Differences as the Product of Society: The Human Being as a Social One

The discourse above left us with a mental mélange which deserves being unscrambled and structured to come to practical and tangible conclusions. The following aspects are rather interesting:

1. The brief excursion to the French Revolution made it apparent that active debate is essential for changing society, toppling existing social conditions, and replacing them with more just ones. Fundamentally speaking, terrible – yet actual – living conditions prompted the protests. Crop failures and inflation worsened an already bad situation. Those who had command over grain and flour, often stockpiled them in expectation of even higher prices and thus maximizing profits. Taking into consideration the living conditions of the large part of the population is also beneficial when discussing »sex.« One aspect is very noteworthy: publications such as Rousseau's, or those championing a better social situation for women, were usually directed towards the privileged layers of society. They were the audience of identifying and criticizing the apparent separation of female and male spheres in society. Particularly male (only rarely female) members of the upper society worked on living conditions but also matters of the order of the sexes – for their own peer group.
2. Publications on the social conditions of women are also a reservoir for deducing questions for creating a better society for the future. The French Revolution, for instance, saw women as very important actresses of events, which in turn became the background for numerous publications that demanded the equality of women and men. The writings of Gouges, Wollstonecraft, and Hippel are indicative for that: they all

referred directly to the French Revolution. It is important that practice and theory go hand in hand: theories are indeed devised – and publications are written – within society. They are part of the society, are developed in the framework of social conditions, and social developments are integrated. The individual, personal living conditions affect all mental creativity, too. It seems like a truism, of course, that theories are perceived against the background of social conditions. Yet it is rarely taken into account. Laqueur and Honegger, for instance, could conclude that biology and medicine from the late 1700s onward were almost exclusively concerned with describing the differences of the sexes. Yet how could that be possible in light of the constant struggle over the roles of women and men in society that took place in those very same societies, and which increasingly generated demands for equality? Such struggles also likely entered the considerations of the biological-medical sciences. And they did indeed, as will be demonstrated.

3. Considering the fundamental change in the scholarly theories is equally revealing. The French Revolution (and, on a smaller scale, the English Glorious Revolution of 1688) proved that social structures were not »god-given« but changed and renegotiated by rational people. Pizan, Fonte, Gournay, and for that matter Rousseau too, unquestionably expected the mind and reason to develop with the right upbringing and education. Just like them, proponents of the scholarly fields moved away from the concept of an irreversible predetermination and towards concepts of development. Changeability, emergence, the interaction of forces: they all became guiding principles. Human beings were not understood anymore as being predetermined in all their features, but social conditions were identified as important influences over their development. Understanding the importance of development also broke the confinements of mind and reason. Europeans rather began seeing all other features of a human – physical and physiological ones – under the concept of development as well. As will be shown, the concept of development has been the basis for discontinuing the classification of human beings as sexually either female or male, but rather all human beings as both female and male at the same time. This chapter will present the evolutionary framework on which later considerations of sex will rest.

Poverty and Limiting Recent Gender Research to the Privileged Classes

When evaluating the historical situation, the more recent gender research faces the same basic problem of all historical research: written sources were left by those able to do so, thus they were almost exclusively representatives of the upper classes who actually could write. The sources they leave give insights into their experiences, interests, and issues of their own specific class. Interests and problems of others – poorer – classes are merely present through the perspective of the writers' socialization. Even when they turned to the more disadvantaged people in their descriptions, they merely represented their own perspectives on them. Representatives of poorer classes left little material to work with as they often lacked the education to compose written material. They also, and more importantly, often lacked both the money to purchase writing material, but also the time for doing so after a hard day of labor. Thus, any research looking into the conditions of the poor are more complicated than into those of the privileged. The debate over the order of the sexes symbolizes this fact of representing the privileged ones' perspectives in the sources, as it was shown through Pizan, Fonte, Gournay, and Rousseau (see Excursus 2). It is important to consider this fact when discussing the biological-medical theories of sex. Only people from more privileged circles were able to participate.

For this reason, both feminist writers Lily Braun (1979 [1901]) and later Simone de Beauvoir (1949) stipulated that bourgeois women rarely met the problematic conditions of poorer women – in fact the majority of the population. Braun states, with an eye on the French Revolution:

> »Pre-1789 bourgeois women seemed afflicted with blindness toward the plight and demands of the working women; they dreamt of liberty and equality, of a peaceful life in nature, for brotherhood and little more than the equality of their sex in matters of education and political rights. Yet like the entire bourgeoisie of the period, they were far from crossing – or even looking beyond – the gap that separated them from the proletariat. The memoirs of even the most prominent among them do not describe, nay, even mention, the plight of their poorest peers in sex. As curious as this may

> seem, it does not prove any conscious callousness. Prominent people even of today, hesitate emotionally transgressing the limits of their own class so that there is no reason left for class-based selfishness. It was not easier for the people of one hundred and ten years ago, when the classes inner and outer restrictions were much graver« (Braun 1979 [1901]: 77).

Writing in 1949, Beauvoir moves a step further. She sees an interest among the bourgeois women not to seek the solidarity with poorer ones on purpose, but rather to turn against the emancipation of women in general:

> »Bourgeois women cherish their chains, as they cherish their privileges of class. She is told over and over again, and knows it very well, that the emancipation of women weakens the bourgeois society: she would be forced to work if freed from the man. She may regret having secondary property rights – secondary to her husband – yet she would regret more if that property were taken away. She does not harbor solidarity with the women of the working class: she is much closer to her husband than to female textile workers. She internalizes his interests as her own« (Beauvoir 2008 [1949]: 155).

What were those special interests of proletarian women that bourgeoise women – and men – did not comprehend, even perceived as threats, or simply largely ignored in the debate for the emancipation of women? It is safe to say that the living conditions of the great majority of the people were horrific at the end of the 1700s. It is also very important to keep that fact in mind as the recent *largely very theoretical discussion* of writings and social practice barely include the experiences and realities of life for people as an important aspect of discourses – which they are, of course. The following quotes deal with the lives of a majority of the population from the 1700s to the early 1900s. They paint a picture of what »horrific living conditions« were.

The mass demonstrations particularly of women in October of 1789 were not unfounded:

> »Twenty year prior to the outbreak of the revolution, there were 50.000 beggars in France. Although punishable by three years of forced service

> on a galley, the number grew to 1.5 million over the course of ten years. In Lyon, the capital of silk production, 300.000 workers relied on alms in 1787. Among the 680.000 residents of Paris were 116.000 beggars. The women among them were often incarcerated in narrow and dirty workhouses for years. There, they were afflicted with the most terrible diseases and, as if their own misfortune had not tortured them enough, they were whipped. St. Antoine and du Temple, Paris' proletarian quarters witnessed the gravest despair. Hardship grew into hatred, and it was not only directed against absolutism, feudalism, and the regime of the clergy – the targets of bourgeois hatred – but especially against those who exploited and inflated prices through the shortage of grain. They who even took the bread out of the politically impotent mouths, or poisoned them with spoilt flour, allowing scurvy and dysentery to claim huge numbers of their children« (Braun 1979 [1901]).

