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Distorted natures

Shifting ideologies of nature in Swedish geography school textbooks 1866-2012

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Abstract
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Historically, nature has worked and functioned as a powerful idea. Therefore, this thesis provides a historical account of how ideologies of nature have been articulated and transformed in Swedish geography school textbooks (secondary and upper secondary level) from 1866 to 2012. It does so by contextualizing them and by synthetizing three bodies of scholarship: geographic curriculum theory, the production of nature thesis and (its relationship to) the ideology of nature, and a theory of ideology. Central to the analysis of the content of the textbooks is "the ideology of nature". This ideology presents a distorted view by positing the existence of a contradictory dualism. The external conception of nature views human society and nature as autonomous realms, and the universal conception of nature views humans as part of nature. Empirically, the thesis focuses and examines six themes which are not only historically rooted, but constitute the most fertile grounds for understanding the shifts and workings of ideology: 1866-1962, (i) environmental determinism and (ii) the idea of race; 1962-1994, (iii) the environmental crisis and system's ecology and (iv) neo-Malthusianism; 1994-2012, (v) climate change and (vi) sustainable development. The thesis argues that throughout the period of investigation, important ideologies of nature, such as ideas about determinism, human nature, balance, equilibrium and natural limits, have been (re)articulated in the textbooks and they have worked towards different effects. In relation to geographic curriculum theory, not only does the thesis show precisely how textbooks have rearticulated ideology, but as part of that, it revises the claim that the content of the curriculum has undergone little change. Thus, although inertia certainly is a characteristic feature, an analysis of ideology reveals that change is as constant as inertia. In turn, the analysis increases our understanding of "the ideology of nature" by showing how it changes form. In the end, the thesis argues that while critiquing ideologies of nature is essential, the key question is how nature is produced and to what ends; that is, there is a need to consider the production of alternative natures.

Keywords: nature, ideology, ideologies of nature, production of nature, geography school textbooks, geography education (geografididaktik), curriculum studies (didaktik)

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PART I

Introduction

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Chapter 1 – The nature of the curriculum

> Much as a tree in growth adds a new ring each year, the social concept of nature has accumulated innumerable layers of meaning in the course of history…[D]espite the common grounding in the experience of nature, the concept of nature is extremely complex and often contradictory. Nature is material and it is spiritual, it is given and made, pure and undefiled; nature is order and it is disorder, sublime and secular, dominated and victorious; it is a totality and a series of parts, woman and object, organism and machine. Nature is the gift of God and it is a product of its own evolution; it is a universal outside history and also the product of history, accidental and designed, wilderness and garden (Smith, 1990: 2)

> A major element in any radical school geography must be to provide a theoretical account of the relations between society and nature (Morgan, 2011: 214).

In 2017 "forest bath" became a new word in the Swedish language. By taking a "forest bath", people could "connect with nature and 'bathe' their senses in the forest". The guide in charge of the activity explained that:

> We now open the gate to the forest and leave civilization behind. We walk back to our home, our origins [ursprung] and let ourselves be invited. We are of nature and within us, there is memory. We now open a sensuous world and beneath us in the ground there are connections, the wood wide web [sic]. Come, let's go (Bendt, 2018).

Furthermore, the guide suggested:

> Actually we are suffering from a kind of nature deficit [naturbrist]…To live separate from nature can constitute a threat to health (Bendt, 2018).[1]

The activity of a "forest bath" articulates many fascinating ideas of nature (which, of course, is not to belittle that nature visits can have positive restorative effects on people's well-being). From these quotes, we learn that we have lost our connection with nature but can 'reconnect' with nature and that we have left our 'natural origin' but can come back to our origin and our home. As such, what we find here is a strict separation between forests (nature) and civilization (society), which is to say that humans occupy only society and

[1] All translations from Swedish in this thesis are by the author, unless otherwise stated.

nature is a realm outside society. Opening "the gate to the forest" even proposes that nature exists in a bounded and delimited space. Simultaneously, since it is possible to leave our unnatural sphere and go back to our natural home, and since "We are of nature" but in some ways have been disconnected from nature, we are part of nature in two senses; on the one hand, we can leave civilization and immerse ourselves within nature and find our true origin (even though it is only for a limited time) and on the other hand, we are a product of nature.

In 2018, the Swedish newspaper Expressen (Syrén, 2018) reported about the opening of "an elderly home for the rich" (the rent is between 1700-1900 euros per month) developed by the company Silver Line and its owners Leif Östling (former CEO for the Confederations of Swedish Enterprise), Peje Emilsson (founder of Kunskapsskolan) and Thord Wilkne (IT billionaire). The reporter asked Östling about his view regarding the people who cannot afford to live at this home: "…This will be a segregated home. We allow a society that is pretty segregated if we look at different residential areas". Since society already is segregated, there is nothing Östling can do about segregation. But Östling went even further by establishing the fact that society is not equal by nature:

> I used to say that nature is not equal either. We have different genetic preconditions which nature has equipped us with. So this entire concept is a theoretical concept – it is against Darwin and Darwin's theories. It is not just a social question. It lies inherently in our biology (Syrén, 2018).

The argument Östling advanced was simply that nature is not equal, and that humans are also part of that unequal nature. Since nature is unequal, and since we are part of nature, social inequality is a natural inevitability. Obviously, within this context such an understanding of nature serves certain interests. By proposing that humans have "different genetic preconditions" that "lie inherently in our biology" and by making a reference to Darwin, Östling deploys specific ideas of (human) nature and transfers these to explain social conditions. These, in turn, makes social inequality 'natural'. Another way of phrasing this would be to say that Östling here legitimizes social inequality by appealing to objective natural conditions. If inequality, segregation, poverty, etc. is natural – why bother to do anything about it? By extension, isn't social equality then against nature?

Albeit in quite different ways in contemporary Sweden, these two examples serve to demonstrate how there are powerful ideologies of nature at work that have shaped and continue to shape how we think and act; they thus have social importance. This thesis is about such ideologies, but specifically how they

have been developed and articulated historically in geography school textbooks.[2]

To speak of ideologies of nature, or to even suggest that nature is somehow remotely connected to ideology, may sound ludicrous given that the commonsensical experience and understanding of nature tells us that it is perhaps the antithesis to ideology. Nonetheless, the point is that nature – whether we are talking about the climate, soils, organisms, ecosystems, or perhaps the question of a human nature – often *appears* and is *conceived* as an unproblematic, pure and given thing, by which its very matter and meaning often is taken-for-granted. To further illustrate the point of the confluence of nature and ideology, we can turn to one contemporary geography school textbook. In this textbook, the relationship between economy and climate zones is discussed:

> A comparison between income and climate zone shows that countries with high incomes per person almost exclusively are located in C- and D-climate (temperate humid climate). In the tropical Latin America, Africa, south Asia and half of China one will find the lowest levels of GDP (Wiklund, 2012: 288).

