and the reproduction of knowledge including the sustaining of certain specific (white) epistemologies at the centre. The default power norm in the academy is a white norm (Kilomba 2010), i.e., that which can be most easily accessed in the public domain anywhere through any media - online, in books, through stories and movies, on Billboards, you name it. Accordingly, access to and distribution of knowledge and information is political. Jay Dolmage notes that "colleges and universities were colonial projects - places for settlers to continue the work of forcibly changing their landscapes and these landscapes' inhabitants, but also as sites of a sort of internalized imperialism, because universities were mainly places where North Americans went to Europeanize" (2017: 14). Stolen appropriated knowledges from Native peoples that are transformed by colonial science into a universal knowledge continue to work in the service of whiteness. This is in itself an expression of imperialism that is justified by claims of white supremacy, as in the example of 18th century white colonists who began to catalogue Indian remedies, while subverting Native Indian medicine and pharmacology and appropriating it. "Colonial intellectuals shared ideas and data acquired in Africa and the Americas. European academics were synthesizing much of this material" (Wilder 2013: 186). These actions reveal not only the dependencies of scientific knowledge production and coloniality, but also the framing that whiteness gives the whole construct.

The Academy and its Interdependencies with and Investments in Coloniality

The Spanish empire was one of the largest empires in history, and one of the most powerful, controlling vast portions of the Americas, territories in western Europe, Africa, and a number of islands in Oceania and the Pacific (Lockhart/Schwarz 1983; Echávez-Solano/Dworkin/Méndez 2007). In the early modern period, Spain's predominance in Europe posed a threat to England. Before the British Empire could establish a colony on the shores of America, the Spanish Empire had already established its rule, having already conquered and incorporated the Indigenous Empires of the Aztec 1519-1521 and the Inca 1532-1572 (Morgan 1975; Gibson 1964; Spalding 1973). The European invasion of the Americas, India and Africa offered white Europeans the opportunity to increase their wealth, expand their markets and acquire global dominance. Conquest was always a question of amassing wealth, power and control. It was a project that required militarization and the use of violence to forcefully possess and dispose peoples, their property and land, the rich natural resources therein and their bodies. Conquest of Indigenous peoples involved mass genocide and assassina-

tions (Naimark 2017) that mercilessly wiped-out whole nations of people (Tarver/ Slape 2016), with an estimated 70 million (out of 80 million) Indigenous people succumbing to this massacre. "Justifications for conquest have taken many forms. The most popular is self-defence, [the second popular justification is/was] a purported duty to spread Christianity, [and of course] the desire to help or civilize Native peoples" writes Joseph William Singer (1991: 98) in his review of Robert Williams (1990) meticulous work on the American Indian in western legal doctrine (square brackets by ENK).

Conquest was justified by whiteness's claim to full humanity, biological purity and a cultural sovereignty that assumed racial inferiority of the Native Nations (Mignolo 2011). "Modernity' became - in relation to the non-European world – synonymous with salvation and newness" (Mignolo 2009: 43). But the western imperative of modernity relied on coloniality to establish its rule, "the double colonisation of time and space. The double colonisation was tantamount with the invention of European traditions" (ibid.: 43; Mignolo 2011). Mignolo in quoting historian Karen Armstrong (2000) underscores that, European achievements relied not only on economic exploitation through time colonialism but also on knowledge/epistemological progress achieved during the European Renaissance of the 16th Century. Armstrong (2000) notes that the Europeans "achieved a scientific revolution that gave them greater control over the environment than anybody had achieved before" (ibid.: 142), which in turn established European supremacy over the non-European world through space colonialism. Science therefore was co-constituted with these conquests. This coloniality, both economic and epistemological, is the hidden dimension of events that established western modernity writes Mignolo. It involved the subjugation of non-European communities, the unethical trade of humans and a scientific/epistemic racism that was based on genocidal reasoning, "thus, hidden behind the rhetoric of modernity, economic practices dispensed with human lives, and knowledge justified racism and the inferiority of human lives that were naturally considered dispensable" (Mignolo 2011: 6).

