Reproducing Dichotomies:

Queer Posthumanism and Reproduction in Biopolitical State

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Abstract

The aim of my research is to examine how Patricia MacCormack's vision of queer posthumanism challenges the foundations of the categories formed in relation to the biopolitical state and its side-effect, the anthropological machine. Via her notion of queer posthumanism she questions the base of stable political categories and, thus, demands a more fluid conceptualization of differences. I argue that her vision that in order to obtain hybrid subjectivity, which she sees as a base for a politics of becoming, it is necessary to separate the sexual act from reproduction, stresses that it is not only the cultural representation, but also the material connections, that form the subjectivity in relation to reproduction. I suggest that her requirement to separate the act of sex from reproduction might be problematic because it does not take into reconsideration how both the man/woman and the human/animal binaries are formed in relation to reproduction and are affected by the sovereign's decision. Thus, I propose that instead of trying to challenge the effects of reproduction via scientific practices, it could be more beneficial for queer posthumanism to question the centrality of reproduction in the biopolitical state. Moreover, I argue that it is in the practices of science, especially as it focuses on the molecular, rather than any of its innovations in reproductive technologies, that offer a route for a progressive politics of becoming.

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I will dedicate this thesis to

All of my families

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Introduction

In her article "Queer Posthumanism: Cyborgs, Animals, Monsters, Perverts" (2009), Patricia MacCormack argues for the possibility to combine queer and posthumanist theories. She states that queer theorists have examined the construction of the binary terms such as masculinity/femininity and heterosexual/homosexual. Through the notion of desire, she strives to offer a more nuanced vision of the world where people are not bound to these dichotomies and, thus, to show how these categories fail to represent the world. For example, she describes how one aspect of queer theory initially emerged as a response to the status of lesbians in gay studies. Because gay studies were presumably masculine, lesbians could be included merely as a suffix, thus, constructing an image of humanity as masculine. This example shows how the conceptualization of humanity and sexuality are intertwined and, thus, it supports MacCormack comment that "in order to interrogate the role of sexuality in the formation and reification of subjectivity one must presume the consistency of all subjects as first belonging to a hermeneutic ontological system – human."[1] Instead, MacCormack wishes to combine the posthumanist critique of stable categories, such as human/animal, with queer theory. Her vision of posthumanism resonates with Cary Wolfe's definition, which highlights that rather than challenging the notion of human as such, posthumanism aims to question how humanity is understood via the opposition of categories like human/non-human.[2] This thesis focuses on the proposal MacCormack makes for combining the strength of queer theory with posthumanism for a more encompassing critique of the political limitations of categories. As I will detail more in the course of this introduction, while MacCormack's synthesis of these two theories and her analysis of reproduction presents the opportunity to see some of the undesirable political effects of categories, her analysis and "solutions" do not fully resolve the issues she identifies. Thus, this

[1] Patricia MacCormack, "Queer Posthumanism: Cyborgs, Animals, Monsters, Perverts," in *The Ashgate Research Companion to Queer Theory*, ed. Noreen Giffney and Michael O'Rourke (Farnham and Burlington: Ashgate Publishing, 2009), 111.
[2] Cary Wolfe, *What Is Posthumanism?* (Minneapolis: University of Minnesota Press, 2010), xxv.

thesis engages with the literatures of queer theory, posthumanism and biopolitics that inform MacCormack's analysis, as well as the question of the political significance of reproduction, to engage with the possibilities that limitations of science and categories in order to envision a different kind of sexual/gender politics – a politics of becoming.

A Fundamental part of MacCormack's vision of queer posthumanism is to see human life as a combination of materiality and discursive formation. Her vision of this combination builds on Giorgio Agamben's concepts (via Rosi Braidotti) *zoē*, which describes the material, non-human, life and *bios*, which describes life as political and discursive in the modern biopolitical state. These terms are essential when analyzing MacCormack's vision of how the connection between sexual acts and reproduction forms subjectivity, which will be my main focus in this thesis.

MacCormack states that "posthuman hybrids" contest the formation of stable identity categories in two ways. Firstly, they cannot be regarded as a distinct entity because subjectivity is formed in relation to other(s). Thus subjectivity is never finished, but it *becomes* in the moment. Secondly, when the subject is considered as a hybrid being, it becomes impossible to know one's future because the boundaries of subjectivity are formed in relation to the outside, which cannot be controlled. Thus, subjects cannot define themselves in accordance with an expected future. MacCormack argues that,

> Hybrids do not know their own future(s) and thus cannot seek to preserve or extend their present, nor sacrifice other entities in order to affirm their current form or identity. Hybrid posthumans celebrate the sacrifice of self, but theirs is not a death sacrifice, theirs is a queer sacrifice *because reproduction does not map sexual acts*.[3]

What makes hybrid posthumans' sacrifice a "queer sacrifice" instead of a "death sacrifice" is that hybrid posthumans do not strive to preserve a vision of themselves as separate and coherent entities but acknowledge that their subjectivities are always formed relationally. This argument seems to suggest that in order to challenge a vision of the subject as a fixed entity it is necessary

[3] MacCormack, "Queer Posthumanism: Cyborgs, Animals, Monsters, Perverts," 119. My italicization.

to separate the sexual act from reproduction. This statement can be better understood in relation to MacCormack's earlier point that science has long defined female sexuality "through [women's] reproductive capacity rather than their desire".[4] Thus, the connection between sex and reproduction comes to represent the danger of stabilized categories because if reproduction is connected to the sexual act, subjects who engage in sex are not shaped by other(s) but they define their difference in accordance with the expected future. In other words, sexual acts would not consist of people who shape each other's understanding about themselves, but it would be an act between men, possible fathers, and women, possible mothers. In short, MacCormack sees the need to transform the influence that reproduction has in the definition of subjectivity via sexual acts in order to maintain queer posthumanist subjectivity.

Though queer theorists have argued against the idea that the act sex and reproduction would be naturally linked[5], MacCormack's vision of hybrid subjectivities stresses that it is not only the cultural representation, but also the material connections, that form the subjectivity in relation to reproduction. Thus, seeing matter as dynamic can offer new ways to form the relation between sexed bodies because, with the use of science for example, it is possible to create reproduction without the act of sex. However, MacCormack states "while science has created reproduction in Petri dishes and virtual wombs, sexuality and sexual acts in society ironically continue to mimic what was, pre sexual 'revolution' reproductive acts."[6] This argument resonates with feminist critiques towards the new reproductive technologies, which have emphasized that rather than liberating women for example in vitro fertilization has mainly reinforces the hierarchical relation between men and women.[7] This reading of MacCormack's argument is supported by her earlier view of the new "God-Man", which refers to the new role of the scientists in forming the ideological foundations of society that challenge the earlier notion of the

[4] Ibid., 116.
[5] I will elaborate this point in the chapter 2.
[6] MacCormack, "Queer Posthumanism: Cyborgs, Animals, Monsters, Perverts," 119.
[7] See for example: Robyn Rowland, *Living Laboratories: Women and Reproductive Technologies* (Bloomington: Indiana University Press, 1992), 3; Rosi Braidotti, *Metamorphoses: Towards a Materialist Theory of Becoming* (Cambridge: Polity, 2002), 259.

human, by observing life at the molecular level, but simultaneously maintain the idea of spatially and temporally fixed categories. MacCormack states that creating test-tube babies has mainly enabled *God-Men* to extend their influence rather than challenge, for instance, the man/woman and the human/animal binaries.[8] In other words, MacCormack both sees science as reiterating categories but also, with its developments with reproductive technology in particular, as being the catalyst for decoupling the sexual act from reproduction. She creates an assumption that if the acts of sex were more dramatically disassociated with reproduction and thus with the identities of potential mother and potential father, then people would have more imaginative space to play with sexual identity categories and practices. Although MacCormack sees that science has somewhat failed to transform the meanings posited to sexual acts, what remains central in her argument is that the material connection, which is the base of relation between sexual act and reproduction in her analysis, between sexed bodies impedes the formation of queer posthumanist subjectivity. Thus, MacCormack creates an assumption that in order to maintain a *politics of becoming*, in other words politics based on ethics of difference rather than similarity, the material base of the connection between the act sex and reproduction needs to be transformed.

I am sympathetic to MacCormack's attempt to connect queer and posthumanist theories because this connection could enable a more productive notion of difference and offer a vision of how social categories are intertwined. However, I maintain that MacCormack's emphasis on the need to challenge the material connection between sex and reproduction can be problematic in relation to her political vision of becoming. I see that this imperative to separate sexual act from procreation can simultaneously reinforce the importance of reproduction in the biopolitical state and, later in the thesis, I will use Ruth Miller's work to explain why this is problematic. In a biopolitical state the function of reproduction is to produce the potential life of the citizens; MacCormack's solution which rests on separating the sexual act from reproduction, via science, while perhaps achieving a renegotiation of the man/woman binary, might inadvertently

[8] MacCormack, "Queer Posthumanism: Cyborgs, Animals, Monsters, Perverts," 114-116.

strengthen the definition of the human as a distinct category from the animal. Thus, while trying to transform the man/woman relation in accordance with a *politics of becoming*, there is a danger that MacCormack, in the same gesture naturalizes the fundamental division between human and animal. In other words, her vision of the way in which science could be a vehicle for challenging binary categories through reproductive technologies and her overall commitment to liberate people from reproduction, can in the end reinstate another kind of binary – that between animal and human. Moreover, I will argue that MacCormack's critique of contemporary scientific practices, as reproducing binaries, misses the potentiality of scientific practices for enabling a politics of becoming.

Thus, this thesis engages with MacCormack's article with respect for her innovative descriptions of the possible connections between queer and posthumanist theories, reading her strengths and conceptual shortcomings in relation with other key theorists, such as Agamben and Miller. It goes without saying, my critique is not done with the purpose of dismissing MacCormack's achievements in any way, but because analyzing her "shortcomings" can offer an important addition in the burgeoning field of interdisciplinary theory on the political significance of social categories. To this end, in Chapter 1 I examine MacCormack's indebtedness to Agamben's concepts of zoē and bios and how the link of these two concepts helps to understand his notion of the *animalization of man*, which I juxtapose with MacCormack's vision of the Deleuzian concept of *becoming-animal*. I argue that while Agamben sees the scientific focus at the molecular level of the bodies as an abandonment of humanity, MacCormack sees it as a channel for creating more open vision towards potential connections between humans and animals. Moreover, I argue that while MacCormack sees science as potential challenger of both the human/animal and man/woman binaries, she is critical towards scientific practices because they reinforce the specificity of the human rather than challenge it.

In the second chapter, I maintain that MacCormack does not only want to imagine the connection between reproduction and sexual act differently but to revolutionize the material base

of this connection. By analyzing her examples of how science has made it possible to create life in Petri dishes and construct virtual wombs, I will argue that she sees scientific practices as potentially challenging the connection between the human womb and the child. I suggest that her requirement to separate the act of sex from reproduction might be problematic because it does not take into reconsideration how both the man/woman and the human/animal binaries are formed in relation to reproduction. Thus, I propose that instead of trying to challenge the effects of reproduction via scientific practices, it could be more beneficial for queer posthumanism to question the centrality of reproduction in the biopolitical state.

In the final chapter, I argue that scientific practices, using animal experiments as my base, can support the politics of becoming. I maintain that laboratory, by enabling observation at the minute level through microscopes, have the potential to either support or challenge the human/animal division. Furthermore, the laboratory is a space that makes it possible to manipulate materiality and the limits of reproduction. With this argument, I wish to bring forth a vision of science that does not merely support the human/animal binary but enables the possibility to see matter as dynamic. Because it allows such versatile readings, I argue, the laboratory is a good example of a space that enables both the emergence of the *God-Man* and the possibilities for the politics of becoming.