Expressed here are ideas related to the theory of environmental determinism. I say 'related' because it is not phrased in a deterministic fashion. This contemporary form of environmental determinism becomes powerful just because climate is juxtaposed by economy in a correlating relationship, that is, whether or not a country is rich or poor depends on the climate. But, the textbook also underlines that:

> The reasons for the accordance between climate and income are both historical, ecological, economic and social. European colonization has probably contributed to an economically disadvantaged situation in many tropical countries, but it cannot function as the single explanation for economic divergence (Wiklund, 2012: 288).

While still positing that there is an "accordance between climate and income", this is a result of other factors such as history and economy. In many ways, given the structure of the explanation – the belief of an autonomous nature determining income, albeit mediated by other factors – nature seems to be attached with explanatory value.

Although addressing the present status of ideologies of nature in textbooks surely is an important question, this thesis turns ideologies of nature into a *historical* question. As Smith indicated in the introductory passage above, the

[2] The concept of articulation and ideology will be discussed in more length later on. Nonetheless, I can briefly emphasize that articulation is connected to and implies a concern with (ideological) representations of nature, and for now it will suffice to say that I take ideology to mean a set of ideas, conceptions, and beliefs of nature that are rooted in and developed under specific historical conditions (Smith, 1990).

social concept of nature has in the course of history taken many contradictory meanings. And what Smith also at least implicitly demonstrates is, in the words of Williams (1980: 67), "that the idea of nature contains, though often unnoticed, an extraordinary amount of human history". Environmental determinism (and, in turn, forms of environmental determinism), which as will be demonstrated further on, certainly has a history given that it has evolved both in a particular historical era, and across eras. In turn, to grasp the present status of ideologies of nature one must turn to their historical foundation and development. Historicizing and situating ideology in such a way is crucial since "in order for us to understand why we think the way we do *now*…it is essential to understand the historical and social foundations of our thought" (Mitchell, 2000: 16; original emphasis). Therefore, by studying the historical record we can understand not only the many meanings of nature, and thus "human history", but as part of that, the continuities and changes of ideology, and the workings and functions of ideology at specific historical moments.

Regarding research about textbooks and nature, Hultén (2008) has developed an understanding of the historical forms' nature has taken. Hultén examined "nature's canon" – normative discourses about nature – in the natural science subject for the Swedish compulsory school between 1842-2007, by which he sought to contribute to our "understanding of which ideologies have dominated science texts…and how these ideologies have been shaped by social, pedagogical and cultural currents in society" (2008: 266). Throughout history, six "nature canons" have been present in the science curriculum: God's canon (1842-1900), the canon of the physical environment (1900-1919), the canon of the national landscape (1919-1936), the canon of the citizen (1936-1962), the canon of science (1962-1980) and the canon of the bricoleur (1980-2007). This leads Hultén to argue, for example, that we need to think about the curriculum as historically changing given that it is shaped by societal, cultural, pedagogical and political currents and conditions, but at the same time, that is also possesses a great deal of inertia.

In a similar fashion as Hultén – i.e., unravelling the historical forms' nature has taken – yet, more specifically intended as a critique of ideologies of nature, this thesis will narrate the story of the historical development of ideologies of nature as they have been articulated and transformed in Swedish geography school textbooks for secondary and upper secondary level from 1866-2012 and why this matters.[3] As such, it pays attention to the historical logic of ideology (its origin, evolution, how it becomes stabilized and changed), the workings and function of ideology (how ideology operates and has been articulated for different reasons and with different effects), the epistemological status of ideology, and how ideology has shaped school geography textbooks (and vice versa). It does so by intertwining and setting three bodies of scholarship into

[3] While we will return to this in chapter 2, I can already here mention that the focus is primarily on textbooks for upper secondary level.

conversation with each other: first, scholarship about 'ideology', secondly, '(social) nature', and thirdly, 'geographic curriculum theory'.

If ideologies of nature have been articulated in textbooks, it would suggest that that they do not contain neutral knowledge and universal facts. Although this is widely recognized today, it is worthwhile – as textbooks work to (re)produce and articulate ideological forms of common sense, which, in turn, makes them appear to be neutral – to thoroughly and deeply interrogate precisely how and why textbooks are *not* neutral. Consequently, textbooks must be critically assessed, and this implies that we must recognize that they "are conceived, designed, and authored by real people with real interests" (Apple & Christian-Smith, 1991: 2; see also Apple, 1992, 2000, 2004), and that "Textbooks are social products that can be examined in the context of their time, place and function" (Anyon, 2011 [1979]: 110).

In other words, textbooks are intentional in that they are working for someone, in someone's interests and towards particular ends, and they have a role to play within any historical formation and within the context they are written. In turn, they perform an important ideological role by telling students (and teachers) partial accounts of what exists and how the social and natural world works; for example, "this is what nature is", "nature works in this way and not in that way", or "this is natural and this is not natural". Textbooks, therefore, constitute important and valuable sources as they provide a window into (or, at least, what ought to be) – and simultaneously allows us to understand – a historically shifting common sense. Given the focus on Swedish textbooks, this common sense is, of course, enmeshed with Swedish characteristics. A historically shifting common sense in Swedish textbooks, then, needs to be understood as interwoven with the shifting histories of Sweden.

In what follows, the scholarships of (social) nature and geographic curriculum theory will be further discussed, whereas ideology feeds into these discussions. We will, however, start by briefly providing some thoughts on the concept of nature.

"Nature is…What?"

Given the many contradictory meanings of nature, Williams (2015: 164) rightly noted that nature "is perhaps the most complex word in the [English] language". In order to illustrate what Williams meant, it helps to set out some definitions. Williams (2015: 164-165) identified three common definitions of nature: "(i) the essential quality and character *of* something; (ii) the inherent force which directs either the world or human beings or both; (iii) the external world itself, taken as including or not including human beings" (see also Castree, 2014: 9-10, Castree, 2005; 8; Castree, 2001a).