Academia and higher education institutions had been deeply invested in these colonizing processes. Many of the prestigious universities we know today in England and the US were established by either settler colonists or merchants who participated in the slave trade. Renowned research institutions, universities and faculties in Germany for example were founded on the work and accomplishments of scientists who established their careers in the service of colonial exploitation; many of which are now named after these men (e.g., Robert Koch Institute, Humboldt University, Johann-Friedrich-Blumenbach Institute für Zoology und Anthropology – to name but a few).

The founding, financing, and development of higher education in the colonies were thoroughly intertwined with the economic and social forces that transformed West and Central Africa through the slave trade and devastated indigenous nations in the Americas. The academy was a beneficiary and defender of these processes. (Wilder 2013: 1)

Similarly, the history of university colleges in North America cannot be separated from interests stemming from institutions of higher learning in Europe, as it was the expansion of the European elite into the Americas through colonization, enslavement and the annihilation of Native Nations that led to the founding of these institutions. Establishing whiteness as a global power structure depended on it.

Whiteness and its Sustenance through Scientific Knowledge Production

The institutional apparatus of scientific knowledge production was part of a manufacturing apparatus for establishing the claims that whiteness made to 'white power autonomy' based on fabricated innate superiority. Whiteness claimed the bodies of African peoples in the colonies and the lands and bodies of Native Peoples as priced possessions in the development of this scientific knowledge and related theories (Marks 2005; Dolmage 2017; Mosby 2013). Bodies and lands of the colonized served as offshore laboratories for producing invaluable information about for example the treatment of disease and injury, and their lands were exploited as resources to finance these projects.

The entire civilization project has included not only rights of access to 'nature' or 'resources' that include indigenous lands and sacred sites but also bodies, blood, and bones of Indigenous and other marginalized subjects. Modernity also requires and in turn supports civilizational hierarchies of bodies and their knowledges with indigenous peoples being viewed as primitive, albeit sometimes the noble savage, in both regards. (Subramaniam et al. 2016: 419)

One example of this scientific exploitation is the medical research of Robert Koch. Koch won the Nobel Prize in medicine for his contributions in developing a cure for Tuberculosis, and was one of the most important microbiologists of the 19th century. His medical experiments on Africans (Webel 2019; Bauche 2017) including peoples from the regions under the colonial administration of the German and British governments (Zimmerer 2013; Eckart 1997) is a fact that is not readily available for public scrutiny. In experimenting for the treatment of the illness caused by tsetse flies for example, Robert Koch used the bodies of African people already terrorized and subjugated through militarization as sites for the identification and classification of these disease-causing pathogens. His lack of hesitation in carrying out unconsented experimental treatments on African patients, involving life-threatening doses of Atoxyl which is a reagent containing arsenic (Bauche 2017; Amberger 2020; Kellerhoff 2020), demonstrates the European view of who is considered human, and which lives are counted as valuable. Experiments of this kind even then, were unethical and could not be tested on humans in Europe (Bonhomme 2020; Amberger 2020). Atoxyl was known to cause agonizing pain, shivers, divers health distortions including loss of sight and even death (Eckart 1997; Bonhomme 2020). These side effects were inconsequential to Robert Koch when dealing with Africans as

long as this treatment could be defended in the name of scientific method and efficacy. Eckart (1997) underlines the inhumanity that was ascribed to the African patients who were regarded as second-class humans or even as sub-humans in the sense of the at the time widely spread social Darwinist racial doctrine. This inhumanity can be further understood through the scientific racializing lens that allotted worth to whiteness and value to Bodies of Color only in as far as they could be put to the service of an imperializing power system. Please note that whiteness here does not only mean being racially white, but it constitutes all the necessary constructions (and their supporting structural matrices of power) that are put in place as pillars in order to induce and sustain the social realness of carefully manufactured meanings of racialized difference. The bodies of Africans were thus made valuable through their objectification as sites of dangerous therapeutical and pharmacological research, and their bodies were transformed into living incubators for the development, observation, and progression of the disease-causing microbes.