I am sympathetic to MacCormack's critique of the way science can and does legitimate artificial binaries (between men and women, animal and human, etc.), while at the same time see that her faith in reproductive technologies as a mechanism for better politics is misplaced. Nevertheless, in chapter 3 I explore in more detail the potentialities of science in so far as it provides a window onto the life of the organism where the divisions between species, gender, and so forth, are unstable, dynamic and transforming. Thus, I argue that it is in the practices of science, especially as it focuses on the molecular, rather than any of its innovations in reproductive technologies, that offer a route for a progressive politics of becoming.

Chapter 1: The Animalization of Man vs. Becoming-Animal

1.1 Introduction

MacCormack's argument that science has enabled ways to separate the sexual act from reproduction via artificial means to create and maintain life, which she illustrates through the examples of Petri dishes and artificial wombs, is tightly linked to her vision of life as both material and discursive. In her vision, matter does not represent a static entity but it has generative power and, then, changes in matter can alter the discursive meanings of life.[9] In other words, by creating ways to break down the connection between human bodies and reproduction, it is possible to renegotiate the connections between sexed bodies. I will examine the potential implications of MacCormack's requirement to separate sexual acts from procreation in Chapter 2; but in this chapter, I will examine MacCormack's relation to Agamben's biopolitical theory

For MacCormack, the connection of the concepts of *zoē*, which refers to organic life, and *bios*, which means political and discursive life, is an essential part of her vision of the potentiality offered by queer posthumanism. She emphasizes that the boundary between *zoē* and *bios* is not stable but results from the ongoing negotiation between the dominant (*bios*) and non-dominant (*zoē*), for example between human and non-human. MacCormack wants to challenge the political practices that attempt to set this boundary and, thus, queer posthumanism cannot be understood without examining its relation to the biopolitical state. In order to examine this connection, I will discuss the concepts *zoē* and *bios*, which are delineated in Agamben's theory but which MacCormack engages via Braidotti's elaboration of the functions of the biopolitical state.

Biopolitics is a term introduced by Michel Foucault during his lecture series at the College de France in 1976. Through the notion of biopower Foucault extends his earlier studies of power

[9] Patricia MacCormack, "Queer Posthumanism: Cyborgs, Animals, Monsters, Perverts," in *The Ashgate Research Companion to Queer Theory*, ed. Noreen Giffney and Michael O'Rourke (Farnham and Burlington: Ashgate Publishing, 2009), 112-113.

by stating that it is possible to see new mechanisms, techniques and technologies of power emerging in the late 18th century. In tandem with disciplinary techniques, which attempted to control individual bodies, new regulatory power targeted living bodies as populations. By keeping track of a population's average condition for example via birth and mortality rates, the state invested in knowing more about population as a whole in order to regulate the average life measurements of its people. This is not to say that regulatory power would have replaced disciplinary power; but instead the modern state which is centralized around life, and thus defined by Foucault as the *bio*political state, functions via them both.[10] Foucault also notes that sexuality and reproduction are on the focus of both disciplinary and regulatory power because they affect both the individual bodies and a population.[11] One result of this emphasis on sexuality and reproduction can be seen in Foucault's description of Victorian era, when the conceptualization of sexuality and reproduction was tied to the notion of the conjugal family whose purpose was to produce children.[12] Thus, MacCormack's demand to separate the sexual act from reproduction can be seen as closely related to the biopolitical fixation with sexuality and reproduction.

One of the most intriguing arguments in Giorgio Agamben's elaboration of Foucauldian biopolitics is that the concentration camp could be considered as "the hidden paradigm of the political space of modernity."[13] This statement does not suggest that practices, which happened during holocaust, could be seen as the ordinary functions of the modern biopolitical state. Rather it illuminates the logic between sovereign decision and life. In order to understand what this logic entails, it is necessary to examine how Agamben traces the genealogy of the connection between bare life and politics.

[10] Michel Foucault, *Society Must Be Defended: Lectures at the College De France, 1975-76*, 1st ed. (New York: Picador, 2003), 241-253.
[11] Ibid., 251-252.
[12] Michel Foucault, *The History of Sexuality* (New York: Vintage Books, 1988), 3.
[13] Giorgio Agamben, *Homo Sacer: Sovereign Power and Bare Life*, Meridian : crossing aesthetics (Stanford, Cal: Stanford University Press, 1998), 123.

Agamben argues that modern biopolitics is inevitably connected with the definition of homo sacer. He traces the history of homo sacer to the 17th century document *habeas corpus*, which is seen as one of the foundational texts of modern democratic thought. This document highlights that everyone whose case is tried at court has to be physically present before a court of justice. According to Agamben, the corpus became the new subject of politics and what became emphasized in the sovereign subject was their physical existence, or bare life, rather than their political status. Agamben states that modern political notion of citizenship, declared during the French revolution, challenged the 17th century vision by demanding that the rights of man[14] should be gained from birth. Following this principle, the modern political thought posited bare life as the bearer of rights and this, Agamben states, is the foundation of modern biopolitics: the indistinction between natural and political life.[15]

Agamben contrasts the notion of bare life in the modern biopolitical state to Aristotle's separation between *bios* and *zoē*. Bios is a term defining the proper way of living for an individual or a group and zoē, which indicates the fact of living in every living being, is excluded from the polis and "remains confined – as merely reproductive life – to the sphere of the *oikos*, 'home'."[16] Through this differentiation Agamben wishes to illustrate how modern democracy "is constantly trying to transform its own bare life into a way of life and to find, so to speak, the *bios* of *zoē*."[17] The politicization of bare life does not merely mean that the value of the natural life of population is emphasized in the biopolitical state but also that the sovereign's power to define who are the proper citizens is hidden. However, this separation between the bare lives and right bearers is made in the state of exception, which highlights that instead of articulating an unchangeable distinction between the inside and outside, the sovereign has to decide who are

[14] Agamben defines the rights of man as the rights which are granted to people because of their status as humans. However, Agamben challenges the base of these rights through the notion of refugee who does not have access to the same rights as citizens, although they are human. See: Ibid., 126-128.
[15] Ibid., 123-128.
[16] Aristotle *Politics* (1252), 26-35 cited in Ibid., 2.
[17] Ibid., 9.

considered as political subjects.[18] Agamben remarks that the concentration camp can be seen as a paradigm of the political space of modernity because there the state of exception starts to become the rule rather than an exception. In other words, the decisive function of the state, which is usually unseen, can be performed without limits. Thus, whoever entered the camp was "in a zone of indistinction", in a space whose existence was legitimized via the idea of rights and protection of the citizens but where the base of this legitimation no longer made any sense.[19] In short, Agamben sees camp as a paradigmatic space of the modern biopolitics because it shows via permanent spatial arrangement how state's sovereignty is based on decision defining the people rather than representation of the people.

This chapter takes a closer look on the connection between the biopolitical definition of the subject and the human/animal and man/woman binaries via comparative study of Agamben's books *Homo Sacer* (1998) and *The Open* (2004). First, I will examine how the biopolitical state attempts to constructs, via *the anthropological machine*, the human/animal binary. I will point out that Agamben sees that both the concentration camp and scientific practices, which are focused on the molecular level of the bodies, challenge the category of human. However, his reading of these practices is not celebratory but rather he sees *the animalization of man*, a notion produced for example through the Human Genome Project, as the abandonment of humanity. I will contrast his vision to Deleuzian concept of *becoming-animal*, which MacCormack considers as an important part of a *politics of becoming*. I will argue that MacCormack does not see animalization as an abandonment of humanity because queer posthumanism does not presuppose the category of human as distinct from animals. However, I will point out that MacCormack's vision of the scientific practices is not solely positive because she argues that they reinforce the notion of matter as stable.

[18] Ibid., 19, 139-140.
[19] Ibid., 168-171.

1.2 The anthropological machine vs. the posthistorical man

In order to examine how biopolitics is linked to human/animal division, it is vital to consider how biopolitics function through, for example, scientific practices. While *Homo Sacer* concentrates on describing the genealogy of the notion of life in relation to politics, in his book *The Open*, Agamben returns to the Aristotelian notion of life by pointing out that Aristotle does not actually define life as such but rather approaches it through different functions. That is to say, the definition of living being is not based on a clear-cut boundary between the living and the non-living but the concept of living is tied to different potentialities such as growing, thinking and the need for nutrition. French anatomist and physiologist Xavier Bichat applied Aristotle's separation of nutritive life, which his contemporaries already renamed as 'vegetative' life, at the beginning of the 19th century when he divided organic and animal life. Bichat's articulation of the principles of life shows how both meanings given to life can be related to humans: organic life starts already in the womb and animal life develops in relation to the external world.[20]

Agamben suggests,

> It is possible to oppose man to other living things and at the same time to organize the complex – and not always edifying – economy of relations between men and animals, *only because something like an animal life has been separated within man, only because his distance and proximity to the animal have been measured and recognized first of all in the closest and most intimate place*.[21]

In this excerpt, Agamben describes one of the main aspects of the logic behind the human/animal separation: rather than being based on the comparative study between humans and animals, the distinction between them is already made by differentiating *zoē* and *bios*[22]. Thus, the attempts to draw a line between human and animals via *the anthropological machine* could be seen as practices that aimed to affirm human specificity.

[20] Giorgio Agamben, *The Open: Man and Animal* (Stanford, California: Stanford University Press, 2004), 13-16.
[21] Ibid., 15-16. My italicization.
[22] By referring to life in this case as *zoē* and *bios,* I wish to emphasize that the separation between humans and animals is done in relation with the political existence of human.

The base of the modern anthropological machine could be set to the end of the 17th century, when the methods, with which nature was observed, changed. Michel Foucault states that before that time, accounts of, for example, animals entailed all the information about them, including the fairytales they were part of or the best ways to prepare dishes out of them. Foucault points out that before the end of the 17th century the signs with which animals were identified were part of the animals themselves but thereafter the signs became the representations of animals. In other words, scientists started to examine the animal itself, rather than human knowledge of them, and classified animals according to certain characters. It followed that animals were no longer seen as a part of historical traditions and knowledge of the world but as a part of ahistorical categories.[23] Mary Poovey and Charles Taylor point out that this categorization can be seen as one effect of the reformed scientific practices which aimed to generalize the particular. The assumption that it was possible to classify information was based on the belief that nature entails a certain order, set by God, which natural scientists could discover. Rationality became the way to grasp the design of nature, made by God, and it was intertwined with the idea of objective knowledge and observation.[24] Foucault argues that instead of listing all the knowledge about the subject of the study, including hearsay, researchers had to observe the things themselves in order to write about them. However, also certain senses were excluded from the observations, for example taste and smell, because there was no guarantee that all the people would taste and smell things similarly and thus using these senses as a base of information would have compromise the principle that knowledge should be the same for everyone. This is why Foucault argues that sight became a privileged way to obtain information from the nature.[25] Vision is also emphasized in Carolus Linnaeus', the founding father of modern taxonomy, text *Menniskans Cousiner* ('Man's Cousins') which compares humans and apes.

[23] Michel Foucault, *The Order of Things: An Archeology of the Human Sciences* (New York: Vintage Books, 1973), 128-132.
[24] Mary Poovey, *A History of the Modern Fact: Problems of Knowledge in the Sciences of Wealth and Society* (Chicago: University of Chicago Press, 1998), xx; Charles Taylor, *Sources of the Self: The Making of the Modern Identity* (Cambridge: Cambridge University Press, 1992), 271-274, 282.
[25] Foucault, *The Order of Things: An Archeology of the Human Sciences*, 132-133.