Nature can thus mean and refer to many different things. Williams (1980) – who was explicitly concerned with the ambiguity, elusiveness and intricacy

of nature – nonetheless suggested that it is analytically unsatisfactory to try to define nature, to understand in any essentialist way what it *is* or attach it with the right or proper meaning. While it may be possible to undertake such a task, it is irrelevant with such a complicated concept. Following Williams, therefore, a better way to understand nature is to think about nature as a process and not a thing; that is to think through how, historically, nature has operated and functioned in society. That is to say, for example in geography school textbooks, the way in which some definitions (or ideas) of nature are at work rather than other definitions, or how different definitions (ideas) are constituted and orchestrated in a particular fashion. As Williams (1980: 67-68) wrote: "What matter[s]…is not the proper meaning but the history and complexity of meanings: the conscious change, or consciously different uses" as the changes and differences of nature "come to express radically different and often at first unnoticed changes in experience and history".

Furthermore, the question is also 'who' is saying 'what' about nature and to what ends. Again, in the words of Williams:

> …what is usually apparent [when utterances about what nature is are made]…is that it is selective, according to the speaker's general purpose. 'Nature is …' – What? Red in tooth and claw; a ruthlessly competitive struggle for existence; an extraordinary interlocking system of mutual advantage; a paradigm of interdependence and cooperation (Williams, 1980: 70).

By highlighting that utterances about nature usually tells us more about the speakers and the society which they are part of (or perhaps want to have) than what nature really is, and the social intentionally and selectiveness behind the deployment of a specific idea of nature, Williams emphasized, I think, that nature works as ideology. Yet, the problem with nature is that it does a great job with concealing its ideological load; nature *appears* to be only about nature independent of social practices, ideas and beliefs, which in turn grants it a source of authority and truth. But nature, of course, "is never a 'pure' category. It is always invested, and embedded in, social histories…it is precisely when *it appears as a pure category that it operates most ideologically*" (Willems-Braun, 1997: 25; emphasis added). The important point here is precisely that, as with the landscape, "[nature] is expected (by those with power to define its meaning) to speak for itself" (Mitchell, 1994: 10).

Even if those with power attempt to 'naturalize nature', and even if nature appears as something unproblematic, pure and given – thereby concealing its ideological load – it should be 'denaturalized' by examining the social relationship with nature in any given historical era (Smith, 1996). In order to 'denaturalize nature', there is a deep-seated ideology operating at the level of common sense that not only warrants attention, but needs to be fully understood and critiqued: the way in which nature is viewed simultaneously as something external – i.e., as an autonomous, pure, and pristine realm separate

from human society which suggests that there is no social relationship with nature – and as something universal; that is, humans are part of nature, thereby naturalizing social relations.

The external and universal conception of nature

Smith (1990, 1996, 1998, 2007) argued at great length that nature is a powerful concept, and more specifically for what he called the "ideology of nature". Despite the many ideas, meanings, beliefs, or conceptions of nature, and despite their complexity, "they are organized into an essential dualism that dominates the conception of nature" (Smith, 1990: 2). According to Smith, nature is conceived as external: a 'thing', a realm of objects and processes existing outside society. It is God-given, pristine and socially autonomous, the raw material or material substratum from which society is built. Yet simultaneously, nature is also universal, which entails that there is a human nature, that humans and our behaviours are just as natural as external nature. According to this conception, humans are 'part of nature' in the sense that we are subjected to natural processes, laws and forces; that is, "the universal concept includes the human with the non-human in nature" (ibid). For Smith, this contradictory conception of nature is an ideology: the "ideology of nature". It should thus be noted that my use of *ideologies* of nature refers to how certain ideas of nature have been articulated with and structured by the external and universal conception of nature, historically. Or phrased differently, across the period of investigation, there are a range of ideologies of nature, while "the ideology of nature" can be conceived as a "master ideology". Regarding this contradictory relationship, Smith argued in a very precise way that:

> 'Nature' is an established, trenchant and powerful weapon in 'western' discourse: its power trades precisely on the slippage from the externality to the universality of nature. The authority of 'nature' as a source of social norms derives from its assumed externality to human interference, the givenness and unalterability of natural events and processes that are not susceptible to social manipulation. Yet when this criterion of 'naturalness' is reapplied to social events, processes and behaviours, it necessarily invokes the assumption of a universal nature, a sufficient homology between human and nonhuman natures. The explanation of certain social *differences* such as class, race and gender, as natural *inequalities* (another slippage) or the explanation of some social behaviours (homosexuality) as unnatural while other are deemed natural (competition) brings to bear the full authority of an inevitable, suprahuman nature (Smith, 1996: 41; original emphasis).

What Smith explicates is here how the interaction between – and the workings of – external and universal nature works to naturalize the social. Thus, when the "naturalness" of external nature is transferred to "social events, processes and behaviours', the universal conception becomes deployed. In such a way, it becomes possible to explain social differences (class, gender, race) 'by

nature' (as natural inequalities), or to say that some social behaviours are (un)natural.

If we think about how Östling legitimized social inequality 'by nature', both these conceptions are at work. An (external) autonomous nature is not equal and since humans have "different genetic preconditions" that "lie inherently in our biology", we are simultaneously part of an unequal nature (universal). Although within a different context, "nature baths" with the strict separation between society and nature suggests that we can visit (external) nature and thus immerse ourselves within and (re)connect with our natural origin (universal). "The ideology of nature", then, is powerful since it in different ways shapes our experiences and practices or actively legitimates social inequality. Despite the many ideas and meanings of nature that have unfolded historically in textbooks, unravelling the workings of these contradictory conceptions remains central to the analysis. By grounding his work in the concept of "social nature" – "nature is nothing if it is not social" (Smith, 1990: 30) – and by developing the theory of the "production of nature", Smith established a way to convincibly critique these conceptions of nature.