Robert Koch received acclamation for his work with one of the world's first biomedical research institutes being named after him. The Robert Koch Institute is the government's federal agency safeguarding of public health in Germany, and is currently leading the country's response to the COVID-19 pandemic (RKI 2022). Koch's legacy is associated with pioneering biomedical advancement and cutting-edge research – unburdened by the lives it cost to establish this status. This 'unburdening' of oppressive systems of their guilt, shame and responsibility is an aspect of whitening - a process inherent to the way whiteness operates as a (violent) norming global structural system. The humans whose bodies and matter were unethically used without consent to pave the way for therapies and preventive measures for sleeping sickness (and other tropical diseases) were never recognized or rewarded for it. The fact that information contextualizing the products of his work as part of colonial exploitation is hardly available within academic discourses points to the power of whiteness to frame knowledge and induce 'colonial amnesia'. In his 2015 commentary on the rebuilding of the Humboldt Forum in Berlin, which is considered the German equivalent of the British museum, Jürgen Zimmerer writes that even this building serves to represent the political vacuum existing in Germany's remembrance politics with regard to its colonial crimes (Zimmerer 2013).

It was in fact upon their (BIPOC) backs¹ that colonialists, both those active through militarization and those who financed these projects, that white epistemologies for which they received rewards, professorships, academic degrees, built carriers and acquired positions of political power while securing high societal status and wealth, were established. For the powerful and privileged position of the colonial and imperial self to exist, epistemic violence was and still is an indispensable prerequisite (Singer 1991; Williams 1990). The university, related prestigious research institutions and other institutions of higher learning are locations that inherently contribute in the manufacture of whiteness, and can in fact be universally understood as a property of whiteness. The academy in all its expressions can in this context be understood as an artifact of whiteness.

The Invention of Whiteness and its Posterity through Law in the US Colonial Context

It was in the colonial assemblies of Maryland and Virginia under British colonial rule, that the human category 'white' was invented as a property of law (Battalora 2013; Harris 1993). Battalora explains that colonists brought with them the British common law to establish the parameters of the newly founded colonies. British common law privileged a patriarchal order that transformed a woman and her children into the property of the man that she married. "Under common law, marriage placed firmly within the control of a husband all property ownership, all economic matters concerning the household, the custody of children, and the responsibility to govern a wife's behaviour" (Battalora 2013: 9). In other words, the law conceptualized the relationship as follows: "man and wife are one – but the man is the one" (Williams 1947: 18). The man was white, signalling the constitutive burden of gender and race in sustaining the Empire founded on patriarchy, whiteness and white supremacy, while structuring a colonial society within a system of exploitative capitalism. In the colonial context that would later establish a racial distinction between white Europeans on the one hand, and People of African descent and First Nations people on the other hand, historians have established that there existed no widespread 'natural' antipathy towards persons with brown skins in the colonies of Virginia and Maryland before and in the early 1600s (Battalora 2013). There is evidence of African-European intermarriages and there were no references to affronts from the colonial community towards them, in fact, solidarity between African descent workers and European bond servants was a norm (Morgan 1998; Allen 1997; Morgan 1975). It was the tensions that resulted from a decreased number of indentured servants from Europe, the increasing demand for large numbers of underpaid laborers (to ensure the survival of this colonial capitalist economy), as well as the threat posed by a united labour force (that had fought against an exploitative plantation capitalist economy in Bacon's rebellion) that instructed the white ruling elite in Maryland to invent a societal reordering that would privilege white European bond servants over servants of African descent (Battalora 2013; Allen 1997; Roediger 1991).