As Agamben remarks, Linnaeus found it difficult to categorically separate humans and apes based on the principles of natural science because they share similar bodily features.[26] Londa Schiebinger argues that the name Homo sapiens, which Linnaeus attached to the description of humans, differentiates humans from other primates through the ability to reason.[27] Agamben analysis of the term "Homo sapiens" is slightly different. Agamben states that before the addition of "sapiens", Linnaeus referred to humans as Homo with note "*nosce te ipsum*" ("know yourself"). Thus, rather than seeing reason as a description of humans, Agamben suggests that the term "sapiens" should be read as an imperative for humans to form an idea of themselves before they can be considered as distinct from animals.[28] Following this logic Agamben concludes "Homo sapiens, then, is neither clearly defined species nor a substance; it is, rather, a machine or device for producing the recognition of the human."[29]

Linnaeus' indetermination did not stop this anthropological machine to try to define a clear-cut boundary between humans and apes and these attempts even escalated when Darwinism started to take root among scientists. Agamben points out that, for example, linguistic Heyman Steinthal was eager to maintain the strict separation between humans and apes via the notion of language. He saw that language distinguished humans from the apes because it arises from the human soul only. However, his argument had an internal paradox that he himself detected a few years later: in his reasoning language creates man who then creates language.[30] Because the anthropological machine is based on a separation made in the first place within human, Agamben argues that it "necessarily functions by means of an exclusion (which is also always already a capturing) and an inclusion (which is also already an exclusion)."[31] He differentiates the anthropological machine of earlier times from the modern machine by pointing

[26] Agamben, *The Open*, 25.
[27] Londa Schiebinger, *Nature's Body: Gender in the Making of Science* (New Jersey: Rutgers University Press, 2006), 53-55.
[28] Agamben, *The Open*, 25-26.
[29] Ibid., 26.
[30] Ibid., 35-36.
[31] Ibid., 37.

out that whereas the earlier machine attempted to humanize animal[32], the modern machine is based on the animalization of man of what Jews during the holocaust are an example of. What is common in both of these machines is that they form "a zone of indifference" where the decision of the borders of humanity is made.[33] Therefore, the animalized man is not a human, and neither an animal, but life "which is separated and excluded from itself – only a *bare life*."[34] Agamben comments that concentration camps are "an extreme and monstrous attempt to decide between the human and the inhuman, which has ended up dragging the very possibility of the distinction to its ruin."[35] Thus, *the animalization of man* does not mean for Agamben a life which could be equated with that on the animal. In order to compare Agamben's vision of the animalization of man with MacCormack's queer posthumanism, it is necessary to understand how Agamben can maintain the idea of the category of human even in the zone of indistinction. It is possible to understand Agamben's analysis in relation to his vision of the posthistorical man.

Agamben states that the historicity of man is supported by constantly drawing a boundary between man and animal through *the anthropological machine*,[36] thus, the historicity of man could be equated with the success to maintain a binary division between humans and *all* animals. The concentration camp challenges the ability to see humans and animals as distinct categories when some humans are degraded to the level of animals. By taking away the rights from the Jews, the concentration camp contested the idea that human life, seen as a combination of both *zoē* and *bios*, would in it bear the rights of man; that *bios* would be inserted to *zoē*. Thus, when political life was denied from the inhabitants of the camp, what remained was bare life. For Agamben, this *animalization of man* stands as one of the landmarks indicating the end of human historicity because it denies that humans would fundamentally be different from animals. On the contrary,

[32] One of the questions posed by the natural scientists was how "wolf-children", who were raised outside of civilization, could be seen as human.
[33] Agamben, *The Open*, 37-38.
[34] Ibid., 38. My italicization.
[35] Ibid., 22.
[36] Ibid., 80.

Agamben argues, referring to Heidegger,[37] that humans and animals are essentially different in their relation to their surroundings: humans are able to conceptualize the world around them while animals merely share an instinctive relation with their environment and, then, cannot never fully categorize the world.[38] Following the logic that humans and animals are fundamentally different, then, the animalization of man cannot degrade humans to become animals but, rather, forces them to the zone of indistinction where they still have bodily abilities limited to humans but their humanity is not recognized by the law. Thus, bare lives are not outside of the category of the human but they are *abandoned* by law which sustains this category. Therefore, neither the animalization of man (the modern anthropological machine) nor the humanized animal (the anthropological machine of earlier times) can ever dispel other humans from the category of human but merely to abandon their rights and, thus, form the zone of indistinction that reveals the artificial bond between *zoē* and *bios*.

Agamben's notion of the animalization of man differs from MacCormack's vision of queer posthumanist politics of becoming because it insists that the categories of human and animal are based on different potential to know the world and, therefore, they exist prior to their classification. Instead, MacCormack uses the notion of *becoming-animal* to argue that human-animal relation should not be based on pre-existing definitions of the animal but should be formed by entering "into particular affects shared with animals" which are guided through curiosity rather than control and can, thus, transform the concept of the animal.[39] Therefore, a politics of becoming challenges the foundation on which Agamben bases the dichotomy between humans and *all* animals by requiring that animals should not be classed according to set boundaries. In this aspect, queer posthumanism is akin to Haraway's vision that instead of assuming that it is possible to know or that it is not possible to know how animals see and think

[37] Heidegger's vision of animals is not, however, only supported, as Agamben seems to maintain. For example Matthew Calarco and Jacques Derrida have criticized Heidegger's vision. See: Matthew Calarco, *Zoographies: The Question of the Animal from Heidegger to Derrida* (New York: Columbia University Press, 2008), 15-54; Jacques Derrida, *The Animal That Therefore I Am* (New York: Fordham University Press, 2008), 141-160.
[38] Agamben, *The Open*, 51-61.
[39] MacCormack, "Queer Posthumanism: Cyborgs, Animals, Monsters, Perverts," 123.

about the world, the connections between humans and animals should be based on the change that "positive knowledge of and with animals might just be possible."[40] In brief, queer posthumanism does not assume any definition of animals as certain but highlights that the knowledge of animals should be formed *with* them rather than *of* them. However, what Agamben and MacCormack seem to have in common is their vision of the contemporary scientific practices, which enable a vision of human at the molecular level.

Agamben states that posthistorical man can defy the anthropological machine by "no longer preserv[ing] his own animality as undisclosable, but rather seek[ing] to take it on and govern it by means of technology."[41] Thus, Agamben sees, for example, the scientific attempts to map the Human Genome as a form of *the animalization of man* but while in the concentration camp the animalization was based on the denial of the political rights, in this case the animalization is founded on the aim to insert politics into bare life and, thus, seeing *zoē* as the main indicator of what it means to be a human. This constructs a paradox, because similarly to Agamben's analysis of the human rights, if *zoē* is taken as the main measure of humanity then the value given to *bios* is inserted to *zoē*, however, without the recognition of the *bios* itself. For MacCormack, the genome project does not posit a similar dilemma because in queer posthumanist account the discursive notion of life is not tied to a particular human/animal separation and thus changes in matter can alter the meanings of political life as well. However, what both MacCormack and Agamben share in their analysis of the modern scientific practices is the vision that science's aim is to map down and control the biological functions of the human body – and that in the process, it follows the same methods as the 18- 19th century natural science. I will approach these methods via an analysis of popular science books that describe life at the molecular level because I see that both Agamben's and MacCormack's vision of the scientific practices is echoed in many of these popular science books.

[40] Donna Haraway, *When Species Meet* (Minneapolis: University of Minnesota Press, 2008), 21.
[41] Agamben, *The Open*, 80.

1.3 Observing life at the molecular level

> The genes are not destroyed by crossing-over, they merely change partners and march on. Of course they march on. That is their business. They are the replicators and we are their survival machines. When we have served our purpose we are cast aside. But genes are denizens of geological time: genes are forever.[42]

Popular science books usually use culturally familiar narrative structures that emphasize subjects with agency. As Venla Oikkonen points out, it is difficult to narrate evolutionary theory with similar structure because it lacks both definite subjects and agency. In addition, the theory of evolution can be seen through two different narrative levels – one concerning the species and one the organisms. However, Oikkonen notes that popular science books have managed to connect evolutionary theory with familiar story structures by using one additional narrative level, which Oikkonen calls micro-narrative. She defines the micro-narrative as an "imaginary site inhabited by microscopic entities such as DNA, genes, chromosomes, or gametes (egg and sperm)." Oikkonen suggests that one appeal of the micro-narrative is that it places minuscule entities as autonomous actors who strive to attain their own goals. [43] For example Richard Dawkins' book *The Selfish Gene*, which was among the first books to use micro-narrative, describes the world from the genes' point-of-view by emphasizing that instead of being the passive building material of the bodies, genes are the ones manipulating the bodies according to their own aims.[44] Though authors such as Dawkins impose qualities that are usually connected with humans, such as reason, on minute entities, the emphasis on the microscopic units still challenge the strict boundary between humans and animals. If minute entities are seen as primary actors of the evolutionary story, then both human bodies and animal bodies can be seen as mere playgrounds for these long-life beings. In other words, although the micro-narrative pictures, for

[42] Richard Dawkins, *The Selfish Gene*, New ed. (Oxford: Oxford University Press, 1989), 35.
[43] Venla. Oikkonen, "Narrating descent popular science, evolutionary theory and gender politics.," *Science as culture.* - 18, no. 1 (2009): 1-7.
[44] Dawkins, *The Selfish Gene.*

example, genes as possessors of characters that are traditionally connected with humans it, at the same time, stresses the ambiguity of the category of human. As I stated before, this animalization of man is evaluated differently in Agamben's and in MacCormack's texts; for Agamben it represents the abandonment of humanity while for MacCormack it creates a possibility for material changes that enable *a politics of becoming*. However, when highlighting the functions of, for example, genes or DNA, the micro-narrative posits a certain image of the laboratory practices. This image, I argue, is problematic for Agamben's and MacCormack's analysis of science alike.

The ability to describe minute beings suggests that scientists are able to observe them through a microscope; further as Judith Roof points out, "the microscope also provided the possibility that a more atomistic and mechanical view of life could be substantiated by finding basic, microscopic structures."[45] This notion of the microscope seems to resonate with the taxonomic principles of the 17th-18th centuries which highlighted the need to categorize the knowledge gained via sight. Secondly, Oikkonen points out that DNA has become a cultural icon that is often described with terms such as "the book of life", "the human library" or "the code of codes" and, thus, creates an image of something which can be perceived and deciphered.[46] Hence, the ways in which popular science books define DNA construct an idea that scientists would be able to, when using correct methods, understand the logic behind organisms – an idea which does not seem so different from the 17th century deistic understanding of nature. Both Agamben and MacCormack highlight that the contemporary scientific practices are centred on the attempt to manage and control life by mapping biological organisms.[47] MacCormack emphasises that this image of the ability to control biology is based on a particular vision of matter as the combinations of static units and, thus, scientific practices deny matter's potentiality to transform, which she sees as one of the key factors of queer posthumanism.[48] In short,

[45] Judith Roof, *The Poetics of DNA* (Minneapolis: University of Minnesota Press, 2007), 36.
[46] Oikkonen, "Narrating descent popular science, evolutionary theory and gender politics.," 8.
[47] Agamben, *The Open*, 77; MacCormack, "Queer Posthumanism: Cyborgs, Animals, Monsters, Perverts," 116.
[48] I will return to this vision of science in Chapter 3 and argue that scientific practices can also support the notion of matter as dynamic.

although MacCormack does not see *the animalization of man* as problematic but rather as liberating because it challenges the assumed naturality of the human/animal division she, nevertheless, maintains that scientific methods, which have not altered much from the 18th-19th centuries' natural science, support an image of matter as inactive. This has implications for her vision of the possibilities to separate the sexual act from reproduction; as science offers new ways to overcome the material base of this connection via new reproductive technologies it additionally, according to MacCormack, ties these innovations to the existing categories. Instead of challenging the man/woman binary, the scientific practices, thus, reinforce the notion of man as the apotheosis of humanity who can now, additionally, control reproduction.[49] Despite these assumed limitations of scientific practices, MacCormack still seems to rely on them in her demand to alter the material base of the connection between sex and procreation. In the next chapter, I will examine this demand more closely and argue that instead of supporting her vision it can vitiate the possibilities to obtain a *politics of becoming* because while it might challenge the human/animal binary it can simultaneously reinforce the human/animal dichotomy.