The concept of social nature

The concept of "social nature" is important in so far as it provides a solid basis for how to conceive of the relationship between human society and nature. It was during the 1970s and 1980s that there was an engagement with nature within human geography (Harvey, 1974; Burgess, 1978; Sayer, 1979; Smith & O'Keefe, 1980; Smith, 1990; for work outside human geography, see e.g., Schmidt, 1973 [1971]; Leiss, 1972). Fitzsimmons (1989a; 1989b), however, criticized (radical) human geographers for prioritizing 'space' and urban phenomenon which had contributed to an underdevelopment of 'nature' or the study of the geographically and historically specific dialectic between society and nature. For a vital critical human geography, Fitzsimmons argued for the need to adequately theorize "social nature". Today, the concept of social nature constitutes common sense among human geographers, which is clear by the use of "metaphors" such as hybrid, cyborg, network, assemblage (Braun, 2002: 10) and, we might add, the development of dialectics (see Smith, 1990; Harvey, 1996). It refers to a set of ontological and epistemological arguments by which nature and society are understood as intertwined, interwoven, interrelated or co-evolutionarily produced. One cannot simply treat nature and society as distinct realms; instead they are as Marx argued a "differentiated unity" (Smith, 1990; Loftus, 2012).

Castree (2001a: 3) writes that "nature is defined, delimited, and even physically reconstituted by different societies, often in order to serve specific, and usually dominant, social interests…[T]he social and the natural are seen to intertwine in ways that make their separation – in either thought or practice – impossible". Therefore, nature as pure, given and external, or as Castree

(2001a: 5) argues, nature as merely 'natural' whether we are talking about wilderness, resources, the human body or ecological destruction makes little – if any – sense. Rather, nature is "*intrinsically* social, in different ways, at different levels, and with a multitude of serious implications" (Castree, 2001a: 5; original emphasis). Although many of the arguments in this thesis broadly "turn on the concept of *social nature*" (Braun, 2002: 10; original emphasis), they turn more specifically on the production of nature thesis (Smith, 1990, 1996, 1998, 2007), a theory which is rooted in the concept of social nature. This thesis provides a tool to grasp, problematize, challenge and critique widespread and accepted ideologies of nature. In chapter four, we will return to the production of nature thesis and the ideology of nature.

Some 25 years ago, Castree (1995: 17) argued that: "It seems to me that the critique of ideologies of nature is still broadly compelling". I would suggest that this still holds true today. While several scholars have addressed and discussed ideologies of nature to varying degrees (such as Harvey, 1974; Smith, 1990, 1996, 1998, 2007; Katz & Kirby, 1991; Katz, 1994, 1998; Swyngedouw, 1999; Loftus, 2012, 2013), it has rarely been the primary focus. Loftus (2013: 186) reacts to this relative silence on the ideology-nature nexus and contends that we need a "tighter discussion of ideology". I believe Loftus is right. In order to initiate a tighter discussion, we need a deep and careful historical analysis of the "conscious changes" Williams pointed to; or as Loftus (2013: 186) phrased it, "the infinity of traces [of nature] deposited by historical processes". Such a historical analysis – which here entails an examination of geography school textbooks – can certainly initiate a tighter discussion and thus enable us to better grasp not only how ideologies of nature have been articulated and transformed, but, for example, how such ideologies have been functioning and working.

The geography curriculum

By turning to the scholarship of 'geographic curriculum theory', the present study is broadly situated within the field of geography curriculum studies – but more specifically at the intersection between two diverse and broad fields; namely 'curriculum history' and 'curriculum theory'[4] (Lundgren, 1983;

[4] The tradition of curriculum theory – what has been called 'broad' didactics by Englund (1997) – is different from the phenomenographic methodological tradition developed by Marton (1981) – or what Englund referred to as the 'narrow' didactic tradition. These two traditions, then, answer quite different questions. The phenomenographic (narrow) tradition was (and is) interested in studying how students conceptualize any given content. Hence, the phenomenographic tradition investigates the relationship between student and content and is used to develop and improve teaching methods and students' learning. The phenomenographic tradition does not, however, critically examine curricular content. Rather, content is treated as something given which is underpinned with the idea that there is a right and correct way of understanding a content (defined by the academic discipline). By contrast, the 'broad' didactic tradition focuses on the social and historical determinants of curricular content (Englund, 1986, 1988,

Englund, 1986, 1988, 1990, 1997, 2006, 2007; Östman, 1995; Molin, 2006; Hultin, 2006; Hultén, 2008; Knutsson, 2011; Bengtsson, 2014; see also Goodson, 1998). As a curriculum history- and theory study – which will be further addressed in chapter three – this thesis is primarily "content-oriented" (Hultén, 2008: 20), that is, it revolves around the fundamental question of 'what', i.e., what *content* (ideologies of nature), is articulated. Yet, it is also connected to question of 'why', the *purpose* of this content, i.e., why is this content articulated. To understand the content, one must necessarily interrogate the purpose, and to understand the purpose, one must necessarily interrogate the content. These questions guide many – if not all – such studies, but there is no consensus about how to conceptualize these questions. To me, 'content' and 'purpose' are understood as historically and closely connected to ideology and the society that actively creates and sustains ideology. Accordingly, the curriculum should be conceived as an active ingredient within society; it shapes and is shaped by society.

Within a Swedish context, there have been important contributions to geographic curriculum theory (Olsson, 1986[5]; Wennberg, 1990; Molin, 2006[6]).

1997). Curriculum history, which can be viewed as a "sub-discipline" to curriculum theory, adds to such an understanding by seeking to demonstrate that "school subjects are not monolithic entities but rather artefacts which constantly are subject for renegotiation and reconstruction" (Löwheim, 2006: 27; see also, Hultén, 2008). Furthermore, the terminology is often confusing. The Swedish term for curriculum studies would be 'didaktik', which is sometimes translated into (geography) 'didactics' [geografididaktik]. According to Wahlström (2015: 105), the term 'didactics' is very different from and carries a different meaning in the German (and North European) tradition compared to the British and North American context. In the British and North American context, 'didactics' implies a strong instrumental and "rule-governed" teaching method. More closely affiliated with the German tradition is the American tradition concerned with curriculum theory and these two have developed in an interplay (even though the German tradition has a deeper historical grounding compared to the American tradition). In German- and North European tradition, curriculum studies, or 'didaktik', have a close connection to the concept of 'Bildung' and one key characteristics of this tradition is the analytical focus on the content (knowledge) of education. In order to avoid confusion, I will keep with the terms curriculum studies or curriculum theory instead of 'didactics' unless work of other scholars using the term 'didactics' are discussed. Furthermore, I understand the 'curriculum' in a quite broad way similar to Lundgren (1983); that is, as not only as a concrete document. The curriculum designates the entire body of content within a particular subject's syllabus and textbooks. I should also point out that in the thesis, I make no distinction between content and knowledge, rather they are used interchangeably.