The French Revolution did not »merely« break out because of demanding equal political participation. It was the result of existential needs of large parts of the population. Thousands of women went to Versailles because of empty bakeries and the rampant inflation for staple food. Their mass protest succeeded at least temporarily: the king accepted price restrictions but also certain political rights. The situation of the proletariat dramatically worsened again when the bourgeoisie coopted the revolution. The previous restrictions on prices were lifted, and those for staple goods increased considerably. The bourgeois victors of the revolution now quelled the resulting hunger revolts in blood (Petersen 1990; Stübig 1990).

The poor's gloomy living conditions did not come to an end. They were terrible for large parts of the French but also the English and German populations throughout the nineteenth and up to the early twentieth century.

> »Just how commonly did the female worker returned home after a week of hard labor, without anything to allay her children's hunger! She waited for the return of her husband in vain – as he was sitting in his boss' cheap store and accepted liquor as payment. Maybe he brought a loaf of bread back home, for double the price he would have paid with money. The open

> truck system, i. e. payment in goods, was rather common in the mid-1800s. [The system] gradually crept behind the doors of the stores that were run by the owner of the factory, or his subordinates. The poor workers were forced to buy there if they did not wish risking being fired« (Braun 1979 [1901]: 231).
>
> »It would take writing a book to describe in detail the outcome of this exploitation. [Its images] would be so horrific that they easily surpassed the imagination of how [painter Pieter] Breughel envisioned hell. Let us look into the apartments of those slaves of industry: in one working class neighborhood of London, one of its epicenters, 12.000 people live in 1.400 cottages in 1844. Entire families, well, whole generations, had but one little room to live and work at the same time. There rarely was any furniture; a pile of rags was the bed for all. And yet they were the fortunate ones, as no less than 50.000 people were homeless. During the night, they huddled in the boarding houses as far as they could – men, women, old, young, sick and healthy, sober and drunk, all of them mixed and in one bed in groups of five or six ...« (Braun 1979 [1901]: 231 et seqq.).

The working-class neighborhoods in France just looked the same: in Lille, the buildings were separated by narrow streets that barely allowed two people to walk side by side. All waste flowed into the gutter; to save money, the windows could not be opened. Thus, the overcrowded rooms – furnished with little more than straw and rags – reeked of pestilence. Geriatric children with their swollen limps and eaten alive by vermin stared with empty eyes at the stranger who took the wrong turn into this hell. How lucky they were that death almost always spared them the damnation of surviving: 20.700 out of 21.000 died before their fifth birthday. The conditions had not changed one bit twenty years later (Braun 1979 [1901]: 231 et seqq.).

Lily Braun was not alone in describing the living conditions of large parts of the population so vividly in her socio-critical analysis of 1901. Bettina von Arnim in her *Dies Buch gehört dem König* (1843, Engl. *This Book Belongs to the King*) interwove the demand for the freedom of mind and political participation for all with descriptions of the living conditions of poor weavers. With a focus on German authors, there is insightful

material available for the period from the eighteenth to well into the early twentieth century: *The Communist Manifesto* by Karl Marx and Friedrich Engels (1848), or *Die Frau und der Sozialismus* (1879, *Woman and Socialism*) by August Bebel. Later discussions include Jürgen Kuczynski's *Die Geschichte der Lage der Arbeiter in England* (1949, *History of the Working Class in England*) and *Die Geschichte der Lage der Arbeiter in Deutschland* (1947, *History of the Working Class in Germany*). Until the beginning of the twentieth century, it was common to witness an infant mortality of more than fifty percent in the first year, widespread diseases (between one third and one half of the children in London and Berlin suffered from rickets), malnutrition, contaminated drinking water, or from ill-equipped and overcrowded lodgings (or homelessness). It is no wonder, that the life expectancy barely reached thirty years.

It was worse for women in these conditions. Of course, they contributed to earning a living for the family, as all members older than twelve did (but often also as young as five, six, or seven). With the progress of industrialization, women likely worked in factories. They were otherwise employed in commerce, domestic service (as maid or farmgirl) or at home. The women's wages were considerably below those of men. When working at home – in those cramped quarters – wages were even lower. Jürgen Kuczynski states for England:

> »The wages of women and children should rather be referred to as allowance. Women often earned fifty to eighty percent less than men. Such low wages symbolized the general position of women who were below men in all respects: in matters of payment as much as in mattered of education, in politics, and all other areas of public life« (Kuczynski 1949: 102).

After presenting the living conditions of large parts of the population from the eighteenth to the early twentieth century (for more detail, refer to the noted and noteworthy publications above) one conclusion is very apparent: we need some changes in the current perception of history. Michel Foucault, for instance, identifies a »social medicine« from the late 1700s onward, or to the mid-1800s at the latest. It apparently affected large parts of the population in the shape of a »[German] state, [French] urban, and [English] labor medicine.« It factually did not happen, as outlined above.

The living conditions of the large body of the population remained precarious, the infant mortality remained high and life expectancy low. The living conditions even worsened during times of economic distress and the higher unemployment that goes with them, but also during harsh winters and bad harvests.

Foucault seeks to understand just how the great importance medicine enjoys today – itself almost a »medicalization« of the human being – itself developed. He rests in many cases on the descriptions of the 1700s and the 1800s. And, indeed: the plight of large parts of the population – the poor – were described there particularly because their disease threatened the more privileged circles, too, in their mutual and increasingly urbanizing environment. Such debates, though, initially did not affect the practical living conditions of the proletariat at all, later only haltingly. They barely had their daily bread or dwellings; drinkable water was equally rare. They simply could not afford to consult a physician. It is important to emphasize Foucault's rather fleeting, but nevertheless limiting, addendum to his observations: »Poor people's medicine, labor force or worker's medicine, was not the first but the last objective of social medicine« (Foucault 2000 [1974], 151).[12]

Thus, it is important to let go of a rather romantic idea: it was not a growing compassion from capitalists or the state that helped make changes, which in turn alleviated the plight of large parts of the population. Not even fearing the diseases of the poor seems reason enough. Alleviations, such as decreasing child labor, were simply the result of changes in production. The machinery became more complicated by the end of the nineteenth century; therefore we are dealing with an increasingly intensive exploitation of the individual worker. For this, better skilled laborers were essential (see, among others, Kuczynski 1947: 134).

The state, on the other hand, was more interested in the suitability of young men for military service. At the turn of the twentieth century, young men's health and nutrition often were so poor that they were unfit for military service (see, among others, Bebel 1950 [1879]: 309 et seqq.).