1.4 Conclusion

In this chapter, I have argued that MacCormack's vision of the animalization of man differs from that of Agamben because she does not presuppose a fundamental base for the human/animal dichotomy. However, I have argued that both Agamben and MacCormack criticize scientific practices due to their attempt to map and control organisms. Thus, MacCormack sees that, instead of supporting queer posthumanist vision of matter as active, science reinforces a notion of matter as stable. Nevertheless, I maintain that she sees science as potential liberators of women because it offers ways to disconnect sex from procreation. However, in the next chapter I analyze the way that MacCormack's demand for this separation is

[49] MacCormack, "Queer Posthumanism: Cyborgs, Animals, Monsters, Perverts," 114.

problematic. Because she does not take into reconsideration how reproduction shapes both man/woman and human/animal connections there is a danger that her requirement to challenge the material base of the man/woman dichotomy can reinforce the naturalization of the human/animal division.

Chapter 2: Reproducing Human/Animal and Man/Woman Binaries

2.1 Introduction

In her article, MacCormack operates on the assumption that in order to obtain and maintain a *politics of becoming*, it is necessary to separate the act sex from reproduction. Otherwise, the conceptualization of sexual acts will continue to support the formation of stable sexual identities, pictured as heterosexual and as an act between a man and a woman. Because MacCormack described queer posthumanist subject not as a stable identity but as a hybrid that forms in relation to other(s), she considers it necessary that subjectivity is not tied to certain expected futures. Thus, her vision of queer posthumanism requires that "reproduction does not map sexual acts,"[50] because the connection between sex and procreation would prevent the possibility of the hybrid subjectivity since sexual acts would not consist of people who shape each other's understanding about themselves, but it would be an act between men, possible fathers, and women, possible mothers.

In this chapter, I will, first, compare MacCormack's vision of the connection between the sexual act and reproduction with the critique, made by queer theories, of the assumed naturalness of this connection. I will argue that although they share a similar critique of the presumed natural link between sex and procreation, the examples of life created in petri dishes or maintained via virtual wombs suggest that MacCormack does not merely want to contest the cultural representation of the connection between reproduction and sex but, also, the material connections between the womb and the child. This understanding of her argument leads me to assert that MacCormack's vision of subject formation can be seen akin to Miller's elaboration of Agamben's biopolitics. Miller maintains that the womb should be considered a paradigmatic space of the modern because reproduction is central to the functions of the biopolitical state.

[50] Patricia MacCormack, "Queer Posthumanism: Cyborgs, Animals, Monsters, Perverts," in *The Ashgate Research Companion to Queer Theory*, ed. Noreen Giffney and Michael O'Rourke (Farnham and Burlington: Ashgate Publishing, 2009), 119.

Thus, women's political subjectivity is shaped vis-à-vis their status as "womb bearers" and, I argue, it is this status that MacCormack wishes to challenge.

However, by questioning the way in which Miller's elaboration of Agamben's theory of the biopolitical state might resonate in his notion of the anthropological machine, I will argue that reproduction should be seen as an essential part of not only in the formation of man/woman binary but, also, in the human/animal dichotomy. Following this logic, I will argue that while MacCormack's vision of the need to break down the link between the child and the human womb might alter the connection between men and women, it can simultaneously reinforce the hierarchical relation between humans and animals. Thus, there is a danger that her effort to challenge the man/woman binary might stand in tension with her vision of queer posthumanism.

2.2 Observing nature - changing nature

In the previous chapter, I pointed out how in the 18th and 19th century natural scientists started to construct the category of human via taxonomical categories that described similarities and differences between humans and animals. However, I described mainly how physical similarity connected, for example, humans and apes and how language, then, functioned as a mean to distinct them. However, because language and reason were considered to be learned rather than innate human traits, language presented a potentiality of the human life, realized while comparing the behavior of humans and animals. In other words, by observing how animals acted and related with the outside world, natural scientists were trying to describe characteristics present only in humans, such as the ability to engage in laughter. For example, the 18th century studies about "Peter the wild boy", discovered living in the woods with animals and no connection to human society in 1725, enabled natural scientists to observe how his behavior differed from that of socialized humans.

Scientists described Peter as a body without soul and, hence, "lacking the essential guarantee of the human".[51] Although the observations of Peter can hardly be fully paralleled with the research on animals, his lack of any ability to laugh for example, indicates how natural scientists were trying to verify the specialty of the human based on the comparison of *behavior* between humans and animals. However, in some cases animal behavior worked in opposite manner: rather than showing how humans and animals differ, some characteristics observed in animals, which formerly were considered as part of humans' social behavior, were seen to emphasize humans' connection with nature, thus, constructing the image of the human nature.

Schiebinger argues, for example, that the descriptions of the primates in the 18th century supported the changing social imagery of what were considered as appropriate family relations in Europe[52]. Schiebinger remarks that, for example, the observation of female and male apes forming "affectionate relationships" with each other and the fact that they seemed to grieve strongly after the loss of their partner were connected with the contemporary vision of family, which highlighted love and caring as a base of the conjugal marriage[53]. Also the bond between the female apes and their children was emphasized in 18th century descriptions.[54] Schiebinger's analysis suggests that apes became a symbol of naturalness of the notion of nuclear family and, therefore, the research about apes' behavior supported the Victorian idea of sexuality, which was centered on the family and reproductive functions.[55]

Although the present-day descriptions of nature do not unanimously support the idea that

[51] Michael Newton, "Bodies Without Souls: The Case of Peter the Wild Boy," in *At the Borders of the Human: Beasts, Bodies and Natural Philosophy in the Early Modern Period*, ed. Erica Fudge et al. (New York: Palgrave, 2002), 196-214.
[52] Schiebinger does not elaborate how she understands the concept 'Europe' but according to her examples she is mainly referring to Western and Northern European countries.
[53] Lawrence Stone defines this change as "affective individualism" because it presupposed that love and caring of the marriage could be obtained if marriage would be based on free will. See Lawrence Stone, *The Family, Sex and Marriage in England 1500-1800*, abridged ed. (London: Penguin Books, 1990), 221-269. For further knowledge of the changes in family relations in the 18th and 19th century see Jürgen Habermas, *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society* (Cambridge (Mass.): MIT Press, 1993), 27-56.
[54] Londa Schiebinger, *Nature's Body: Gender in the Making of Science* (New Jersey: Rutgers University Press, 2006), 87.
[55] For the fuller description of Victorian sexuality see Michel Foucault, *The History of Sexuality* (New York: Vintage Books, 1988), 3-13.

animals would perform sexual acts only to reproduce,[56] Judith Halberstam argues that "most biologists observe 'nature' through a narrow and biased lens of socio-normativity and they therefore misinterpret all kinds of bio-diversity."[57] In her article, Halberstam analyzes the movie *The March of the Penguins* (2005) and argues that even the non-reproductive penguin's life is pictured via reproductive family units and, thus, love, family and heterosexuality are described as intertwined.[58] However, feminist and queer scholars have not only criticized the ways in which non-heterosexual activities of animals are explained or left unnoticed but also how procreation that does not follow the logic of human reproduction is often ignored. For instance, Stefan Helmreich's studies of marine biology have shown that certain microbes are able to transfer their genetic information to each other,[59] Myra Hird points out, based on the studies about animal trans, that "virtually all plant, and many animal species are intersex"[60], and Luciana Parisi has, through the descriptions of atoms and molecules, proved that matter does not follow the logic of the human reproduction.[61] In addition, in her earlier work Parisi argues "bacterial recombination and cellular parasitism challenge the identification of sex with sexual reproduction, reproduction with sexual organs and sexual difference with sexed chromosomes."[62] These examples show how theories of sexuality are intertwined with the concept of the human, as MacCormack argues,[63] but their way of contesting the normative connection between the sexual act and reproduction differs from MacCormack's examples; their aim is mainly to show how the descriptions of nature are

[56] For example, bonobos, small chimpanzees, have puzzled natural scientists because they engage in sexual acts with same-sex partners. See: Meredith F. Small, "Prime Mates: The Useful Promiscuity of Bonobo Apes | Nerve.com", 1997, http://www.nerve.com/content/prime-mates-the-useful-promiscuity-of-bonobo-apes. [Accessed 25 May 2011]. For further reading about diversity in animal sexuality see Joan Roughgarden, *Evolution's Rainbow: Diversity, Gender, and Sexuality in Nature and People, With a New Preface* (California: University of California Press, 2009).
[57] Judith Halberstam, "Animating Revolt/Revolting Animation: Penguing Love, Doll Sex and the Spectacle of the Queer Nonhuman," in *Queering the Non/Human*, ed. Noreen Giffney and Myra J. Hird (Aldershot, Hampshire, England: Ashgate, 2008), 269.
[58] Ibid., 269-271.
[59] Stefan Helmreich, "Trees and seas of information: Alien kinship and the biopolitics of gene transfer in marine biology and biotechnology," *American Ethnologist* 30, no. 3 (2003): 341.
[60] Myra J. Hird, "Animal Trans," in *Queering the Non/Human*, ed. Noreen Giffney and Myra J Hird (Aldershot, Hampshire, England: Ashgate, 2008), 236.
[61] See: Luciana Parisi, "The Nanoengineering of Desire," in *Queering the Non/Human* (Aldershot, Hampshire, England: Ashgate, 2008), 283-310.
[62] Luciana Parisi, *Abstract Sex: Philosophy, Biotechnology and the Mutations of Desire* (London, New York: Continuum, 2004), 82-83.
[63] MacCormack, "Queer Posthumanism: Cyborgs, Animals, Monsters, Perverts," 111.

one-sided while MacCormack aims to challenge the concept of nature by destabilizing the assumed limits of biology.

For example, Parisi acknowledges that scientific practices, such as in vitro fertilization, have made it possible to alter the limits of reproduction. However, while Parisi's argument is tied to the analysis that "sexual reproduction and sexual difference have continued to maintain certain identity *in biotechnologies*"[64], MacCormack states,

> While science has created reproduction in Petri dishes and virtual wombs, sexuality and sexual acts *in society* ironically continue to mimic what was, pre-sexual 'revolution' reproductive acts. The invention of the pill was simply a way to continue sexual acts more beneficial for men without reproduction – the results changed but the acts and thus the sexualities did not transform.[65]

Thus, while Parisi attempts to alter the ways in which the connection between sex and procreation is described within scientific discourse, MacCormack highlights how, despite the scientific innovations, the conceptualization of the link between the sexual act and reproduction does not seem to alter. Thus, MacCormack's examples of Petri dishes and virtual wombs can be read as examples of scientific innovations that could, though they "ironically" do not, create a base for the world where the connection between sex and reproduction would not guide people's actions and subjectivity. This is not to say that MacCormack would not consider it necessary to change the scientific perception of sexual identities; on the contrary, as I highlighted in Chapter 1, MacCormack argues that scientific practices support the idea that categories, such as the human, are stable instead of dynamic because they perceive matter as static. Thus, Parisi's attempts to challenge biotechnological discourse support rather than contradict MacCormack's aims.

MacCormack seems to offer two kinds of methods which could disrupt the connection between sex and procreation: while using contraceptive pills it is possible to engage in heterosexual sex with almost a full guarantee that it does not lead to pregnancy whereas virtual womb and Petri dishes suggest that it might be possible, in the future, to create life outside of the

[64] Parisi, "The Nanoengineering of Desire," 283. My italicization.
[65] MacCormack, "Queer Posthumanism: Cyborgs, Animals, Monsters, Perverts," 119. My italicization.

human womb. Therefore, MacCormack's examples could be seen as a way to challenge not only the image that the sexual act and reproduction are inevitably connected but also the meanings imposed on human bodies because of their reproductive function in the society. In order to elaborate this statement, I will discuss Miller's analysis of the womb as a paradigmatic space of the modern biopolitical state.