[5] Olsson's thesis examined geography school textbooks, but the thesis was written within the discipline of history. I still consider Olsson's thesis as a contribution to geographic curriculum theory.

[6] The present thesis, of course, attempts to leave a contribution to this strand of research (see also Molin & Grubbström [2013] about the implementation of a new curriculum at primary school, Örbring [2017] on geographical and spatial thinking in the curriculum, Örbring [2020] on 'curriculum making' and Bladh [2020b]. One can notice here that Örbring's and Bladh's work is connected to recent debates about "powerful geographical knowledge" and "Geo-capabilities" (see e.g., Maude, 2016, 2018; Roberts, 2014; Lambert et al., 2015; Uhlenwinkel et al., 2017; Huckle, 2019; Biddulph et al., 2020) While it is often rightly argued that research within geography education in Sweden is scarce (Bladh & Molin, 2012: 59), some research has nonetheless been done. For example, studies have dealt with maps and map reading (Peterson, 1971;

Except for Olsson who studied 'views of culture' through a comprehensive study of geography textbooks, this research has focused on describing and analysing the content of the geography subject as a whole. As such, the focus has been on what kind of geographical knowledge is manifested in the geography curriculum (such as maps/cartography, population geography, political geography, physical geography, environmental education, regional geography) and the changes geography has experienced (or not experienced) in relation to various curricular and educational reforms.

From a historical perspective, both Molin (2006) and Wennberg (1990) have argued that the geography curriculum has experienced marginal changes. Molin concluded that strong selective traditions[7] have shaped the geography subject; that is, content has been solidified and new topics, themes, knowledge and concepts have been selectively excluded. As Molin (2006) writes "[the] content can be understood and explained by the strong selective traditions which have [been] formed within the subject during 150 years" (2006: 216) and "Combined the selective traditions of the school subject create a dominating school subject discourse" (2006: 204). For example, the "critical human geography paradigm", gender perspectives, sustainable development and questions concerning social justice, equality, ethnicity and solidarity have been excluded.

In his comparison between the development in Sweden, Western Germany and Great Britain, Wennberg (1990) wrote that "The general pattern of change in British and West German reform is not present in Sweden" and that "geography syllabuses have been altered, but without real structural changes or break of tradition" (1990: 213). Despite different approaches, Wennberg and Molin reached similar conclusions; geography has suffered from stagnation. The studies by Molin and Wennberg certainly constitute important contributions, but it is also important to challenge such conclusions because they suggest that very little has happened in school geography over the years; that is, such arguments tend to obscure important aspects of the geography curriculum. By contrast, I want to argue that an examination of ideologies of nature,

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Ottosson, 1987; Hennerdal, 2015) environmental education and education for sustainable development (see e.g. Grahn, 2011; Torbjörnsson, 2011; Pettersson, 2014; Torbjörnsson, 2014; Kramming, 2017), students' understandings of geographical knowledge (Arrhenius, 2013; Arrhenius et al., 2020; Dessen Jankell, forthcoming), national tests (Fjellborg & Molin, 2018; Molin & Fjellborg, 2021), learning progression (Molin & Örbring, 2017) and the way in which geography teachers' informal and formal experiences influences their interest in geography and selection of content (Molin et.al, 2015). One can here also mention various textbook studies both outside geography (e.g., Mattlar, 2006; Wickström, 2008; Hultén (2008), and within human geography and geography education (for example, Paasi, 1999; Madrell, 1998; Morgan, 2003).

[7] Molin (2006) used the concept of "selective traditions" as it was understood by Williams (1973, 1980) to analyse the history of the geography subject. By reducing the complexity to a certain extent, it refers to the content which has been selectively included and excluded in the curriculum over time. This concept has been important in curriculum theory (see for example Apple, 2000, 2004; Englund, 1986; Östman, 1995; Molin, 2006).

and the history of such ideologies as they have unfolded in textbooks, is important since it provides a different story and understanding of the geography curriculum – a story in which change has been as constant as stasis. Later on, and in chapter three especially, this notion of stasis and change – or the relationship between continuity and change – will be further discussed particularly by engaging with the curriculum theory developed by Englund (1986, 1988, 1990, 1997, 2006, 2007).

Knowledge and ideology

Concerning ideology and its relationship to the curriculum, Apple (2004: 45) claimed that "The study of educational knowledge is a study in ideology, the investigation of what knowledge is considered *legitimate* knowledge…by specific groups and social classes, in specific institutions, at specific historical moments". While our understandings of ideology diverge, and while Apple's argument should not be taken too far or interpreted too narrowly – that is, to argue that educational knowledge can be reduced to ideology or that it is only about ideology and nothing else – Apple's argument is pivotal. What I take from Apple's argument is that educational knowledge provides an important source for examining ideology.

In order to provide a different story and reach a different understanding, we must to a greater extent "make educational knowledge itself problematic…pay much greater attention to the 'stuff' of curriculum, where knowledge comes from, whose knowledge it is, what social groups it supports, and so on" (Apple, 2004: 13). Working with the concept of ideology addresses many of these questions, but of particular importance is Apple's claim that we need to pay close and careful attention to the "'stuff' of the curriculum". Figuring out this "stuff" requires committing to a deeper examination of content than what hitherto has been undertaken and it is also within this "stuff" that the workings of ideology most effectively appear and becomes articulated. Thus, such a focus not only enables, but, I think, forces us to turn the attention away from 'what kind of geography' to 'what kind of ideology *within* geography'. Essentially, to ignore the role of ideology in geography curriculum studies is to ignore a lot of what the geography curriculum is and does.

This thesis thus seeks to intertwine and synthesise these bodies of scholarship in order to grapple with and provide a critique of ideologies of nature as they have unfolded historically. Yet, grappling with and critiquing ideologies of nature as they have unfolded historically will at the same time increase our understanding of the geography curriculum, social nature and ideology. The aim, therefore, is to provide a detailed historical account of how ideologies of nature have been articulated and transformed in Swedish geography school textbooks for secondary and upper secondary level from 1866-2012. This aim will lay bare two things: first, the ideological 'nature' of nature and that nature is not 'given by nature' or self-explanatory, and secondly, that ideologies of

nature in geography school textbooks are a product of each historical period, and thus not something constant.