In fact, it is in the sexual exploitation of women that whiteness found access and acquired representation in the law within the legal context of colonial North America, here further exposing the intricate interdependencies of race and gender. In the prohibition of 'mixed' marriages between people of African descent and those of European descent, "a new body of crime, called *miscegenation*" (Battalora 2013: 12) was created. This law effectively introduced a new and distinct category of people called 'white people', who were prohibited "from marrying specific categories of persons seen as not 'white" (ibid.: 7). White European women were punished with life servanthood for marrying men of African descent according to the 1681 enactment of the antimiscegenation law in Maryland, whereas it did not apply to white European men who married (or raped) women of African descent. Correspondingly, the position of the white European male was further elevated by law, as he alone was allocated unchecked access to all

female bodies, and especially the singular exploitation and possession of those female bodies of color and their offspring in service of his wealth.

Its focus on African women served to incorporate their sexuality and maternal capacities into their chattel status as a form of production, producing laborers who would also be considered commodities. African women were thus to be transformed into a special domain of sexuality, while their sexuality was reduced to a mode of wealth production at the same time. Under such conditions, any sexual violation of an African woman was then implicitly recharacterized (decriminalized) as 'wealth production'. (Martinot 2010: 40)

The introduction of whiteness as a socio-object did not automatically stabilize as a societal experience in the colonies of Virginia and Maryland. In fact, it took decades of indoctrinating 'poor white people' into understanding themselves as 'white' before the legal consequences of whiteness became a liveable social reality. According to Batallora (2013), it was the new set of laws that directed privilege to anyone who could make a claim to the new socio-object called whiteness that eventually created a social reality that hinged on physical appearance, and specifically on skin color.

An example of the set of laws enacted prohibited Africans from: holding public office and participating in political processes, owning white Christian servants, testifying against a white person, being part of the Armed militia and owning weapons or property and from participating in any kind of commercial activity. Furthermore, Africans could neither congregate in public places nor travel without permission, and were subjected to public leashing. Additionally, free women of African descent became tithable. Combined, these laws constructed African people as inferior to 'white people' and exposed them to harm, while at the same time linking Africanness to servanthood. It was no surprise that the law denying freedom from indentured service would soon be enacted, and that it would only apply to servants of African descent. White servants on the other hand could no longer be whipped naked (one needed permission from the courts), could hold public office after servanthood, and their labour arrangements were framed by contract. This rendered whiteness a special status deserving protection from the humiliation associated with public nakedness and physical punishment. The law began to link whiteness with an expectation of due process. Indentured white servants could make claim to the new status framed by whiteness, thus accessing a milieu of privileges, resources and freedoms that created a social divide between them and peoples of African descent. These laws

drove a wedge between 'whites' and those labelled other-than-white by creating very different consequences depending upon one's categorization. These different consequences impacted everyday life in profound ways. [...] and literally made 'white' people more valuable by allocating more resources to them, largely by stripping them from those of African descent and members of native tribes. (Batallora 2013: 46)

Additionally, material value was assigned to the status of whiteness, including the full range of access and authority over Black and Native people without fear or regard of civil consequences associated with criminal punishment. Consequently, Black and Native people were no longer considered persons, "but personal property, and were thus the objects of structural violence" (Bush 2008: 157). As a result, 'poor white people' who were economically oppressed by the ruling 'white elite' gained an elevated social status above African people and First Nations people. Anthropologist Audrey Smedley notes that the "visibility of Africans made it possible to structure the demarcation point of permanent slavery solely on the basis of color" (2007: 115). It is within this context and demands that 'white' became a meaningful social label for facilitating the establishment of strong ties between large numbers of poor laborers and the ruling elite of the colony. With this one stroke of the brush, the ruling class of the colonies once and for all settled the imminent problem of an unreliable and dwindling labour force while simultaneously tackling the threat of a united labour force amongst African and European labourers. Whiteness was sealed into law upon the pillars of the dehumanisation of non-whites, the construction of white purity through ideologies of implied white supremacy, and was made a social reality through the partisan redistribution of BIPOC wealth to people racially constructed as 'white'.