12 The English translation is taken from: Michel Foucault, *Essential Works of Foucault (1954–1984), vol 3: Power*, ed. by James D. Faubion and trans. by Robert Hurley (New Press, 2000).

Profound social changes, however, require social renegotiations such as the ones of the revolutions in 1789 or 1848. For the German states especially, those renegotiations were social-democratic ones that were inspired by *The Communist Manifesto* (1848), as well as the proletarian women's movement.

As already demonstrated, this is an especially important starting point for any discussion: written sources do not suffice. Theoretical assumptions must be connected to the factual living conditions of people. Nobody could turn to the fine arts if he/she is un- or undereducated, works twelve to fifteen hours a day for truly little food, or who drink putrid water. Someone, who watches their own children die in droves until dying themselves at an early age, will not be interested in the fine arts.

This brings us to a second important point of gender studies: the concepts of gender and sex. Barbara Duden, for instance, in *Geschichte unter der Haut* (1987, *History Under the Skin*) based her assumptions on the perception of women's bodies ca. 1730 on the writings of a (male) physician. Most often, these women turned to the physician for »flows« and »hot flashes.« These terms appear as rather general ones. Duden quotes them as such to assert that »modernity« and new terms – from the natural and medical sciences – which brought forth a change in the perception of the body. As important and interesting as these observations are, they only apply to privileged women. Duden omits this fact. Those women could actually afford to consult a physician. Duden never addresses their belonging to one specific class of people. As a side note, she states that »the lack of solid indications of income, tax on pharmaceutical products and gifts preclude a more thorough socio-historical analysis« (Duden 1987: 84).

Living conditions also affect the »perception of the body«, of course. Karl Marx wrote in his *Grundrisse der Kritik der politischen Ökonomie* (1857/8, Engl. *Fundamentals of Political Economy Criticism*): »Hunger is hunger, but the hunger gratified by cooked meat eaten with a knife and fork is a different hunger from that which bolts down raw meat with the aid of hand, nail and tooth« (Marx 2020 [1857/8]: 15).[13] It was a

13 The English Translation is taken from: Karl Marx, *Foundations of the Critique of Political Economy (Rough Draft)*, annotated by Ben Fowkes and trans. by Martin Nicolaus (Pen-

rare occasion for poor people to satisfy their hunger through meat until the beginning twentieth century. Following more detailed descriptions of those living conditions, working women apparently had a drove of other problems which kept them from contemplating their »flows« and »hot flashes.«

Thus, it is also important to turn away from the privileged ones and towards the actual and practical living conditions of the population's majority when considering the historical dimensions for gender studies. It is necessary to approach written sources with that in mind. They also had been written by the privileged ones and do represent their class-based insights. Poor people and their afflictions appeared as *the other*, from whom the more privileged ones sought to distance themselves. All historical studies are thus limited in their significance – including the often-quoted ones of Thomas Laqueur and Claudia Honegger. They deal with the situation of the privileged ones, not with the majority of the people. The writings on historical debates over the emancipation of women, as quoted above, are of equal limited historical significance – as are those writings on biological-medical descriptions below.

A side note. Being limited on written sources – and valuating them much higher than pictural or oral sources – bedevil epistemological discussions not only in respect to being limited to a certain class only. Societies in which written sources are unknown, or where the humid and warm climate claims those sources written on paper are underrepresented in historical considerations (see, for instance, Brentjes 1963). Even when discussing societies that did transmit written sources, it should be noted that they represent but a fraction. Other writings may have been lost or destroyed because they contradicted religious dogma, or because the relations of power might have shifted. We only have a glimpse at the social meaning of »sex« or »gender« in Greek antiquity, for instance, through extraordinarily little material from some of those »city states.« The sources of the Arab-Muslim middle-ages dealing with »sex« and »gender« are largely unexplored in their context to the Latin middle-ages or compared to modern European sources. Yet, they had a strong influence on those

guin Books, 1997). It is available online through https://www.marxists.org/archive/marx/works/1857/grundrisse/index.htm.

writings of the European enlightenment that are dedicated to human reason (see, as an introduction, Ley 1953; Brentjes 1972; Kügelgen 1994).

Understanding the limited validity of historical sources is essential for a thorough study pertaining to the history of science. One's own position, however, must also be considered for any contemplation as it already narrows the perspective. Thus, not only the supply of sources limits the focus on poor people. One's own position also limits the contemplation because of the erroneous assumption that beginning with »modernity« theories have known nothing but two sexes/genders. This assumption, however, rather reflect the perspective of those researchers of today. They are the ones who are embedded in their own socialization and current debates. Considering and contemplating the current society and one's own position might broaden the view. It thus allows us to integrate at least some notion of diverse current views. When doing so, it is possible to check one's own research results whether they conform to the factual experiences and qualities of life of the people in question. That way, it may be possible to limit contaminating the view on the past by the modern perspective in historiography and related subjects. Even reflecting the current society and position requires considering poor and marginalized groups of people, as they, once again, seem to remain without voice in social as well as scholarly debates and considerations:

As mentioned above, the international PISA-studies attest strong social barriers which still define the current educational system in Germany. Also, with the historic criticism of Braun and de Beauvoir, bourgeois women still are willingly or unwillingly incapable of arguing for the necessities of proletarian women. This holds true for the past and now. Individuals have their own socialization and experiences – they do not apply to others. The closer the socialization and experience of others is to the own, the easier it is to show compassion.

In modern German society, growing up in a financially weak home, or having an immigrant background, are the two main obstacles for receiving a good education, or to obtaining well-paid or prestigious positions. At the beginning of the 2000s, police habitually took the children of refugees out of the school classes when they reached the age of 16. The police argued that their good education would foster integration and thus complicate deportation.

For those with a steady income it is exceedingly difficult to grasp the angsts and lack of prospects of those living off of *Hartz IV*, the German minimal welfare with the least social standing.[14] For both groups, those living on a steady income but also of Hartz IV, it is, in turn, difficult to relate to the plight of refugees. They are often compelled to live in the country illegally, and have to take up work that is dangerous or hazardous to their health – just to make ends meet. When doing so, they are often equally deprived of their rights as employees, but also of health care. Tthis does not include those people who must bord crowded and unsafe boats to reach Europe, but who are most often forced back to Northern Africa. They must do so as their chance of a legal status of asylum is dwindling because of the European Union's ever-tighter border controls and ever-growing obstacles. The gravest of obstacles is the German-championed legislation of denying passage into other member-states of the Union once European soil is reached and asylum granted. Because of these conditions, many refugees perish, or are pushed into Libya's detention centers pending deportation. There, the conditions are even worse than in their European counterparts. How could any well-fed and secure Central European citizen truly take the perspective of those huddled masses of today?