Miller challenges the standard reading of modern politics provided both by political theorists and feminists who assume the separation between the private and public which, by positing women in the private sphere, construct a notion of men as universal political subject. Because women are biologically and medically linked to the future condition of the nation via their role in reproduction, Miller argues that it would be more accurate to see women, not men, as the political norm in the biopolitical state. One indicator of women's political relevance is that in the biopolitical state abortion, adultery and rape are considered as a single crime – a crime committed against the future of the population. Miller argues that instead of the concentration camp proposed by Agamben, it is the womb that should be considered as a paradigmatic space of exception because the collapse of abortion, adultery, and rape demonstrates that sovereign can, or at lest tries to, decide what kind of citizens should be born.[66] Due to the central role of reproduction in the biopolitical state, the connection between the womb and the political subjectivity is notable and, I argue, it is this subjectivity that MacCormack wished to challenge via her notion of queer posthumanism.

MacCormack's examples of the virtual womb and Petri dishes do not only suggest that one does not need to have sex in order to procreate, which is already made possible via in vitro fertilization, but also that it might be possible in the future to create life outside of the human

[66] Ruth Miller, *The Limits of Bodily Integrity: Abortion, Adultery, and Rape Legislation in Comparative Perspective*, Law, justice, and power (Aldershot, Hampshire, England: Ashgate, 2007), 149-162.

womb[67]. Thus, MacCormack's examples could be read as an attempt to disentangle the connection between females as citizens and females as the womb bearers. However, if MacCormack's example of Petri dishes wishes to challenge the definition that female bodies embody in the biopolitical state, the life created in the Petri dishes would have to grow in the human womb in order to develop as a human. However, the concept of the virtual womb, especially when linked to the notion of Petri dishes, creates an assumption that MacCormack tries to create a vision of the future where it could be possible to create and grow human life outside the human womb. Although the virtual womb does not mean the same as the artificial womb, but a computer model of the womb which offers a way to predict fetus' condition during pregnancy, I assume that MacCormack uses this example as a way to indicate how science has enabled more extensive knowledge about the living conditions in the womb, which might lead to the development of some kind of artificial womb. I base this assumption on the fact that she uses this example while challenging the connection between sexual act and reproduction and the virtual womb in itself does not challenge this connection.

I argue, however, that the requirement to perform this caesura between sex and procreation might consequently reinforce the idea of a pre-defined separation between humans and animals that, as I argued in Chapter 1, MacCormack tries to challenge. In order to elaborate this argument, I will return to Agamben's notion of *the anthropological machine* and question how Miller's elaboration of Agamben's biopolitical theory might affect the ways in which it is possible to understand the functions of *the anthropological machine*.

[67] The idea that women's role in society could be more equal if women would not have to bear children has been suggested before. See for example Shulamith Firestone, *The Dialectic of Sex: The Case for Feminist Revolution* (New York: Quill, 1993).

2.3 The sovereign's decision and the man/woman/human/animal conceptualization

The difference between Agamben's notion of the camp and Miller's notion of the womb as a space of exception raises a fundamental question of the limits of the sovereign's decision. Seeing the camp as paradigm highlights how the sovereign can revalue existing bodies but the womb as a paradigm highlights that, by controlling existing bodies, the sovereign can valuate life which has not born yet. However, when it comes to human/animal relation is it possible to see the womb as central space which defines humans? As I stated in Chapter 1, Agamben's notion of the anthropological machine suggests that, instead of the womb, humans and animals are defined via language – something one has to learn. Thus, when it comes to defining humanity, the fetus itself does not seem to be enough. However, one important implication of Miller's argument is that the womb does not present the space inhabited by citizens but *potential* citizens. Controlling who has access to the womb, and future life, seems to be a central question in the biopolitical state. Simultaneously, the womb represents a continuation of the human species, or at least potentiality that life which has begun in the human womb can later develop to meet the standards of humanity. Although in Miller's analysis of the biopolitical state the womb represents the space of exception where sovereign power can set the limits of valuable life, in relation to *the anthropological machine* the womb seems to represent a space which is out of the reach of the sovereign's decision. In other words, the distinction created by reproduction seems to be an underlying assumption of *the anthropological machine*. This logic can also be seen in one part of Heymann Steinthal, German philosopher, writings' from 1881:

> But why the human soul alone builds this bridge, why man alone and not the animal progresses through language from animality to humanity - - this comparison shows us that man, as we must imagine him, that is, without language, is indeed an animal-man [Tier-Mensch] and not a human animal [Menschentier], and *is always already a species of man and not a species of animal.*[68]

[68] Heymann Steinthal, *Abriss der Sprachwissenschaft, I: Einleitung in die Psychologie und Sprachwissenschaft* (Berlin: Dümmler, 1881), 355-56 cited in Agamben, *The Open*, 36. My italicization.

Language, for Steinthal, is something that can be obtained only by those born within the human species. It seems, consequently, that language has an explicit task to not only create a distinction between humans and animals but to maintain the idea of a binary division: through language it is possible to differentiate humans from *all* the animals while the separation based on reproduction would maintain humans as a distinct group without the possibility to value human abilities above others. However, what Steinthal seems to underline is that only the human species has the potential to learn a language and, in this way humans are essentially different from animals. Agamben presented a similar argument by stating, through his reading of Heidegger, that humans have the ability to understand their surroundings through categorization while animals are "captivated" by their instincts.[69] Thus, I maintain that in order to challenge the notion of humans as fundamentally different from animals, as I assume that MacCormack wishes to do via her account of queer posthumanism, it is necessary to understand the notion of the *potential life of humans*, not as pre-existing of the sovereign's decision but as embedded in the functions of the anthropological machine. Hence, I would like to suggest an alternative reading of the assumed priority of the human/animal distinction which would, I suggest, also support MacCormack's vision of the possibilities of the human-animal relations.

When, following Miller's argument, the womb is seen as the paradigmatic biopolitical space where the sovereign can posit their decision over life, the decision is made between those whose life is considered meaningful and those whose is not. After this decision is made and law is put in place to protect potentially valuable lives, what still connects these potential lives is that they would all be human. What if, instead of seeing the sovereign's decision as limited to human subjects, the sovereign decision would choose to decide between the humans? In other words, what if the limits between species would not be only based on the boundaries set by reproduction but on the sovereign's decision of who can potentially have rights in a biopolitical state? Seeing it

[69] See Chapter 1.

in this light, the human-animal connection would be essentially intertwined with the man/woman distinction because the reproduction of the potential citizens would not only affect on the man/woman but, also, on the human/animal binary. This is not to say that there would not be material limitations set by reproduction; it is to say rather that the ways in which the human/animal distinction is emphasized is tightly connected to the concept of meaningful life, which is related to the notion of the potentiality of life. Thus, while Miller argues that the sovereign's decision as to what constitutes meaningful life affects the man/woman relation in the biopolitical state, I suggest that this decision also entails a vision of the potentiality of life, which affects the human/animal distinction. At least for now, in many biopolitical states the life of the citizen can be equated with that of humans; and thus what becomes the threshold of the meaningful life is the potential life of the human. Thus, I maintain that MacCormack's vision of the need to alter the man/woman relation might simultaneously reinforce the human/animal binary because in order to substitute the need for the human womb, artificial life needs to correspond with the meaningful life of the citizen.

MacCormack's examples, as I analyze them, attempt to transform the link between the womb, the fetus and the female body in order to enable hybrid subjectivity. However, I argue that by trying to refigure these connections, there is a danger that MacCormack simultaneously reinforces the human/animal division. When the womb is seen as a space that produces potential new citizens, it is not enough to invent alternative ways to manufacture life in order to transform the relation between sexed bodies, but in order to replace the human womb the new reproductive technologies have to be able to produce human life. In brief, I argue that in the process of creating life that could replace the need to use the human womb as a container for the fetus, attempts to create meaningful life would also be based on the notion of a potential life of human. Thus, rather than supporting MacCormack's vision of a *politics of becoming*, there is a possibility that the attempts to alter the material limitations of reproduction so as to challenge the man/woman binary might simultaneously reinforce the idea that humans are fundamentally

different than *all* animals. Hence, I argue that if the need to alter the connection between reproduction and acts of sex is seen as a requirement for queer posthumanist subjectivity, there is a risk that the connection between female body and the womb becomes *the wounded attachment* of queer posthumanism.

2.4 Creating "wounded attachments"?

Although Wendy Brown analyses in her article "Wounded Attachments" (1993) 1990's identity politics in the US, her concept of the *wounded attachments* are potentially relevant for analyzing MacCormack's political proposals. The term could help to explain how MacCormack's requirement to separate the sexual act from reproduction in order to maintain hybrid subjectivity might, by emphasizing the historical connection between men and women, limit the ways in which she sees the possibilities to challenge categorized subjectivity.

Brown argues that a politicized identity does not only form according to political discourse but it is also shaped by its own *wounded attachments*; these wounded attachments are formed when an identity group juxtaposes its identity with the unmarked norm of white, heterosexual and middle-class men. Brown explains this term through an analysis of the liberal political frame, which assumes the equal changes for everyone to, for example, attain social equality. This assumption creates a possibility of vulnerability for the subjects because, for example sexual minority groups, might not be able to enact these "equal changes" in reality. Brown states that one reason for this imbalance between identity groups is the worth given to history. Identity groups, which have not had political recognition in the past, challenge the coherence of the historical narrative when demanding status of an identity group. However, Brown argues that the questioning of the historical narrative simultaneously constructs the foundations of the identity group by posing it as something which has lacked a voice in the past. Thus the pain of not fitting into the historical narrative or not having equal political status could be seen as a constitutive part

of these kinds of politicized identity groups – their wounded attachments.[70] I argue that MacCormack's vision of the connection between sex and procreation, or the womb and female body, could be seen as a wounded attachment of MacCormack's vision of women as MacCormack explains the need for separation sex from reproduction via historical effects of this connection. I do not wish to argue for a "women's identity group" with this statement but rather to point out how MacCormack's demand for the separation of sex and reproduction is connected with her comments of, for example, that science has defined female sexuality via reproduction. Thus, her vision of possible renegotiations of the man/woman relation is tightly connected with the historicity of women's political status, described for example by Luce Irigaray. This, I argue, might have an effect on MacCormack's vision of what constitute as possible obstacles to a *politics of becoming* because MacCormack seems to want to liberate women from their past.

By seeing science as a field that can potentially change the politicized link between sex and reproduction and thus alter the relation between male and female citizens, there is a possible downside that MacCormack's examples simultaneously create an assumption that in order to maintain a politics of becoming, women's bodies need to be separated from their reproductive functions. As Brown argues, political groups that have been excluded from the political sphere concentrate on future possibilities for changing their status in society. However, they usually form the idea of the future according to their historical subordination and according to their present, still unacceptable, status. Thus she argues, "this past cannot be redeemed *unless* the identity ceases to be invested in it, and it cannot cease to be invested in it without giving up its identity as such."[71] Although MacCormack's vision of queer posthumanism celebrates rather than fears the loss of identity as such, she seems to maintain that tackling with the past creates a possibility to alter the present relations between men and women. However, according to Brown's logic, this may in fact be a contradiction in so far as by emphasizing the past, MacCormack concurrently reinforces the meaning imposed on reproduction. Thus, MacCormack

[70] Wendy Brown, "Wounded Attachments," *Political Theory* 21, no. 3 (1993): 391, 400-406.
[71] Ibid., 405-406.

creates an assumption that a possibility to attain a *politics of becoming* is tied to the changes in the bodies rather than to attempts to renegotiate the meanings given to the bodies. I argue that this contradiction might also support the human/animal binary because the investment in the historicity of the connection between the sexual act and reproduction does not only affect the relation between sexed bodies but also, as I have argued, defines what constitutes a meaningful life and, thus creates a vision of the life that can potentially obtain these requirements.