The concept of whiteness and its constitutive racializing meanings cannot be considered a phenomenon unique only to the US, but can be understood as a global one transferred and coffered by descendants of settler colonies from Europe (Bush 2008). White power cannot therefore be considered a unique power structure affecting only the US modern context, but it can be considered as a phenomenon transferred to territories (formerly) dominated by descendants of settler colonists who originated from Europe.

#### How Whiteness and Science Are Co-Constituted

It was only in the 19th century that science came into play towards openly defending white supremacy and the infrastructure of whiteness that it supported. Science gifted whiteness with rationale and with nature by claiming that it was biological. In his at the time ground-breaking publication "On the origin of the species", Charles Darwin (1859) claimed that humans had heritable traits that predisposed them either to survival or to extinction, and that only those with the strongest hereditary traits were predisposed to survive. Building upon Darwin's theory of natural selection Galton (1865) claimed that talent, genius and intelligence were transmitted via inheritance. He wrote:

If we were to select persons who were born with a type of character that we desired to intensify, – suppose it was one that approached to some ideal standard of perfection – and if we compelled marriage within the limits of the society so selected, generation after generation; there can be no doubt that the offspring would ultimately be born with the qualities we sought, as surely as if we had been breeding for physical features and not for intellect or disposition (1865: 321).

In his understanding, men (!) existed as types of races with diverging innate characteristics, and white men ranked sovereign above them all. Taking the example of the Native tribes of America he claimed that both their intellectual faculties and their cognitive affections were so deteriorated that the colonizing "Spaniards had to enforce the common duties of humanity by positive laws" claiming that "the nature of the American Indians appears to contain the minimum of affectionate and social qualities compatible with the continuance of their race" (ibid.: 321). The incognito human status of perfection was that of an able-bodied white man of higher-class status. Purity was implied in the understandings of what entailed a strong genetic make-up, i.e., biological purity, which was constructed as synonymous to what it meant to be white.

The Construction, Protection, and Reinforcement of Whiteness as Invisible Co-Constituencies for Science and Law

The term 'purity' uncovers the connection between the scientific efforts that claim whiteness' biological essence, and the laws that were necessary in protecting the resources required to uphold it. Purity had already been claimed as a property of whiteness in Maryland, and had been inherently constructed into whiteness even in the absence of biological 'proof'. In fact, at the preliminary establishment of the colonies of Virginia and Maryland, the status of 'Christian' was synonymous with being 'British' and 'European', and later with the category 'white'. Modernity was spearheaded by Christian Theology (Mignolo 2009; 2011) upon the logic of colonialism. Christianity in this context implied purity and godliness that was denied to non-western civilizations. "The notion of purity that attached to 'white' people included an understanding of whiteness as representative of spiritual purity within a Christian context" (Ruether 2009: 6 as cited in Battalora 2013: 44). Thus, Galton's greatest gift to whiteness was translating it from a mystic domain linked to Christian beliefs, into the physical realm of humanistic postmodern thinking and bestowing it with a human body, blood and genes. Whiteness was no longer only a philosophical idea that needed (and continues) to demand protection from socioeconomic and political structures, but with its newly cloned physical body it could now majestically take a stride on the earth. It could attach itself to a physical entity and claim realness i.e., tangibility, measurability, transferability, and even assert legitimacy. Galton's invention became the scientific device for melding racialized constructions of difference into biology through hereditary, and for justifying structural and institutional socio-political arrangements for its protection.

Galton's book (1883) was significant in giving whiteness the scientific device called eugenics. The focus on eugenics and the 'realness' of hereditary traits turned the gaze away from the construction of whiteness as an ideology stemming from colonialism, into whiteness acquiring the status of a 'legitimate' entity that could be defended 'empirically'. Through eugenics, bodies became locations of scientific exploitation and resources for the production of (biological) whiteness. Eugenics and its claims of the purity of whiteness – that somehow

some genes of some racial groups were innately deteriorated, innately disabled – justified their being "experimented upon, sterilized, imprisoned and killed" (Dolmage 2017: 15) through state operations. Bodies of various ethnic groups not imagined as white e.g., Jews, Indigenous peoples, Black people, and People of Color were assigned forms of varying disability and biological deterioration. By achieving a common symbolic language of race that inherently implied unalterable biological difference, "the academy refined and legitimated the social ideas that supported territorial expansion [..] and thrived upon the unlimited access to non-white bodies" (Wilder 2013: 182).