Excursus 3: *The Marx Family Saga*

Initially appearing in Spanish, Juan Goytisolo describes in his novel *The Marx Family Saga* the landing of a ship full of refugees. The bathers' reaction might serve as an illustration of fear but also of isolation. It may equally symbolize the diminished capacity of reflecting other people's perspective (also in a scholarly context).[15]

14 Hartz IV is the colloquial term for the German »Grundsicherungsleistung für erwerbsfähige Leistungsberechtigte«, a combination of unemployment benefits for long-term unemployed and welfare benefits. It is the minimal sum the German administration pays its citizens to sustain themselves if incapable of doing so. As of 2020, *Hartz IV* entails a monthly payment of EUR 432 plus minimal rent, after personal savings have been exhausted. The recipient generally is subjected to stipulations that are often perceived as degrading. The translator.

15 The English translation is taken from: Juan Goytisolo, The Marx Family Saga, trans. by Peter Bush (San Francisco: City Lights Publisher, 1996), 8–9.

»the beach had filled up with hairy-faced, sopping wet Albanians, some smiled and kissed the ground, closed in on the appalled families and sought out a tangential, semilogical relationship, with children and dogs, unable in their euphoria to grasp the frowns and reproving looks from those svelte, well-fed forms, consumers of the exact quantity of proteins required by their weight and height, surprised by the hurried flight of their more wide-awake brethren and by the impotent, outnumbered beach staff's vociferous insults, an out-of-control, patently explosive situation, a catastrophe, they muttered, absolutely unheard of when would the forces of law and order turn up? The proprietor had given them a call?

the bathers listened out for the wail of car sirens, breathing a sigh of relief as soon as their deafening concert turned the corner, it was an invasion, an invasion no more no less, and the State should adopt immediate defensive measures, protect its citizens, round up, arrest, deport the ragamuffin rabble, isn't that what the Community laws and statutes were for or were they just so much paper and ink put there for show?

(the man rabbiting on was a respectable arms dealer enriched by the providential outbreak of crises in the Balkans)

but the Albanians seemed unaware of the danger and pursued their futile attempts at fraternizing with families, mums, kids and dogs, smiled half-wittedly at those upbraiding their uncivilized behaviour, gesticulated, looked lovingly and longingly at the counter replete with cold drinks and rolls, now into their third day of a meagre diet, looking for food and help, not daring even to run their fingertips over the tempting fare, at most begging humbly, movingly, for a glass of water to slake their consuming thirst

the sudden arrival of truncheon-waving helmeted police literally stunned them

had they come to look after them, to take them to reception and welfare centers set up for refugees?

a few went to welcome them with open arms, but the from faces and unbending manner of the men in uniform halted them in their tracks, made them keep together, hold back, visibly upset, wanting to explain their odyssey they pointed at the liner where they had

> been cooped up on the journey from the country of idols and false prophets, apparently railing against communism, and they showed off medals bearing likenesses of the Desert Lion, their notions of geography being somewhat hazy, one hat taken the wet photocopy of a dollar out of his pants and was repeating an almost unrecognizable God bless America!
>
> much to the relief of those present they allowed themselves to be shepherded to the lorries, and, having discounted the use of force, the police and the military lined them up before escorting them to the parking area towards which army vehicles were now rumbling, keep calm, just keep calm! an interpreter bellowed through a megaphone, they would soon enjoy shelter and food, would get refugee status, would benefit from the right to obtain with the fruits of their labour all the goods they had just glimpsed on the select beach, would be able to apply for visas and set up home in Texas, sweet honey-dewed promises, to cheat and pacify them.
>
> The most wary, the cleverest had tried to scarper, but lifeguards and emboldened paterfamilias grabbed their threadbare clothes and held furiously on till the police arrived
>
> only the archduke showed any interest, wrapping a sumptuous, imperially tasselled dressing-gown round his abundant rolls of flabby flesh, he welcomed two of the lads, no less well-endowed for being on the skinny side, into the inner sanctum of his beach hut, keep your hands off these two, he warned, they're mine and from now on they will devote themselves to servicing my distinguished self, as he draped his mantle of power around them, drooled over their damp breeches, as if trying to weigh up their attributes, their cocks' normal size and potential for expansion«

It is not about retreating into a compassionate lethargy. It is not about constantly opening a book or article by apologizing for coming »from a privileged, white home that follows educated middle-class principles«, or being raised in this or that sex. Often, this is done and the author continues with observations which have no relevance to the factual realities of people. No, this is about dealing with factual realities of people of a

different background in the first place. It is about accepting perspectives and voices that barely played any role in science – on merely that of »victims.« Science must be accepted as part of a political action that so far has most often dealt with the needs of the privileged ones only. Most often, it separated and excluded thus far – and ignored (or refused) the voices of the marginalized ones. Science must not be understood as a haven of seemingly objective understanding but as deeply rooted in social conditions. It is about voicing one's own partial and limited perspective that makes a clear stance, but also to find solidarity with the voices of marginalized and subjected people (see Haraway 1988).

Whether to call it queer-feminist, deconstruction or intersectionality: it is vital – apart from concrete political action – to at least try to harmonize one's scholarly assumptions with possible different perspectives and factual, practical living conditions. It is vital to constantly re-evaluate and challenge one's assumptions and publications. Such »new eyes« when tackling with different positions may bear fruit as new scholarly perspectives that were informed by different works and angles. These might generate new angles on, for instance, the concept of »sex.« It has been severely limited by experiencing the constant reality of two sexes in the Federal Republic of Germany.

The Human Being as a Social One

Individual traits of people, as it becomes apparent, are just as little »natural« as are education, food, or feeling. They are one product of social circumstances which determine the opportunities and the reality of every individual. The factors are socialization, upbringing, experience; worrying about the family, access to sustenance, housing; but also access to being educated at schools or universities, prospects of social appreciation and success while receiving sufficient economic means. The personal perceptions of every human being, the way they behave, cannot be understood without understanding these conditions.

Typically, such notion is generally accepted in matters of skill: those who never learned how to read, write, or do math just cannot do it. It is more complicated for some to understand the same in features like »feel-

ing«, »tasting«, or »the experience of pain«, or pleasure, for that matter. It is more complicated to understand the imprint society has in those experiences. Even otherwise emancipated individuals rarely do not question the social imprint on physical of physiological features. They often understand such features as »natural«, i. e., they should be developed without the influence of society. This, however, is factually equal to jumping to conclusions.