In chapters three and four, I will discuss the central concepts in detail. In chapter three, I engage with curriculum theory – especially as it has been conceptualized by Englund (1986) – and develop a theory of ideology adequate for the analysis of geography textbooks. By contrast, chapter four develops an understanding of the theory of the "production of nature", and the "ideology of nature". Chapters five through nine are empirical and take us through the history of ideologies of nature as they have been articulated and transformed in geography school textbooks. In the remaining part of the introduction (chapter two), I offer a discussion of the sources that have been used to examine ideologies of nature. By considering geography textbooks, I will start by expounding a brief history of – and the connections between – geography (the academic discipline), education (the geography school subject and the structure of the educational system), and the broader historical context because it is within these "contexts" that geography textbooks have been born and developed.

Chapter 2 – Notes towards an investigation and brief history of geography

This chapter is structured in the following way: first, it briefly sketches the history of Swedish geography, education, and the context within which these have emerged, and secondly, it pays attention to geography textbooks (for example, the selection of textbooks), and the mode of analysis of them.

The period between the late 1800s and the 1960s

The present investigation takes the 1860s and 1870s as its point of departure because the formation and institutionalization of the geography discipline – predominantly in Western Europe – took place during the 1870s. This was closely linked to imperialism (Hudson, 1977; Livingstone, 1992). In Sweden more specifically, the creation and emergence of The Swedish Society for Anthropology and Geography (SSAG) in 1877 can be seen as the starting point for the constitution of the academic discipline (Molin, 2006). SSAG was concerned with expeditions, travel accounts, exploration, and with "convincing people and authorities that an education in geography was a *sine-qua-non* for every citizen" (Buttimer & Mels, 2006: 36). At the time, Swedish geography "took wing" through the spirit of exploration, a "commitment to universal education", a "pragmatic interest in 'natural resources'", and, following Darwin, an increasing scientific concern with nature (ibid: 34).

It would be an overestimation to suggest that the institutionalization of geography in Sweden was deeply bound up with imperialism, yet it was nonetheless quite heavily bound up with nation-building. For the formation of a Swedish nation, a characteristic feature "was the central role nature was given as a productive resource…as a popular asset and right and as a national symbol in art and literature" (Sandell & Sörlin, 2008b: 33; see also, Sörlin, 1991; Abrahamsson et al. 1992). As we will see, geography contributed, to a greater or lesser extent, with giving nature a central role.

In the late 1800s, Sweden was marked by famine, poverty, and emigration (more than one million people left Sweden between 1860 and 1920). With the World War I and the Bolshevik Revolution, Sweden again experienced "social and economic *malaise*". At the same time, however, Sweden was rapidly industrialized. Natural resources (steel and lumber) from the northern parts were

produced, agriculture was transformed, transportation networks improved, and technological development, innovation and engineering were blossoming (Buttimer & Mels, 2006: 29-30; see also, Sörlin, 1984, 1988; Johannisson, 1984; Abrahamsson et al., 1992). "[N]ature was", Löfgren (1987: 50) writes, "conquered by science and technology" and "seen as a kingdom of slumbering riches, waiting to be exploited", and such practices, in turn, generated the idea (or ideology) of the mastery of nature (Löfgren, 1987: 50-51).[8]

In the late 1800s many associations and institutions, such as The Swedish Tourist Association (1885), Skansen (1891), and the Swedish Society for Nature Conservation (1909), were founded (Sandell & Sörlin, 2008a: 12-13). These were in different ways were concerned with (experiencing and/or protecting) the 'Swedish' nature and the 'Swedish' landscape. For example, Skansen – which was (and is) an ethnographic open-air park in Stockholm – sought to "help city dwellers remain in contact with their rural 'roots' and thereby also to avoid social unrest" (Buttimer & Mels, 2006: 32; see also, Löfgren, 1987: 61; Abrahamsson et al., 1992: 400-401). The purposes of creating national parks (1909), as another example, were on the one hand scientific (to preserve pristine nature), and on the other hand, patriotic (Sörlin, 1988: 105-110; Abrahamsson et al., 1992: 403, 406, 432; Mels, 1999, 2002).

Historians and geologists promoted the institutionalization of geography (Buttimer & Mels, 2006: 38), and the first professors were recruited from the disciplines of history and geology (Helmfrid, 1999).[9] In turn, geography's relationship to geology and history clearly "facilitated geography's capacity to foster and promote the values of Swedish cultural patrimony and regional identity" (Buttimer & Mels, 2006: 38). Geographers were occupied with "the historical evolution of [the] cultural landscape and regional systems" (Helmfrid, 1999: 27; see also, Buttimer & Mels, 2006: 38; Wikman, 2019: 18), and geographical knowledge formed a part of the "national project", by which "the geography of hembygden"[10] and "the geography of the nation" were

[8] In terms of ideology, at the turn of the century, a distinction between "nature and nonnature became sharper". With a "new Romantic attitude to nationalism", there was a search among writers, artists and scholars "for a new national identity in the landscape and in history, an identity that stood in contrast to the conservative patriotism of earlier generations who dreamed about a heroic and martial past". As part of this nationalism, there was "a cult of the simple, the genuine and the natural" (Löfgren, 1987: 57).

[9] The first professorship was established in Lund (1897), followed by Uppsala (1901), Gothenburg (1905) and Stockholm (1909) (Helmfrid, 1999).

[10] "Ideas of Swedishness", Buttimer & Mels (2006: 30; see also Mels, 2002: 138; Löfgren, 1987: 63) contend, "were invigorated through the concept of *hembygd*, a complex idea that referred to more than one's native place". "Hem" (home) could simultaneously refer to the "scales of village, nation, or world", while "bygd" referred to "cultivated land". In other words, *"Hembygd* offered a synecdochic form of nationalism in which every part (landscape, place, *hembygd*) was connected to the whole (nature, nation, Sweden), resolving the potential contradictions between individual and collectivity, localism and patriotism. Metaphorically speaking, *hembygd* thus implied a view of the world as organic whole. In spatial terms the unique character of every cultural regional, the Swedish landscape and its nature was at once confirmed and incorporated in a wider discourse of national coherence" Furthermore, "home area studies"

significant to create the notion of a Swedish nation (Wikman, 2019: 18). Regional geography, then, became an integral part of the effort to "create a national community by spreading knowledge about the nation's nature and population", and "To map, count and measure the nation was a way to make a territory into a nation" (ibid: 19).