A Call for Working Towards a Postcolonial Feminist STS that Theorizes Whiteness

[The] battle to wipe out whole ethnic groups was fought not by armies with guns nor by hate sects at the margins. Rather, this pernicious white-gloved war was prosecuted by esteemed progressors, elite universities, wealthy industrialists, and government officials colluding in a racist, pseudoscientific movement called eugenics. The purpose: create a superior Nordic race (Black 2004: xv).

Whiteness made itself invisible through the norming process of *biologization*, and simultaneously entrenched itself into science by transforming racialized differences into a biological subject-object. Western institutions of higher learning became its custodians by promoting Eugenics' dissemination, testing, and advancement (Trent 2016). Whiteness is/was a powerful structural system that guided the projects of colonialism, and has continued to uphold its ideologies and structures of power globally. In my opinion, whiteness is in fact 'the Matrix' – a metaphor that I borrow from the film "The Matrix", a 1999 science fiction action film written and directed by the Wachowskis – that conceived colonialism in a ploy to establish itself as a global system of power, while distracting humans with claims to modernity and universalism.

The genetic exploration of human racialized differences has taken on new forms with the advancement of new technologies, and has advanced beyond the academy, for example through the Human Genome Project (NIH 2003). These technologies have allowed a democratization of knowledge and individual access to DNA material by for example establishing ancestry trees and customizing consumer health as in the example of the biotech company 23andMe (2006). However, the power relations that allocate power and resources to North America and Europe remain unperturbed while Bodies of Indigenous peoples continue to be used as laboratories (Marks 2005; Benjamin 2009). Additionally, racial disparities in genomic sequencing have been reported (Spratt et al. 2016; Suther/Kiros 2009). The social relations that were created in colonial Maryland and Virginia may have changed, but the function of whiteness in maintaining the monopoly of power continues to this day. Societal institutions maintain the status quo of whiteness which resists toppling, and the academy leads this path.

Products of whiteness are embedded in scientific discourses, epistemologies (Kuria 2014; Trujillo/Kessé/Rollins 2022) and policies, and continue to shape the ways in which resources are allocated, determining which bodies and topics matter for science (Pollock/Roy 2017). Sara Ahmed (2012) uses the metaphor of the brick wall as a framing device to name the experiences of resistance from institutional whiteness as experienced by diversity practitioners. Indeed, the university safeguards the continued sustenance of institutional whiteness.

Whiteness embedded in the fabric of western society and non-western postcolonial societies continues to incognito find expression through organizational rules, orders, norms, processes, and policies, including our very own routines of science that inadvertently bolster white cultures and traditions, thus sustaining global hierarchies of power and orders of difference. Indeed "a closer engagement of science studies with postcolonial studies will allow us to question technoscience differently, and more heterogeneous sources, and reveal more fully the patterns of local transactions that give rise to global, or universalist, claims" (Warwick 2002: 663). Integrating whiteness into the analytical lens of postcolonial studies however will sharpen the critique. Feminist and Postcolonial Studies of STS will do well by investigating and exposing how the construct of whiteness not only shapes knowledge production, including what kinds of knowing are de/centered and why, but it will also enrich science by enabling the scholars themselves to reflect on the social positioning and their engagement in the enterprise of science.

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#### Anmerkungen

1 I borrow the metaphor of "the bridge" from the collection of Women of Color's writings edited by Cherríe Moraga and Gloria Anzaldúa and first published in 1981. This heart-warming, bold, unapologetic anthology draws from the racialized experiences of Black, Latina, Asian, Indigenous and Multiracial women. In one of her metaphors introducing "the bridge" Cherríe Moraga identifies the Black female body as the "bridge (that) gets walked over".

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