Nothing that is human is also beyond the reach of society; nothing humans can perceive is imaginable beyond the limits of social conditions or conditioning. Arguing this way is often met with the criticism of being radical or »constructivist«, today. Yet for feminist and Marxist work this has been essential to recognize human beings as social creatures within a net of relations to other human beings. As mentioned above, Rousseau and – with their keen eye on the development of girls and the opportunities women enjoy in society – Pizan, Fonte, and Gouges proved just how much mental development relied on social conditions. Beauvoir ardently spoke against the existence of the pre-determined and irreversible »eternal female.«

In *The Second Sex*, Beauvoir's attempt at understanding why women play such a subservient role in society, Beauvoir draws from the (then) latest scholarly findings of the natural sciences and historiography, psychology, and sociology. She did not perceive »women« as a constant then, as little as she understood scholarly findings as eternally true. She rather outlined just how specific social conditions shaped »women.« Karl Marx understood through his earlier works – and made it the basis of his later ones such as his *Capital* – all relations of the individual to the world have always been »human«, thus social, ones. According to Marx, this covers everything perceived through »seeing, hearing, smelling, tasting, feeling, thinking, observing, experiencing, wanting, acting, loving« (Marx 2000 [1844]).[16]

Physical traits are obviously not »natural«; it is important to see them, too, as created by society. This is easiest to seen in nourishment: the West-

16 The English Translation is taken from: Karl Marx, *Economic & Philosophic Manuscripts of 1844*, trans. by Martin Milligan (2000), *Marxists.org*, marxists.org/archive/marx/works/1844/manuscripts/preface.htm, 45 [of pdf]. Accessed July 23, 2020.

ern European bathers, »those svelte, well-fed forms, consumers of the exact quantity of proteins required«, Juan Goytisolo describes (see Excursus 3) look down upon those famished people who arrived at the beach, and who barely dared begging for »refreshing beverages.« The undernourishment of African children manifests in bloated stomachs, slow gain of weight in the children's development, but also in being perceptible for acquiring and spreading diseases. Poverty in Western European children (given there are even some means of sustenance left) often manifests in obesity. Here the cheapest food is full of sugar and fat, and compensating leisure activities are financially out of reach. Anyway, the bodily features differ from the exactly formed bodies of the wealthier ones who may watch their diet, or who may pamper their bodies with beauty products or at the gym (even their own private gym).

Historical descriptions know the direct impact of living conditions through rickets in proletarian children, which was caused by the insufficient supply of calcium and sunlight. The most drastic manifestation of social conditions as a factor of the development of physical and physiological features was death. Undernourishment and insufficient medical treatment claimed the lives of tens of thousands of individuals – every single day.

The German Social-Democrat August Bebel knew how living conditions had a permanent imprint on the physical feature of people. He wrote »Just why is it that children of the better-off class of people typically differ from children of poor people in the development of their faces and bodies, but also in certain features of the mind? Because of the difference in the conditions of life and upbringing« (Bebel 1950 [1879], 322).[17] Mary Wollstonecraft, too, was aware of the connection of living conditions and the formation of mental as well as bodily features: »To preserve personal beauty, woman's glory! The limbs and faculties are cramped with worse than Chinese bands, and the sedentary life which they are condemned to live, while boys frolic in the open air, weakens the muscles and relaxes the nerves« (Wollstonecraft 1796 [1792], 84).[18] More currently speak-

17 The translation into English follows the German original.

18 The English original is accessed through Mary Wollstonecraft, *A Vindication of the Rights of Woman: with Strictures on Political and Moral Subjects* (London: Johnson, 1796); digi-

ing, these historic findings still hold true for today as Pierre Bourdieu describes it as »habitus« or Anne Fausto-Sterling as »embodiment« (see Excursus 4).

Excursus 4: The definitions of »Habitus«, and »Embodiment«

»Habitus« according to Pierre Bourdieu: The sociological theory of »habitus« recognizes the imprint of living conditions, i. e., social status and gender/sex, on the individual's behavior, emotions, and perception. The »habitus« of a person represents their »congealed life story.« Social origin and sex particularly have an impact on »habitus« and are represented in the language and speech, values, and cultural codes. A person acquires the »habitus« from early childhood onward through their processes of experience and learning. Among those aspects that influence the »habitus« are the size (or narrowness) of the living quarters, their facilities, as well as the interaction with as well as habits of the people around.

»Embodiment« according to Anne Fausto-Sterling: This concept, mostly employed in critical reflections of neurobiology, considers a person's socialization, living conditions and experiences as leaving a mark on their psychological, physical, and physiological features. Learning a foreign language at an early age, for instance, or using both hands synchronously when playing an instrument, change the brain pattern. Nourishment, training, and access to (pre-emptive) medicine have an impact on psychological, physical, and physiological features. The concept of »embodiment« contradicts essentialist approaches that see differences in the brain patterns as »natural« – as hereditary and irreversible.

It has been made clear, that living conditions, experience and upbringing do not only affect the capacities of the mind, but also physical and physiological features. The explanation is pending, however, just why a person

tized version accessed through https://archive.org/details/avindicationrig01wollgoog/page/n4/mode/2up

is always the outcome of society – why everything a person perceives is always social. There is no »nature« conceivable for any thought or attitude of a person if they are beyond society. Karl Marx' writings are an early and excellent reading for this idea – and they should be given their due in the following.

Well, trying to understand an organism without considering its environmental factors (or a person without the influence of other people on them) is virtually impossible. Even the development of an embryo does not happen in a vacuum. It requires signals from the mother's organism which are supplemented by further exterior signals (those from beyond the mother's organism). The development of the embryo *would not happen* without them.

Newborns cannot survive without the help of other human beings. They, in turn, react to the baby's signals, say, its cries, and nourish it – and thus send signals back to the newborn. This is communication: sending, receiving, and processing signals. This does not mean, however, that a young human being would be little more than a »recipient of signals«, therefore facing and merely absorbing an abstract society. No, the young human being (and the embryo they were before) actively take part in the communication. They are thus actors.

> »Above all we must avoid postulating ›society‹ again as an abstraction vis-à-vis the individual. The individual *is the social being*. His manifestations of life – even if they may not appear in the direct form of *communal* manifestations of life carried out in association with others – are therefore an expression and confirmation of *social life*« (Marx 2000 [1844]: 45; emphasis in the original).

Thus it is clear: We are not only social when you and I are together and communicate. We are already social, even when you and I are alone, or when nobody else is around. This is the case as the present situation (the being-alone) was preceded by the social interaction with other people, and even if it was no one else but the mother.

People are usually part of a community from birth. Therefore, it is possible to consider specific social interactions. One important tool of human interaction is language. Marx writes,

> »[f]rom the start the ›spirit‹ is afflicted with the curse of being ›burdened‹ with matter, which here makes its appearance in the form of agitated layers of air, sounds, in short, of language. Language is as old as consciousness, language *is* practical consciousness that exists also for other men, and for that reason alone it really exists for me personally as well; language, like consciousness, only arises from the need, the necessity, of intercourse with other man« (Marx 2004 [1845]: 50–51).[19]

Language is a social product of human beings. It itself refers to traditions, and it contains a repertoire of terms allowing for clearly naming some things and describing other. For still other things, there are no terms yet, and thus they remain unreferenced and often not even perceived. Human beings are compelled to acquire language as a tool of social communication, just as much as the other means of receiving and producing signals. They must also acquire the perception of emotions and other expressions of life by learning and experiencing them. The mode of communication with others determine, for example, if or how important hearing is. If somebody does not hear, only the reaction of others will show it. If somebody hears, it depends on the environmental circumstances which noises are heard and how finely they are differentiated. Social learning raises acute awareness for noises that signify danger according to social norms (see Marx 2000 [1844]).