Mapping, counting, and measuring the nation clearly had an economic dimension. The School of Economics and Business Administration (Handelshögskolan) was founded in 1909 with the professor Gunnar Andersson (1865-1928), who specialized in economic geography and natural resources (Buttimer & Mels, 2006: 38). Geographers were particularly interested in the abundance of natural resources found in the northern parts of Sweden (Norrland). In this way, geography "responded to a major concern of the times, i.e., to document a synthetic overview (survey) of the country as a whole" (ibid: 39; see also Sörlin, 1984, 1988). Natural resources, particularly those found in the northern parts, were perceived as "magnificent", and they were embedded in a "national rhetoric". In short, they would make Sweden into a rich, successful, and developed industrial country (Abrahamsson et al., 1992: 394; Sörlin, 1988).

Thus, the objective of the two seemingly conflicting movements of "industrial and technological innovation" (industrialists were viewed as "heroes") and "the cultivation of a rural romanticist national identity" was "the effort to strengthen national identity" (Buttimer & Mels, 2006: 33; see also, Sörlin, 1984, 1988).

Geographers were also occupied with educating geography schoolteachers (Wikman, 2019). Schools were crucial for the further institutionalization of the geography discipline (1880-1920). The educational system was expanding and there was thus a need for trained geography teachers, but quite importantly, the school subject also served to strengthen national identity (Olsson, 1986; Molin, 2006; Bladh, 2020a; see also, Capel, 1981).

School geography was little interested "in folk movements or the political turmoil of the turn of the century", and although school texts occasionally were influenced by pedagogical ideas originating in Germany and Denmark, they put an emphasis on "world map recognition exercises". With such an emphasis, school texts seemed quite unaware "of the exploratory spirit about polar research or concurrent events at home" (Buttimer & Mels, 2006: 37). In other words, school geography provided (descriptive) knowledge about different regions/countries in the world concerning "location, size, population, natural conditions, natural resources, business and cities" (Molin, 2006: 93; Wennberg, 1990). Although I believe this diagnosis is valid, it should not, of

(hembygdsforskning) conducted in "People's colleges" (Folkhögskolor) "with its patriotic and pragmatic ethos, was another important source of inspiration for the development of geography from the 1870s on" (Buttimer & Mels, 2006: 37).

course, be interpreted as if school texts (or textbooks) were written and developed in a historical void.

Until the 1950s prospective teachers had to read Selma Lagerlöf's fictional book *The Wonderful World of Nils* (1906-1907), Rudolf Kjellén's *Introduction to Swedish Geography* (1900) and Sven Hedin's *From Pole to Pole* (1911), while students were provided with Ernst Carlson's "School geography" (a textbook included in this investigation) and Magnus Roth's World Atlas (Buttimer & Mels, 2006: 37). School textbooks and reading books were implicated in establishing and disseminating the idea of the "national landscape" (Sörlin, 2008: 21). Lagerlöf was appointed by the Swedish teachers' association to write the aforementioned book, and in short, the story is about the boy Nils who flies across Sweden's landscapes/provinces on the back of a goose. When Nils returns to Skåne, "he has learnt to see his province as part of the larger whole that is encompassed by the territory and nature of Sweden" (Olwig, 2008: 76).[11] This book was ultimately used in the teaching of geography (Molin, 2006; Bladh, 2020a).

Concerning the structure of the educational system, Sweden had until the 1960s a complex segregated educational system – what has been called a parallel school system – which differentiated students based on class and gender (see appendix I for a figure showing the structure of the educational system from the mid 1800s to the present). To simplify, the educational system was divided into an elementary school (folkskola), which was established in 1842 for the working and peasant class (i.e., the vast majority of the population), and a grammar school for the middle and upper class (Wickström, 2008: 13; Rothstein, 1986: 137; Edgren, 2011: 103). However, there were some overlaps between these school forms. In 1894, for example, it was established that admittance to the first class of the grammar school would correspond to the third class of elementary school (Edgren, 2011: 110; Larsson & Prytz, 2011: 126), and later on, the connection between these school forms was strengthened (Edgren, 2011).

Industrialization demanded changes to the grammar school. Richardsson (2010: 58) underlines that the bourgeoise, with their growing political influence and a more utilitarian educational ideal, saw the existence of the grammar school (with its focus on Greek and Latin) as antiquated, while Rothstein (1986: 137) maintains that the growing industrial- and commercial capitalists sought a more business-oriented grammar school (see also, Isling, 1980). In the second half of the 19th century, the grammar school was divided into two programmes: 'Latin' (which, in turn, was divided between a Classical and semi-Classical variant) and 'Real' (with an emphasis on mathematics and natural science, but also – as it evolved – technology, economics and modern languages) (Larsson, 2003: 59; Larsson & Prytz, 2011: 125 & 130; Rothstein,

[11] Olwig provides a lengthier discussion concerning Lagerlöf's story about Nils (see also, Sörlin, 1988: 102-103).

1986: 138; Richardsson, 1973: 47; Isling, 1980: 102). Broadly speaking, at the upper secondary level, geography was – especially after 1878 and until 1895 – part of the dual subject history/geography and predominantly read at 'Real'. In 1895, geography partly became an independent subject and read both at 'Real' and 'Latin', albeit still predominantly at the former (Olsson, 1986: 55-56 & 58).

In 1905, the grammar school was split into two schools or stages; a lower six year stage (without Latin) referred to as 'realskola' (junior/lower secondary school)[12] and a higher four year stage referred to as 'gymnasium' (upper secondary school) (Richardsson, 1973: 45; 2010: 98; Isling, 1980: 104; Larsson & Prytz, 2011: 126-129). Geography was an independent subject at 'realskolan' until 1962. In 1909, geography became an independent subject at the 'gymnasium' (Bladh, 2020a), and it was a mandatory subject on all three programmes of the gymnasium; Latin, Real and General (Torell, 1998: 18).[13]

Thus from the late 1800s until the beginning of the 1960s, the school subject had a quite strong position within the educational system, and the relationship between school geography and academic geography can be characterized as relatively strong. For example, Helge Nelson (1882-1966), a professor at Lund University, wrote several geography school textbooks and was one of the co-founders of The Association for Geography Teachers (Geografilärarnas förening) (Bladh, 2020a: 24), and several professors, such as Filip Hjulström, Gerd Enequist, Torsten Hägerstrand and Staffan Helmfrid, served as the chair for The National Association for Geography Teachers (Geografilärarnas Riksförening) (Molin, 2006).