2.5 Conclusion

In this chapter, I have argued that MacCormack's emphasis on the need to alter the material base of the connection between sex and procreation could be seen as a *wounded attachment* of queer posthumanism; as it highlights how, in history and in present, women have been and continue to be defined via their wombs' connection to reproduction. Though I do not wish to argue that MacCormack's criticism towards the ways in which women's bodies affect their political status would be misplaced, I find her emphasis on the need to disconnect women's bodies from reproduction problematic. Firstly, Rather than questioning the centrality that reproduction has in the biopolitical state, MacCormack reinforces its ability to define subjectivity while demanding a material separation from it. Secondly, reproduction does not merely form the man/woman binary but in addition it affects the human/animal distinction through the sovereign's decision on what constitutes a meaningful life. Thus, in order for the new reproductive technologies to challenge the connection between the human womb and the child, science would need to be able to produce viable *human* life. Hence, rather than calling into question how the human/animal separation is artificial, the requirement to disconnect sex from reproduction can reinforce this dichotomy by trying to match artificially created life with the concept of human – seen fundamentally different from *all* animals. Thus, I argue that MacCormack's analysis of the ways in which the transformation of *zoē* can alter *bios* misses, in

this case, the ways in which *bios* also affects *zoē*. In other words, MacCormack seems to assume that by merely creating life in Petri dishes, it would be possible to alter the connection between sex and reproduction. However as I have argued in this chapter, the attempt to transform the political meaning of reproduction needs to take into reconsideration the functions that reproduction has in the biopolitical state. And because the function of reproduction in the biopolitical state is not merely to produce meaningful citizens but also to maintain the idea that difference between humans and animals is not a part of the sovereign's decision but the underlying assumption of the anthropological machine, the attempt to alter only the way in which reproduction affects the man/woman binary does not tackle the ways in which it forms the human/animal distinction.

However, I still wish to highlight that the changes in *zoē* can alter the meanings given to *bios* and vice versa. This generative power of matter is the guideline of the next chapter, which examines scientific practices. I argue that although MacCormack criticizes science as supporting the naturalization of categories, scientific practices can, especially when focusing on the molecular level, support a politics of becoming.

Chapter 3: Science and Matter as Dynamic

3.1 Introduction

Seeing matter as dynamic is a fundamental part of MacCormack's vision of queer posthumanism because it challenges the notion of human as stable and unchangeable category. Her vision of queer posthumanism brings forth a notion of matter which is influenced by discourse but which takes into account the generative power of matter itself and, thus, MacCormack's conceptualization of matter slightly differs from Judith Butler's vision of performativity. In the *Bodies that Matter* (1993), Butler states that the category of "sex" functions as a norm and, then, is also a "part of regulatory practice which produces the bodies it governs"[72]. In this practice "sex" is materialized through gender performativity. Hence, "sex" does not exist prior to discursive practices but is produced through them and, thus, Butler argues, the conceptualization of matter is always already a discursive formation.[73] MacCormack does not deny the power that discourse has in setting the limits of materiality, for example via man/woman binary, but, by referring to scholars such as Braidotti and Grosz, who are considered as representatives of corporeal feminism, and Haraway, who has been a strong influence on feminist science studies, she demands that matter actively takes part in its own materialization.

The fluid notion of matter affects her reading of the possibilities for the disentangling of sexual act and reproduction. She states, "the human is able to create their own subjectivity at an organic and physiological level which goes deeper than subjectivity as performativity."[74]As I have argued in Chapter 2, MacCormack's notion of queer posthumanism requires not only conceptual separation of sex and procreation, but also a possibility to replace the link between the human

[72] Judith Butler, *Bodies That Matter: On the Discursive Limits of "sex"* (New York: Routledge, 1993), 1.
[73] Ibid., 2-3.
[74] Patricia MacCormack, "Queer Posthumanism: Cyborgs, Animals, Monsters, Perverts," in *The Ashgate Research Companion to Queer Theory*, ed. Noreen Giffney and Michael O'Rourke (Farnham and Burlington: Ashgate Publishing, 2009), 118.

womb and the child. MacCormack looks to science as offering the possibility to achieve this distinction, a position which indicates her belief in scientific progress. For this reason, I see her argument as comparable to Joseph Rouse's vision of scientific practices. Rouse argues that although the conceptualization of matter is tied to both *though experiments* (similar to MacCormack's notion of discourse) and *experimental systems* (which refers to scientific practices); Rouse writes that the *experimental systems* "sometimes play a pivotal role in making possible the conceptual articulation of a domain of phenomena in the first place."[75] What Rouse seems to be saying is that changing the limits of matter via scientific practices, then, enables images of possibilities that would still be grounded on the materiality of the world. I argue that similar reasoning can be detected in MacCormack's argument; scientific practices give the means for reformulating the material base of the connection between sexual act and reproduction. In addition, MacCormack seems to assume that only through the pushed limits of materiality one can plausibly challenge the man/woman relation. However, although MacCormack sees that scientific practices enable new ways to define the world, she still considers science to reinforce the idea of stable categories that do not transform, but progress according to particular stages.[76] In this chapter, I will question whether MacCormack's reading of science is the only possible way to see the relation between scientific practices and matter. By pointing out how science can either support or challenge the notion of the human as a distinct category via microscopic vision, I will suggests that some scientific practices produce an *in-between* space, or *liminal zone* as argued by Susan Squier,[77] which challenges the notion of matter as static. I will draw this conclusion by analyzing a research report, which describes how scientists were able to produce mice that had two genetic fathers. I will maintain that science can supports the *politics of becoming* because, as is the case with animal experiments, some scientific practices do not merely map the combinations of minute entities but, in addition, attempt to transform the function of organisms.

[75] Joseph Rouse, "Laboratory Fictions," in *Fiction in Science: Philosophical Essays on Modeling and Idealization*, ed. Mauricio Suárez (New York: Routledge, 2008), 40.
[76] MacCormack, "Queer Posthumanism: Cyborgs, Animals, Monsters, Perverts," 116.
[77] Susan Squier, *Liminal Lives: Imagining the Human at the Frontiers of Biomedicine* (Duke University Press, 2004).

Before diving into the analysis of the practices of science, I would like to point out that using the mice example as a way to argue for science's ability to support the politics of becoming might seem controversial because it is based on instrumental relationship between humans and animals – in which, animals are the ones who can get killed. Though MacCormack does not discuss animal experimentations in her article, she mentions the organ transplants from animals to humans as "an alternate, less celebratory definition of the posthuman"[78] because these procedures are based on positioning the animal as less worthy than human. I assume that her vision of animal experiments would contain similar analysis and, although I do not want to suggest that MacCormack's evaluation would not be grounded on the actual practices of animal testing, I would like to refer to Haraway's vision of the instrumental relationships in order to offer an another way to examine the human-animal bodily relations in the laboratory.

Haraway argues that caring, which acquires an intimate relation rather than calculative one, is possible also in the instrumental relation shared by humans and animals in the laboratory. This is possible only if both humans and animals are considered as both subjects and objects taking part in the experiments. She suggests that laboratory practices should be performed in a responsible manner, which means that instead of trying to find a way to justify why animals can be killed, scientists should understand that no amount of reasoning could ever fully explain killing. Haraway's reading of human-animal relation in science differs from that of MacCormack because, in Haraway's vision, the instrumental relationship does not inevitably mean that animals are rendered "killable". However, animal experiments can never be made in total "moral comfort" because in Haraway's view animal life can never be sacrificed easily although she highlights the need to have reasonable motives behind them.[79] I do not wish to argue that animal experimentations would be a trouble-free concept in terms of a politics of becoming and neither can I consider their potential implications fully in this thesis[80]. However, the point I wish to make

[78] MacCormack, "Queer Posthumanism: Cyborgs, Animals, Monsters, Perverts," 118.
[79] Donna Haraway, *When Species Meet* (Minneapolis: University of Minnesota Press, 2008), 74-76, 80-81, 85.
[80] Though, it could be an interesting question for the future research.

in this chapter is more connected with the notion of matter as dynamic and, in this aspect, I argue that animal experimentations offer a possibility for more nuanced analysis of the relation between scientific practices and matter.

3.2 Heterotopic microscope and the animal experiments as a window for dynamic matter

My assumption, on which I base my arguments in this subchapter, is that laboratories take part in the cultural imagery of the human/animal distinction. However, the image they support is not self-evident. I will explain this argument via Foucault's concept of heterotopia.

Heterotopias are real places which are outside of all the other places and are absolutely different from them. However, Foucault states that heterotopias are in relation with other spaces and represent, contest and invert them. He explicates this assertion using the image of a mirror. He states that the mirror could be considered a mediator between utopia and heterotopia because it creates an image of a space where the viewer is without being there in reality and at the same time the mirror connects the viewer to the real place into which they are gazing using the mirror. Thus the mirror produces a heterotopia because it creates the idea of the real place simultaneously with the unreal place.[81] I maintain that microscope could be compared with the mirror in Foucault's analysis because it produces a vision of life which is simultaneously real and unreal. For example, by using a microscope it is possible to observe human cells and constitute the picture of humans at the molecular level. Thus, humans are not only seen as living beings but also as living systems. The cells are connected to the human bodies in a very real sense, but like the reflection in the mirror, the combination of cells gain meaning as the actual human body only when humans recognize this combination to be their own representation. Hence, I argue that laboratories can be considered heterotopias because they represent a space that enables the

[81] "Michel Foucault, Of Other Spaces (1967), Heterotopias," http://foucault.info/documents/heteroTopia/foucault.heteroTopia.en.html.

microscopic connection between the image of the molecular level and the molar level of the bodies.[82]

Foucault states that heterotopias function in relation to other spaces and he divides their role between two extremities. He states that the heterotopias' role could be to "create a space of illusion that exposes every real space, all sites inside of which human life is partitioned, as still more illusory".[83] I argue that this role corresponds the functions of laboratories as pictured in the popular science books, like in Richard Dawkin's *Selfish Gene* and that are echoed in Agamben's and MacCormack's vision of the science, which produce a picture of human as "a copyrighted genome"[84]. By focusing on minute entities, scientific practices can blur the strict separation between categories; for example, Nikolas Rose has pointed out that when life is understood at the molecular level it challenges distinctions between human races because the difference between their genetic heritance is practically non-existent.[85] This comment could be seen applicable also to human/animal distinction because minute entities such as genes can be part of human and animal bodies alike. However, MacCormack maintains that this vision of humans does not guarantee that science would obscure the "spatial immobility of human" because scientific practices focus to observe predefined outlines of things. Thus, laboratories, additionally, can be seen to fulfill the second role of heterotopia, which is to produce "other, another real space, as perfect, as meticulous, as well arranged as ours is messy, ill constructed, and jumbled."[86] According to this role, laboratories support, rather than challenge, existing categories. The attempts to explain humans' difference from animals based on their genetics could be seen as an example of this function of laboratories. For example in the forewords of the book *What Makes Us Human?* (2007), Walter Bodmer explains that although humans and chimpanzees might share

[82] I use the terms molecular and molar as Nikolas Rose describes them. Molar level refers to the "visible, tangible body" which is imagined "at the scale of limbs, organs, tissues, flows of blood, hormones, and so forth." See: Nikolas Rose, *The Politics of Life Itself: Biomedicine, Power, and Subjectivity in the Twenty-First Century* (Princeton: Princeton University Press, 2007), 11.
[83] "Michel Foucault, Of Other Spaces (1967), Heterotopias."
[84] MacCormack, "Queer Posthumanism: Cyborgs, Animals, Monsters, Perverts," 116.
[85] Nikolas Rose, "Race in the Age of Genomic Medicine," in *The Politics of Life Itself. Biomedicine, Power, and Subjectivity in the Twenty-First Century* (Princeton: Princeton University Press, 2007), 155-186.
[86] Foucault (1967) 2010, 9.

as much as 99 percent similarities in their DNA sequence, the remaining 1 percent can explain, for example, the greater cognitive abilities of humans.[87] Thus, although observations at molecular level can enable new ways to imagine human/animal connection, it can be (and is) also used to explain antecedent distinctions, such as the separation between humans and animals based on reason and language. In short, the ability to observe the minute entities of bodies does not ensure the blurring of scientific taxonomical categories or the vision of matter as dynamic. However, I contend that animal experiments do not strictly follow either one of these roles but instead combine them because they are based on the similarity between humans and animals while still acknowledging their differences. Although animal tests are problematic in relation with a politics of becoming as they can be (and usually are) based on a hierarchical relation between humans and animals, I argue that via them it is possible to understand how matter is dynamic. Thus, I do not wish to argue that animal-based research in itself supports a politics of becoming, but they enable a possibility to see the connection between scientific practices and matter in more versatile manner than what MacCormack suggests. I will elaborate how animal testing support the vision of matter as active via a research report that describes experimentation done with mice.