Because the individual's ability to perceive (and produce) signals develops through society, and the great importance of language with all its traditions, terms, and limitations, demonstrate that all perceptions of a person are already social ones. Without other human beings, the embryo would not receive signals to develop, eat or drink. Language would be a ridiculous concept without interaction among people. Without communication, no social division of responsibilities would make sense.

As stated above: even if you and I are on our own, you and I, respectively, are social. Scholarly interpretation is the same. It is a social endeavor. Even when pursuing it alone, it is never detachable from the interaction

19 The English translation is taken from: Karl Marx and Frederick Engels, *German Ideology*, Part I, ed. by C.J. Arthur and trans. by Lawrence & Wishart (New York: International Publishers, 2004).

with others, from learned content, from the traditions of language. Or, as Marx writes:

> »But also when I am active *scientifically*, etc. – an activity which I can seldom perform in direct community with others – then my activity is *social*, because I perform it as a *man*. Not only is the material of my activity given to me as a social product (as is even the language in which the thinker is active): my *own* existence *is* social activity, and therefore that which I make of myself, I make of myself for society and with the consciousness of myself as a social being« (Marx 2000 [1844]: 44, emphasis in the original).

Marx presupposes such considerations of social development for his economic studies as well. He takes it a step further, though, and explains that people are hardly aware of the sociality of their actions under the capitalist system. People in a system of production – that is factually aligned with their own needs and those close to them – are aware of the interrelation of work, sweat, pain, hunger, joy. They are not in a system that is specialized and focused on exploitation. Every- and anybody who ever witnessed debates concerning the theories of Marx or Marxists is familiar with the term of »estrangement.«

»Estrangement« does not have to be anything bad. Any work rather materializes as an object. If somebody speaks a sentence, the act of speaking turns into something said. If creating a piece of art, the material receives a meaning that is detached from the action of transforming it. The spoken word, or the piece of art, is separated from the person creating them as an object with a value of its own. »Alienation«, when seen this way, always happens when people are active.

It is something problematic for Marx when capitalism becomes normative. Consider, somebody comes along and sees the cultivated soil, or a produced object, and cries out »This is all mine! If you want a share, continue cultivating the soil, make more objects!« Then, this person possesses the moving action – the productivity – of those people who cultivate the soil or make objects. Under these conditions of production, the active, transforming person is estranged from the work and its products in a negative way. They become »abstract.« Rather than producing objects with their »own value«, meaning a factual one, for themselves and

those dear to them, they now have to create »VALUE« that benefits others in order to sustain themselves – or reproduce. See, as an introduction into Marx' theories, including »estrangement«, Heinrich (2012 [2004]).

In his earlier works, Marx often employed a »strictly philosophical«, a-historiographical terminology. He does so when writing that »In creating a *world of objects* [...] man proves himself a conscious species-being [...] Through this production, nature appears as *his* work and his reality« (Marx 2000 [1844]: 31–32, emphasis in the original). Yet my limiting oneself to merely one task, the production of large amounts of the same product that cannot be consumed by those creating them, the personal relation of the people to their products fades into non-existence. Capitalism also brought forth compensating people through money, thus ending the – increasingly unbalanced – barter trade. It also completed assigning a specific »value« to the productivity of people. It took away the people's connection between their own activities and what they created. Marx writes in his Capital (1867):

> »whenever, by an exchange, we equate *as values* our different *products*, by that very act, we also equate, as human labour, the different kinds of labour expended upon them. We are not aware of this, nevertheless we *do* it. [...] It is value, rather, that converts every product into a social hieroglyphic. Later on, we try to decipher the hieroglyphic, to get behind the secret of our own social products; for to stamp an object of utility as *a value*, is just as much a *social product* as language« (Marx 2015 [1867]: 49 [of pdf], emphasis by the translator, following the German original).[20]

Yet, this very same sociality becomes virtually invisible in capitalism. The gap between economic production and the factual lived world of people increased with ever-growing productivity that left behind the »equival-

20 Karl Marx, *Capital A Critique of Political Economy*, Vol. I, Book One: The Process of Production of Capital, ed. by Frederick Engels and trans. by Samuel Moore and Edward Aveling, 1st English translation of 1887. Digital edition, 2015, accessed through https://www.marxists.org/archive/marx/works/1867-c1/index.htm. Page numbers refer to the pdf.

ent« development of compensation. It likely still holds true for every salary-dependent person that »The power of his *money* declines in inverse proportion to the increase in the volume of production« (Marx 2000 [1844]: 49, emphasis in the original). Often, that person cannot even afford the product they produce.

As it is known, Marx did not limit his »estrangement« to the production based on the division of labor, thus cooperation. Along with Friedrich Engels,[21] he soon mocks the philosophers who understood those individuals who were not subsumed according to the division of work as the ideal under the term »Man.« It was »shown as the motive force of history [and] conceived as a process of self-estrangement of ›Man‹« (see Marx 2004 [1845]: 93–4).

In contrast to that, Marx and Engels refer to the determining contradiction between the developing productive force and the overcome conditions of production requiring a binary division of society. The owners of the means of production are opposite to the people who have to work for them in order to reproduce. As long as the latter are unaware of this fact, thus, have no »class conscience«, it holds true that:

> »The social power, i. e. the multiplied productive force, which arises through the co-operation of different individuals as it is determined by the division of labour, appears to these individuals, since their co-operation is not voluntary but has come about naturally, not as their own united power, but as an alien force existing outside them, of the origin and goal of which they are ignorant, which they thus cannot conrol which on the contrary passes through a peculiar series of phases and stages independent of the will and the action of man, nay even being the prime governor of these« (Marx 2004 [1845]: 54).

But also those people who profit from the work of many other people in the capitalist way of production, or gain through betting at the financial market, are not closer to their surrounding lived environment. They, too, do not see the correlation between the consumed products and their own

21 The endonymic German *Friedrich* Engels is preferred over the exonymic Frederick. The translator.

work (see, among others, Marx 2000 [1844], Marx 2020 [1857/58]: introduction).