On March 2011, *Biology of Reproduction*, the official journal of the Society for the Study of Reproduction[88], published a research report "Generation of viable male and female mice from two fathers"[89]. This report describes how scientists were able to combine the genetic material of two male mice in the progeny by manipulating the stem cells of a male mouse fetus, thus, producing XO cell line instead of XY. Then, XO cells were injected into the blastocyst of a

87 Walter Bodmer, "What Makes Us Human? - An Introduction," in *What Makes Us Human?*, ed. Charles Pasternak (Oxford: Oneworld Publications, 2007), ix-xi.

88 The Society for the Study of Reproduction is "an organization of people who share a common interest, e.g., reproductive biology, endocrinology, etc." In order to get a regular membership one has to be nominated by regular member of the society and have a doctorate or proof of scientific expertise. "Society for the Study of Reproduction (SSR)," http://www.ssr.org/. [Accessed 20 May 2011]

89 The research report was first published online in December 8 2010 and the distribution of the report was free. I will use the online publication as my source because the official journal is open only for Society's members and subscribers. For the official publication see J. M. Deng et al., "Generation of Viable Male and Female Mice from Two Fathers," *Biology of Reproduction* 84, no. 3 (March 1, 2011): 613-618.

female mouse and this combination XO/XX was transplanted into a female mouse, thus, producing female chimera descendants. These female chimeras were then mated with a non-manipulated male mouse and some of the succeeding progeny, thus, had genetic substance from two male mice. On the last part of the report, the scientists remark that similar procedure might be possible to perform with humans in the future.[90] This argument indicates that through animal-based research it is possible to better understand the limits of the human body and, then, control and manipulate it. This promise is founded on the genetic similarities between humans and mice. As Karen Rader points out, mice are chosen for medical laboratory experiments not only because they are easy to handle and they procreate fast and often but also because they "are mammals with a 99 percent genetic homology to humans, and they happen to get many of the same diseases as us".[91] Although the mice example does not describe medical testing on animals, it shares a similar base: while new medicines are first tested on animals because their bodies usually react in a similar way to human bodies, the case of the male-to-male mice reproduction suggests that because scientists were able to carry out certain procedures with mice they might be capable to do the same with humans. This assumption gives the impression, similar to Dawkin's *Selfish Gene*, that science focuses mainly on minute entities and thus blurs the definite limit between humans and animals. However, the research report maintains that exactly similar procedures cannot be made with humans since the first stage of the operation would cause infertility in humans and, hence, it would be impossible to produce a female offspring whose genetic material would contain a manipulated stem cell from the father.[92]

Instead of seeing this limitation as a reassurance that science reinforces the differences between humans and animals, I argue that the co-existence of presumed similarity and difference between humans and animals presented in this report, construct an image of matter which does

[90] "Generation of Viable Male and Female Mice from Two Fathers", 7, http://www.biolreprod.org/content/early/2010/12/07/biolreprod.110.088831.full.pdf+html. My italicization.
[91] Karen Rader, *Making Mice: Standardizing Animals for American Biomedical Research, 1900-1955*, 1st ed. (Princeton University Press, 2004), 11.
[92] "Generation of Viable Male and Female Mice from Two Fathers", 6-7, http://www.biolreprod.org/content/early/2010/12/07/biolreprod.110.088831.full.pdf+html.

not adjust to the existing boundaries of the human/animal dichotomy. Although the fact that manipulated stem cells would not function in the human body as they do in the mouse body supports the vision of human bodies as different from mouse bodies, it simultaneously emphasizes that minute entities, many which are fundamentally the same in mice and in human bodies, *do not exist on their own but in relation with their surroundings*. That is to say, humans and mice might share similar cells but the combination of these cells differs and, thus, manipulation of the cells does not lead to the same outcome. Hence, rather than seeing organisms as puzzles, which contain a certain amount of separate minute entities, scientific practices that aim to change the functions of organisms have to take into account that minute entities do not produce particular effects on their own, but in relational connection with each other. Thus, at least when it comes to animal experimentations, scientific practices support a notion of minute entities that are in *intra-action* with each other.

Intra-action is Karen Barad's term and part of her theory of an *agential realist ontology*. This ontology is based on relations rather than essences because its primary epistemological unit is phenomena. Thus, things do not exist by themselves but they gain meaning in relation to the other components in phenomena. In agential realist ontology, meaning is produced through intra-actions which means that different components of phenomena can be seen as separate only via the process which Barad calls 'agential cut'. This separation is always produced within phenomena and thus definitions are never stable because their boundaries are drawn in relation to other components in various phenomena.[93] Animal testing can be read through Barad's vision of phenomena, because it functions on the principle of the similarity between humans and animals but, in addition, acknowledge differences between them. In other words, because for example some genes are seen to be particularly the same in the human and animal bodies alike, as argued by Paul Rabinow,[94] the fact that they do not necessarily produce similar effects in the

[93] Karen Barad, "Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter.," *Signs: Journal of Womenulture & Society* 28, no. 3 (2003): 814-817.
[94] Paul Rabinow, *Essays on the Anthropology of Reason* (Princeton University Press, 1996), 98.

human body as the would in the animal body supports the idea that scientific practices have to take into reconsideration how genes function in relation with their surroundings in order to alter the ways in which the organism functions. Therefore, experiments done with animals neither support nor entirely contest the human/animal dichotomy but create a vision of practices which function *in-between* this assumed separation. Thus, I maintain that animal experiments challenge the vision of scientific practices as only reinforcing the conceptualization of matter as fixed because seeing organisms as a phenomenon instead of a collage of static units, animal testing produce a vision of matter as dynamic and, then, capable to transform – either spontaneously or through manipulation. As MacCormack points out, altering organisms can disrupt the base of the man/woman binary since science pushes the limits of reproduction; but, I suggests that science can, in addition, challenge the assumed underlining principle of the anthropological machine that the boundaries between the species would be out of the reach of the sovereign's decision.

3.3 Liminality and challenging the foundation of the human/animal binary

MacCormack approaches the human-animal connection mainly through the notion of *becoming-animal* which is based on the idea that instead of knowing *the* animal based on a ready-made descriptions humans can try to know *a* animal via meetings, which would be based on surprise rather than reaffirmation. Thus, the politics of becoming challenges the human/animal binary by not accepting it as a guideline with which one should understand and observe the world.

Science can help to achieve this state of becoming by questioning the "natural limits" of taxonomic categories. MacCormack, for example, refers to Haraway's concept of the cyborg to point out how the division of the organic and inorganic is called into question by connecting human body with machine or animal body parts.[95] Cyborg, hence, blurs the division between

[95] MacCormack, "Queer Posthumanism: Cyborgs, Animals, Monsters, Perverts," 118.

humans and animals as a living image of interrelated connections. However, the mice case does not merely construct a vision of co-existence of humans and animals but also a vision where their biology comes to be fused to an imagery of potentiality. While the concept of the cyborg could be compared to the creation of Frankenstein's monster – sew together from the pieces of different bodies – the mice example offers a differing vision of the potential connections between human and animal bodies, a combination whose components have never been born before.

Sarah Franklin argues that biomedical practices form novel imageries of the potentiality to modify biology. Rather than just offering, for example, change to move embryo from one body to another, modern biomedical practices can manipulate life through "stem cell derivation and redirection." Hence, Franklin develops a term *transbiology* to describe a "biology that is not only born and bred, or born and made, but *made and born*."[96] The mice case would be a good example of transbiological practices whose ambition is to alter, or *make*, life before it is born. However, the mice example links the notion of transbiology, additionally, to the connection between humans and animals in a way that obscures the distinction between them. By stating that two human males might in the future manufacture their own genetic children if "it [is] possible to generate human oocytes from iPS cells in vitro or *human-animal chimeras*"[97], the mice case does not merely suggest the possibility to alter life-not-born-yet but, in that process, to break down biological barriers between humans and animals through the image of human-animal chimeras. Thus, the mice example points out the potentiality of scientific practices to create what Susan Squier calls *liminal lives*.

Biomedicine, according to Squier, has questioned the limits of human life by producing life that contests the earlier limitations set by biology. For example, she states that the option to adopt embryos, which have remained from fertility treatments and are preserved by freezing

[96] Sarah Franklin, "The Cyborg Embryo," *Theory, Culture & Society* 23, no. 7-8 (December 1, 2006): 171.
[97] "Generation of Viable Male and Female Mice from Two Fathers," 7. My italicization.

them, call into question the image of particular temporal progress of human life.[98] Thus, scientific practices, while creating liminal lives, challenge MacCormack's representation of science as a set of practices which support the notion of human life that would proceed according to certain stages. Squier's notion of the laboratory as liminal zone is based on anthropologist Victor Turner's concept of liminality, which refers to "betwixt-and-between the normal, day-to-day cultural and social states and processes of getting and spending, preserving law and order, and registering social status."[99] This preservation of order is maintained via passages that represent changes in life, such as marriages, births and graduations, and these stages form "a space of 'potency and potentiality', 'experiment and play,' the liminal zone escapes the fixity and regulation of clock time into a realm between what is and what may be."[100] Therefore, in Squier's analysis, the laboratory represents "a pure human possibility"[101] because it can produce life that embodies this liminal zone. In addition, Squier point out that science has made it possible to challenge the limits of species, which have been defined through the organisms capacity to produce fertile offspring, by enabling the image of interspecies reproduction. Squier describes interspecies reproduction mainly via literature references and examples of the debate caused by "trans-species fertilization" in Britain in the 1980's. This debate was centered on the idea that it might be possible to use primates as surrogate mothers for human embryos.[102] The mice example differs from Squier's since Squier describes the option of having a chimpanzee as a surrogate mother for human fetus while the mice example points out a possibility to alter human cell by using substance from animals. Both the mice case and Squier's examples share the idea of science transforming the limits of human/animal separation. Nevertheless, the mice experiment brings this forth in a way which emphasizes the possibility to transform matter rather than just to move it from one body to another in so far as the case involving mice, the aim for human-animal

[98] Squier, *Liminal Lives*, 2-3.
[99] Victor Turner cited in Ibid., 3.
[100] Victor Turner cited in Ibid., 4.
[101] Ibid.
[102] Ibid., 92-95.

chimera is not to maintain human life but to change human organism via external (animal) substance. Thus, in this respect, the mice example is incompatible also with the life created in the petri dishes or maintained via virtual wombs, as suggested by MacCormack, as they do not challenge the boundaries of the species. Thus, the mice case, while pushing the possibilities to image human reproduction, simultaneously emphasizes how the boundaries of the species are a part of the sovereign's decision. However, now this decision is not only more visible but the decision can also transform the boundaries between humans and animals. As Franklin points out, "we can no longer assume that the biological 'itself' will impose limits on human ambitions. As a result, humans must accept much greater responsibility toward the realm of the biological"[103]. The sovereign cannot hide its decision under the anthropological machine any longer.

3.4 Conclusion

In this chapter, I have argued that the mice example constructs a notion of matter as dynamic and, thus, contests MacCormack's vision that scientific practices would necessarily reinforce the idea of matter as static and transforming only according to certain stages. In addition, I have maintained that the dynamicity of matter is an essential part of reformulating the limits of life in the mice case. Therefore, the mice experiment also emphasizes science's ability to modify the connection between sexual act and reproduction. Hence, the mice case shows not only that scientific practices can produce an image of matter as active but also that the sovereign's decision over the human/animal separation is more visible because it now has ability to transform the limits of this dichotomy.