Thus, human beings find it hard to see the correlation between their own activities and the world around them. They perceive things and consume things that they come across as already made things. (The act of consumption alone demonstrates that the individual in question is not, of course, the »passive enduring one« but an »active actor.«)The direct correlation between action and reaction, as a young person experiences by receiving food when crying, for instance, is very difficult to comprehend when buying a chair, getting on the train, or enjoying works of art. What holds true for the way of production of consumer goods, also holds true for other segments of society: »[r]eligion, family, state, law, morality, science, art, etc., are only *particular* modes of production, and fall under its general law« (Marx 2000 [1844]: 44, emphasis in the original). How they came into being through society is largely secluded from the eyes of the individual. People accept them as given, and participate in their existence and development through consumption and production: they take part in religion, family, state, etc. They get in line, take up, repeat, change.

A person's perception of things as »just being there« in a given order makes them very susceptible for concepts of »irreversibility« or »naturalness.« That person faces in awe – and impotence – a solid *something*. Rather than being able or even willing to comprehend it, it is declared »natural« or even »holy.« The most apparent results of such impotence are the separation of »nature« from »culture«, of the »body« from the »mind«, »matter« from »idea.« Individuals who are socialized that way will hardly comprehend becoming and change (thus the development), the impact society has, and the social human being's own actions.

Thus, in conclusion:

1. Every person becomes an individual in society – they have always been in society, and society is in them. The person is therefore always a social being already, and all their perceptions are already social.
2. »Negative estrangement« is an important factor of the person's *limited comprehension* of 1).

The ideas Marx outlines for the economic means of production, but also briefly touches on »religion, family, state, law, morality, science, art, etc.«

equally hold true for »sex«, of course. Sex is one important category in western society for the differentiation of people. It is interwoven in an institutionalized way in religion, family, state, law, morality, science, art, etc. Differentiating according to sex seems »natural« because it is already a part of the individual's socialization. The fact that »sex« is also a social creation thus seems difficult to grasp as it is an ever-present concept. You and I draw from the socially acquired repertoire of the features and meanings of sex. We interpret those features, repeat them, and add our own by interpretation. No matter how we behave, even if we reject the binary classification of human sex, we still draw upon the social repertoire concerning sex. And, thus, perpetuate it.

This takes us back to Beauvoir's observations: she identified the current reality of sex – female and male. She understood that within society discrimination, inequality and violence happen along the lines of sex, and that women are more often discriminated against and more often directly violated than men. Liberation means to act in a concrete way against violence, inequality, and discrimination. It does not mean, however, to declare women and men as something eternal. Just as much as Marx' analyses of the ways of production may/should be used for bettering society and the lives of people, so may/should the category of »sex« be analyzed thoroughly. The findings may/should lead to changes allowing for a proper life for all. The social development of both will take perseverance. It should not lead to giving in to barriers of thought or a notion of having no alternative but to carry on, because that perseverance seems unbearable.

Simone de Beauvoir saw the relations of production and the sexes as being intricately connected. *The Second Sex* concludes with a reference to Karl Marx:

> »›The direct, natural, necessary relation of human creatures is *the relation of man to woman*‹, Marx has said. ›The nature of this relation determines to what point man himself is to be considered as a *generic being*, as mankind; the relation of man to woman is the most natural relation of human being to human being. By it is shown, therefore, to what point the natural behaviour of man has become human or to what point the human being has become his *natural* being, to what point his human nature has become his *nature*‹.

> The case could not be better stated. It is for man to establish the reign of liberty in the midst of the world of the given. To gain the supreme victory, it is necessary, for one thing, that by and through their natural differentiation men and women unequivocally affirm their *relationship as siblings*« (Beauvoir 2020 [1949], emphasis in the original; the underlined wording was changed according to intentions of Beauvoir. The term »natural« in the quote is used differently as elsewhere – it does not refer to something that is pre-determined and irreversible, but rather that the »naturalness« of human beings is sociality.)[22]

As presented in the beginning, Beauvoir had always emphasized that the »natural differences« between women and men are not biological predeterminations of an »eternal female« or »eternal male.« Women and men, as they do exist in our current society, are supposed to come together as *siblings*, meaning as *humans* (meaning *socially* meaning *naturally*). The relations between women and men as well as handling sex in society, are Beauvoir's indicators of 1) the »negative estrangement« has been lifted *and* that 2) man, in the sense of human being, has become human(e) to themselves. In *The Second Sex*, Beauvoir repeatedly emphasizes – by a reference to Marx – that the liberation from patriarchal and capitalist oppression may only succeed when going hand in hand. Furthermore, the liberation from oppression will not materialize out of thin air, but rests on the constant and continuous *molding of society*.

As Karl Marx focuses on the economic means of production, moving beyond that subject is difficult for an analogy of the social determination of sex. Simone de Beauvoir's works, on the other hand, present excellent starting points for discussing the sexes. Even more so, as well as more current and direct discussions of the concept of binary sexes, are the works of Judith Butler. She exhaustively argues against the idea of a solid, »natural« (meaning pre-determined and irreversible) core of sex that exists beyond the reach of social influence.

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22 The English translation is taken from de Beauvoir, »Conclusion«, in *The Second Sex*, Philosophy Archive @ marxists.org, https://www.marxists.org/reference/subject/ethics/de-beauvoir/2nd-sex/introduction.htm [accessed July 23, 2020]), https://www.marxists.org/reference/subject/ethics/de-beauvoir/2nd-sex/ch04.htm

The turn of the twentieth century witnessed the rise in the belief in heredity as an early understanding of genetics. More simplistic concepts of sexuality then moved into the focus of biology – not least because theoreticians of more nuanced concepts were also persecuted and murdered by the Nazis in the 1930s and 40s (see Satzinger 2009). When the structure of DNA was described as a double helix in the 1950s, heredity and the idea of »genetic material« raised expectations of having found the key to the understanding of life. Initially, feminist advocates saw the benefit in not debating a »natural« core of the sexes as a strategy. It may have taken away an option for further reflection.

Those advocates of the emancipation of women rather argued in the 1960s and 70s that the lower position of women in society (thus the better status for men) was rooted in social discrimination – regardless of »natural«, pre-determined factors. Even if there (»naturally!«) was a difference in the sexes, it could not serve the justification for discriminating against women in society. Elements of such argument can be found in Beauvoir's *The Second Sex*, too. It brought forth the distinction between *»sex«* and *»gender«*.

Sex, the alleged »natural« core beyond the reach of society, moved into the focus of feminists again in the 1980s. The first half of that decade saw the discussion of androcentrism and biased researchers in the historic and then current research on sex, as well as the impact it had on the resulting theoretical concepts. Scholars who questioned long-held theories on that basis were Lynda Birke, Ruth Bleier, Ruth Hubbard. Evelyn Fox Keller, Londa Schiebinger, Thomas Laqueur, Anne Fausto-Sterling, or Donna Haraway (see, as an introduction, Palm 2010, Voß 2008). Building on this understanding, Judith Butler complements the notion by outlining that – just like social *gender* – the biological *sex* is also the outcome of creation within society. It is society which reads bodily features and bestows meaning upon them through constant repetition, quotation, relentless cultural (self-)appropriation, and rejection. Every individual within society takes an active role in this (see Butler 1993; Butler 1990, Jagose 2001).