[103] Franklin as cited in Rose, *The Politics of Life Itself*, 16.

Conclusion

In this thesis I have engaged with MacCormack's article as a starting point to picture a world that would not be tied to the logic of the biopolitical state and its side-effect: the anthropological machine. By questioning how her vision of the possibilities to achieve a politics of becoming is influenced by *the wounded attachments* of the man/woman binary, I have considered the potential "shortcomings" in her aim to combine queer and posthumanist theories. Like I stressed in the introduction, I did this not to nitpick her work but because MacCormack's article offers a fruitful base on considering how the man/woman and the human/animal dichotomies are intertwined in the biopolitical state. Problematizing her view that reproduction cannot map the sexual act if one wishes to maintain hybrid subjectivity, offered a possibility to question how not only the man/woman but also the human/animal binaries in the biopolitical state are formed in relation to reproduction, namely the link between the womb and the child. In addition, I have argued that the foundations of the species are not fully out of the reach of the sovereign's decision because by deciding what constitutes as meaningful life, the sovereign's decision also supports a vision that humans are different form *all* the animals. I argued that if the need to replace the connection between the human womb and the child via science is seen as a requirement in order to obtain a politics of becoming, there is a danger that queer posthumanism supports, rather than challenges, the naturalization of the human/animal binary. Thus, I argued that in addition to examining how the new reproductive technologies might affect the relation between sexed bodies, queer posthumanism should question how reproduction influences the reiteration of both the man/woman and the human/animal dichotomies.

By examining how animal-based research contests MacCormack's vision of the scientific practices as only reinforcing the notion of matter as a static entity, I maintained that science has the ability to support a *politics of becoming,* particularly as it focuses on the molecular level of the bodies. When life is pictured at the molecular level, the boundaries of different categories such as species and gender are blurred and capable of transforming. I argued that animal-based research

supports the notion of matter as dynamic especially well since it plays between the categories of the human and the animal and can even challenge the biological boundary between species when DNA of different species are combined in the laboratory. Because the scientific practices can now produce interspecies-reproduction, they also highlight that the sovereign's decision takes part in the formation of the human/animal binary. However, via biomedicine and technology the sovereign has the ability not only to reinforce the human/animal dichotomy but also to decide whether scientists have the right the blur the "natural" boundary of this separation. Thus, rather than the new reproductive technologies, the scientific practices could support the new conceptualizations of difference, thus challenging the limits of political categories, via the microscopic vision of matter and the possibility to alter the limits of life.

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A question which has remained unvoiced in this thesis, though it plays a central role in every chapter, is why would it be important to pursue a *politics of becoming* and, moreover, what does it actually mean to pursue a *politics of becoming*? This question becomes central especially in relation to my last argument that scientific practices, which challenge the "natural" boundary between the species, could support a politics of becoming. With this statement, I do not wish to claim that humans should just let go of their assumed specialty and indulge in picturing the world without the set categories. Frankly, I see little potentiality for humans to obtain hybrid subjectivities that would not be tied to the influence of categories. In addition, I do not embrace the possibility that science could produce human-animal chimeras; one needs to see the movie *Splice* (2009) only once in order to imagine possible ways in which the attempts to create human-animal chimeras could go wrong and might not even, in the end, challenge the understanding about the category of the human. In short, my argument regarding the possibilities for the scientific practices to support a politics of becoming is not tied to the idea that science can offer the tools to get rid of

the material base of the human/animal dichotomy. Rather, returning to Joseph Rouse's argument, I see that by challenging these material limits, science offers a way to *imagine* a world differently. In other words, what I consider, for example, as the most important aspect of MacCormack's notion of queer posthumanism is its potentiality to intrigue the imagination by examining how different categories are inter – or rather intra – twined. In other words, it is a theoretical approach that can challenge "trivial" knowledge and, thus, alter the ways in which differences are conceptualized. However, it might be problematic to see a politics of becoming as an aim for queer posthumanism because politics require a strategy for obtaining certain results. A strategy might not seem as a part of a politics of becoming because, as MacCormack describes it,[104] it is not striving to maintain a particular political system but, on the contrary, trying to formulate a vision of the world where subjectivities would not be tied to certain categories, and ethics would be based on the understanding about fluid differences. However, one of my aims in this thesis was to show how MacCormack's vision of the need to separate the sexual act from reproduction is based on the idea that hybrid subjectivities cannot be form if the material base of the connection between sex and procreation, namely the relation between the womb and the child, is not challenged. Thus, this requirement can be seen as a strategy for obtaining a politics of becoming. However as I have argued in this thesis, this strategy is problematic because it fails to tackle the different functions that reproduction has in the biopolitical state. Thus, what I maintain as the most important aspect of queer posthumanism is its ability to point out how different categories are *intra*twined. However, I do not want to argue that it is unnecessary to try to formulate how it could be possible to obtain a politics of becoming. On the contrary, I believe that this vision supports the questions that challenge the assumed naturality of categories. What I, however, want to emphasize is that, at least for me, a politics of becoming is based on questions rather than answers. In this light, I argue, the scientific practices can support a politics of

[104] See: MacCormack, "Queer Posthumanism: Cyborgs, Animals, Monsters, Perverts," 122.

becoming in so far as they question not only the difference between humans and animals but also the role of the sovereign in the biopolitical state.

References

Agamben, Giorgio. *Homo Sacer: Sovereign Power and Bare Life*. Meridian : crossing aesthetics. Stanford, California: Stanford University Press, 1998.

———. *The Open: Man and Animal*. Stanford, California: Stanford University Press, 2004.

Barad, Karen. "Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter." *Signs: Journal of Women in Culture & Society* 28, no. 3 (2003): 801-831.

Bodmer, Walter. "What Makes Us Human? - An Introduction." In *What Makes Us Human?*, edited by Charles Pasternak. Oxford: Oneworld Publications, 2007.

Braidotti, Rosi. *Metamorphoses: Towards a Materialist Theory of Becoming*. Cambridge: Polity, 2002.

Brown, Wendy. "Wounded Attachments." *Political Theory* 21, no. 3 (1993): 390-410.

Butler, Judith. *Bodies That Matter: On the Discursive Limits of "sex"*. New York: Routledge, 1993.

Calarco, Matthew. *Zoographies: The Question of the Animal from Heidegger to Derrida*. New York: Columbia University Press, 2008.

Dawkins, Richard. *The Selfish Gene*. Oxford: Oxford University Press, 1989.

Deng, J. M., K. Satoh, H. Wang, H. Chang, Z. Zhang, M. D. Stewart, A. J. Cooney, and R. R. Behringer. "Generation of Viable Male and Female Mice from Two Fathers." *Biology of Reproduction* 84, no. 3 (March 1, 2011): 613-618.

Derrida, Jacques. *The Animal That Therefore I Am*. New York: Fordham University Press, 2008.

Firestone, Shulamith. *The Dialectic of Sex: The Case for Feminist Revolution*. New York: Quill, 1993.

Foucault, Michel. "Of Other Spaces (1967), Heterotopias." http://foucault.info/documents/heteroTopia/foucault.heteroTopia.en.html.

———. *Society Must Be Defended: Lectures at the College De France, 1975-76*. New York: Picador, 2003.

———. *The History of Sexuality*. New York: Vintage Books, 1988.

———. *The Order of Things: An Archeology of the Human Sciences*. New York: Vintage Books, 1973.

Franklin, Sarah. "The Cyborg Embryo." *Theory, Culture & Society* 23, no. 7-8 (December 1, 2006): 167 -187.

"Generation of Viable Male and Female Mice from Two Fathers." http://www.biolreprod.org/content/early/2010/12/07/biolreprod.110.088831.full.pdf+html.

Habermas, Jürgen. *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*. Cambridge (Mass.): MIT Press, 1993.

Halberstam, Judith. "Animating Revolt/Revolting Animation: Penguing Love, Doll Sex and the Spectacle of the Queer Nonhuman." In *Queering the Non/Human*, edited by Noreen Giffney and Myra J. Hird, 265-282. Aldershot, Hampshire, England: Ashgate, 2008.

Haraway, Donna. *When Species Meet*. Minneapolis: University of Minnesota Press, 2008.

Helmreich, Stefan. "Trees and seas of information: Alien kinship and the biopolitics of gene transfer in marine biology and biotechnology." *American Ethnologist* 30, no. 3 (2003): 340-358.

Hird, Myra J. "Animal Trans." In *Queering the Non/Human*, edited by Noreen Giffney and Myra J Hird, 227-248. Aldershot, Hampshire, England: Ashgate, 2008.

MacCormack, Patricia. "Queer Posthumanism: Cyborgs, Animals, Monsters, Perverts." In *The Ashgate Research Companion to Queer Theory*, edited by Noreen Giffney and Michael O'Rourke, 111-126. Farnham and Burlington: Ashgate Publishing, 2009.

Miller, Ruth. *The Limits of Bodily Integrity: Abortion, Adultery, and Rape Legislation in Comparative Perspective*. Law, justice, and power. Aldershot, Hampshire, England: Ashgate, 2007.

Newton, Michael. "Bodies Without Souls: The Case of Peter the Wild Boy." In *At the Borders of the Human: Beasts, Bodies and Natural Philosophy in the Early Modern Period*, edited by Erica Fudge et al., 196-214. New York: Palgrave, 2002.

Oikkonen, Venla. "Narrating descent popular science, evolutionary theory and gender politics." *Science as culture*. - 18, no. 1 (2009): 1-21.

Parisi, Luciana. *Abstract Sex: Philosophy, Biotechnology and the Mutations of Desire*. London, New York: Continuum, 2004.

———. "The Nanoengineering of Desire." In *Queering the Non/Human*, edited by Myra J. Hird and Noreen Giffney, 283-310. Aldershot, Hampshire, England: Ashgate, 2008.

Poovey, Mary. *A History of the Modern Fact: Problems of Knowledge in the Sciences of Wealth and Society*. Chicago: University of Chicago Press, 1998.

Rabinow, Paul. *Essays on the Anthropology of Reason*. Princeton University Press, 1996.

Rader, Karen. *Making Mice: Standardizing Animals for American Biomedical Research, 1900-1955*. Princeton University Press, 2004.

Roof, Judith. *The Poetics of DNA*. Minneapolis: University of Minnesota Press, 2007.

Rose, Nikolas. *The Politics of Life Itself: Biomedicine, Power, and Subjectivity in the Twenty-First Century*. Princeton: Princeton University Press, 2007.

Roughgarden, Joan. *Evolution's Rainbow: Diversity, Gender, and Sexuality in Nature and People, With a New Preface*. California: University of California Press, 2009.

Rouse, Joseph. "Laboratory Fictions." In *Fiction in Science: Philosophical Essays on Modeling and Idealization*, edited by Mauricio Suárez, 37-55. New York: Routledge, 2008.

Rowland, Robyn. *Living Laboratories: Women and Reproductive Technologies*. Bloomington: Indiana University Press, 1992.

Schiebinger, Londa. *Nature's Body: Gender in the Making of Science*. New Jersey: Rutgers University Press, 2006.

Small, Meredith F. "Prime Mates: The Useful Promiscuity of Bonobo Apes | Nerve.com", 1997. http://www.nerve.com/content/prime-mates-the-useful-promiscuity-of-bonobo-apes.

"Society for the Study of Reproduction (SSR)." http://www.ssr.org/.

Squier, Susan. *Liminal Lives: Imagining the Human at the Frontiers of Biomedicine*. Duke University Press, 2004.

Stone, Lawrence. *The Family, Sex and Marriage in England 1500-1800*. Abridged ed. London: Penguin Books, 1990.

Taylor, Charles. *Sources of the Self: The Making of the Modern Identity*. Cambridge: Cambridge University Press, 1992.

Wolfe, Cary. *What Is Posthumanism?* Minneapolis: University of Minnesota Press, 2010.