Such observations are not meant as an end in themselves. The scholars mentioned above, and more, as well as the thorough debate of Butler's work have rather broken up an ossified thinking concerning sex – broken

up, that is to say, not overcome. It is important to take it a step further: Butler, for instance, discusses »testicles«, »penis«, »vagina«, »clitoris«, »ovaries«, and »uterus« as social terms for seemingly factual organs that, in turn, call out for a binary differentiation according to sex. They are not and they do not. Marx, for instance, employed the evolutionary perspectives for his observations on the ways of production. They are normative, today, for any enlightened considerations in the sciences such as geography, physics, or biology. Evolutionary perspectives, too, necessarily raise doubts about the terminology of those organs for a differentiation according to the sexes. Such considerations always emphasize the development, differentiation, and processuality. The process in this is always open for influences of all kinds; those influences differ from individual to individual, and the outcome is never fixed.

This consideration will be discussed and outlined in respect to biological theories of the sexes but also alternatives to a binary concept of sex on the following pages. Before doing so, however, it is imperative to consider the development and importance of evolutionary thinking.

Evolutionary Thinking and its Potential for Social Change

Considering the world through the lens of evolution, i. e., constant change, was one of the most crucial innovations of the sciences and society in general around 1800. It is striking, for instance, that the revolutionary period saw the rise and success of theories of *development* in the liberal and natural sciences. The great German thinkers – one random example – of their times all followed ideas of development: Gotthold Ephraim Lessing, Johann Wolfgang von Goethe, Johann Gottfried Herder, Georg Friedrich Wilhelm Hegel, Friedrich Wilhelm Joseph Schelling, and others.

Moreover, they all followed the theories of Baruch de Spinoza, the great thinker of the 1600s. Yet, at the beginning of the 1700s Spinoza's followers still risked exile as enemies of the state and of religion. Spinoza did not perceive »God« as a creator, after all, who brought everything into existence on one singular act of will. For Spinoza, »God« was inherent to every and any being itself – as a productive driving force of development from what exists now to a future state of existence. He also rejected the

existence of an »eternal soul« next to a short-lived matter. »Soul« and »body«, according to Spinoza, were rather two core characteristics of the »one substance«, and also subjected to development (the so-called theory of monism). Such understanding tied in with the works of the Arab-Muslim middle-ages – a fact the thinkers around 1800 honored. Johann Wolfgang von Goethe, otherwise predominantly known as the German »Prince of Poets«, devoted more than a fraction of his time to studying Islam. Bettina von Arnim specifically dedicated one of her works to the »spirit of Islam.«

In order to grasp the importance of evolutionary thinking, it is sufficient to bear in mind that well into the 1700s, the order of society – state, religion, the classes, the plundering of the population through feudalism and serfdom – was generally accepted as divinely ordained (and created). It was thus considered an eternal order. The French Revolution proved that the order of society was not eternal or irreversible but changeable through enlightened human beings. The evolution of societies moved into the focus of considerations. Karl Marx, again, theorized on the evolution and processuality of the economic means of production in the 1800s. Their driving force was the discrepancy between productive force and the relations of production – thus, class conflicts were the result of this class antagonism.

Just as an explanation: contemporary productivity would allow the supply of sufficient food and medicine to all people – if the relations of production were not subjected only to maximizing profit. Marx thus demonstrated that the social order was not eternal and irreversible but rather outlined a concept of social development. The discrepancy between productive force and the relations of production alone would not generate changes »just like that.« They had to be achieved through practical action, uprising, revolution. (Thus, such a social evolution would not be a slow and gradual one, in the sense of Charles Darwin's concept, but rather dialectic, meaning characterized by leaps and bounds. It would be a revolutionary development, triggered by the discrepancy, and characterized by »abandoning gradualness«, thus turning quantity into quality of change.)

In his writings, Marx refers to a number of natural-scientific aspects – biological ones included. He does so when writing:

> »The creation of the earth has received a mighty blow from *geognosy* – i. e., from the science which presents the formation of the earth, the development of the earth, as a process, as a self-generation. *Generatio aequivoca* [the sponaneous creation and self-creation, respectively, of organisms out of anorganic compnents, HV] is the only practical refutation of the theory of creation« (Marx 2000 [1844]: 48).

The idea of evolution plays into the theories of the natural sciences as well as society. This indicates an important aspect which should be mentioned: conclusions of the natural sciences do not stand in the way of seeking the development towards a better society, as it is sometimes claimed. There is no conflict between an allegedly »evil« biology – that dictates the existence of two sexes – and the social sciences that fight a binary concept of the sexes in itself (see Katrin Kämpf, *L. Mag – Das Magazin für Lesben [L. Mag – The Magazine for Lesbians]*, 7/8, 2010: 76). Both fields present at the same time concepts to require a strict distinction into two sexes, as well as concepts leaving room for turning away from it. As a preview of this book's conclusion: evolutionary considerations offer very much room for breaking with the concept of pre-determined binary sexes.

Since the 1800s, theories gained momentum that discussed the development of the earth through cooling off over a longer period, the emergence of species and organs, the development and differentiation of organisms etc. (those theories have existed before, but had been socially and scholarly marginalized). They went well together with ideas which saw the small and smallest elements as the basis for everything (the atomism or chemism) and as the forces of every change. Such forces, in whatever form, were described, for instance, in the theories of electricity, magnetism or gravitation. Theories included the development of the organism and its organs as well.

The development of the embryo, as it was understood, began with shapeless matter (a cluster of undifferentiated cells in our modern concept). Forces acted upon that matter, triggered its development and differentiation, and thus turned shapeless matter into a defined and differentiated organism. The development would continue after birth and manifest itself in changes of the organs (and the capability of healing wounds, for instance). The school and consecutive educations, but also acquiring and

executing tasks might be added as representing the development of the human being.

Evolutionary, or to employ the other word developmental, thinking had a strong impact on many theories of the nineteenth century. In this, »development« was wide open to a number of influences, but also for argumentations such as for the emancipation of women. Earlier publications – like Pizan's, Fonte's, or Gournay's mentioned above – emphasized the impact society had on the development of the mind – and thus fenced the understanding against the realm of pre-determination through a higher power. Just as much as social conditions could be an obstacle for the mental development of many people, they could have been altered to foster the mental development of all people.

Such considerations gave ground for debates which sought identifying features that were capable of development, and those that were predetermined and unchangeable. As mentioned above, Rousseau focused on the capability of developing the mind and other features of boys/men. Wollstonecraft did the same for girls/women as well as representatives of lower classes. Human features lost their »pre-determination« through evolutionary thinking. In concept, they became changeable – in reality, they did, too.