The period between the 1960s and 2010s

In the 1960s, the educational system underwent several changes, and these did not, of course, arise out of thin air. The School Commission of 1946 (SOU 1948:27), as Molin (2006: 97) puts it, "came to establish the foundation for a new Swedish educational politics". In the 1960s, there was a shift from a differentiated and segregated school system to a nine-year compulsory school (primary and secondary level). The reform of 1965 (Lgy65) was the first step towards fully eradicating the parallel school system at the upper secondary level, something which was accomplished with the establishment of an integrated gymnasium in 1970-1971 (Lgy70) (Molin, 2006).

Within this context, the status of geography was about to change. With the curriculum reform of 1962 (Lgr62) – the first curriculum for the compulsory

[12] Realskolan' roughly corresponds to secondary level (högstadiet) after the establishment of the compulsory school in 1962.

[13] The General programme (with subjects from the social sciences) was introduced in the 1950s and geography became one of the main subjects. The natural sciences dominated at Real and classical languages at Latin (Torell, 1998; Olsson, 1986; Larsson & Prytz, 2011).

school – geography survived as an independent subject at the secondary level. With the curricular reform for upper secondary school (gymnasium) in 1965 (Lgy65), geography disappeared as an independent subject since human geography became part of civics and physical geography part of natural science.[14] Thus the school subject followed the same trajectory as the academic discipline, which was divided into human and physical geography during the 1950s and early 1960s (Olsson, 1986; Molin, 2006).

As Helmfrid (1999: 27) notes, one important factor for this division "was the rapid scientific growth demanding more and more specialized competence for research". That the geography school subject became marginalized and disintegrated may seem peculiar given that human geography enjoyed something of a renaissance in the post-war era. With an era characterized by a tremendous economic growth, the expansion of the (Social-democratic) welfare state, urbanization, and uneven regional development, but also as "a reaction against a historical and rural-oriented traditional regional geography" (Asheim, 1987: 338), human geography became planning science, and especially "an *applied social science*" (Asheim, 1987: 339, original emphasis; see also, Helmfrid, 1999; Wikman, 2019; Öhman, 1994; Buttimer & Mels, 2006; Öberg, 2005).[15] Clearly, human geography as a whole did not transform into a planning science (Wikman, 2019: 14), but as Helmfrid (1999: 29) argues, "Never before geographers had been involved in more important public work, providing the scientific basis for a modernisation of regional structures and infrastructure in Sweden carried through by the 'strong state' of the social democratic party".

Although the geography discipline was divided, the education of geography teachers was still done from an integrated geography subject, which regional geography was still dominant. As human geography quite early evolved into a planning discipline, Asheim (1987: 338) argues that "traditional regional geography never became especially dominant at Swedish geography departments". Yet, there was one exception, namely "in the training of geography teachers because of the structuring of geography teaching in primary and secondary schools, where regional geography exerted a major influence". This led to "the separation of the elementary teaching aimed at the training of teachers from the more advanced teaching, aimed at the training of planners

[14] That geography disappeared at upper secondary level, Molin (2006: 101) explains, was due to an "avnämarundersökning" (see SOU, 1963:42) – perhaps best translated into 'utility survey' – that reviewed the societal utility and demand for geography among business, agencies and universities. In short, the survey demonstrated not enough demand which, in turn, did not motivate an independent subject at upper secondary school.

[15] The roots of this "planning geography" was research within economic geography, and researchers such as Sten de Geer (1886-1933), William William-Olsson (1902-1990) and Edgar Kant (1902-1978) (Wikman, 2019: 19-20).

and researchers, and thus eventually to a division between teachers and researchers".[16]

As such, instead of receiving influences from the intellectual developments in physical and human geography, "school geography gradually lost contact with the development within the two parts of the discipline" (Molin, 2006: 36). In this light, Holmén & Anderberg (1993: 47) claims that the "gradual renewal [of school geography] has depended more on impulses from textbook- and curriculum authors than from research at the university". Regional geography – which had dominated school geography from the 1870s and perhaps even before that – was continuously manifested. Accordingly, if the era before 1962 can be characterized by a relatively strong relationship between the academic discipline and school geography, the era from 1962 and onwards can be characterized by the opposite.

Similarly, the syllabuses for secondary level during the 1960s (Lgr62; Lgr69) was dominated by regional geography and the human-environment tradition (Molin, 2006; Bladh, 2020a). For example, both Lgr62 (p. 265) and Lgr69 (p. 186-187) emphasized the "description of the environment" [miljöskildringen] as the most important task for geography teaching. This entailed a description of specific places, areas, countries and regions which constituted "significant geographical environments on our earth". However, following reports about environmental degradation (e.g., acid rain), and with that, a rising "environmental consciousness" in the 1960s and 1970s (Buttimer & Mels, 2006: 87), there were some minor, albeit important, shifts. These included, for example, putting an emphasis on environmental questions and nature (and culture) conservation (Lgr62; Lgr69; Molin, 2006). Or as it was phrased in the curriculum of 1980: "Teaching should be characterized by an ecological basic view [grundsyn] and lead to elementary knowledge in questions concerning the survival of humanity (Lgr80: 120).

However, a rising "environmental consciousness" did, of course, not only entail changes to the curriculum. For example, the Swedish Environmental Protection Agency was founded in 1967, an environmental protection law was passed in 1969 (Abrahamsson et al., 1992: 427, 431), the United Nation's International Environmental Conference took place in Stockholm in 1972 (in the same year, the parliament decided that national physical planning should be infused by "an ecological viewpoint [synpunkt]" [Sörlin, 1991: 193]), and The Beijer Institute (International Institute for Energy and Human Ecology) came to light in 1977 (Buttimer & Mels, 2006: 81-82).

In the 1980s, the work began to reintroduce the geography as an independent subject at the upper secondary level (gymnasium). Sverker Torell at the

[16] Furthermore, Asheim (1987: 338), by citing Pred (1984: 101), wrote that "in contrast to the group around Hägerstrand 'it was readily apparent that a very large share of the [Lund] department's undergraduate teaching was being performed by individuals who were highly unsympathetic to Hägerstrand's point of view and who reluctantly [if at all] accepted cirriculum [sic] innovations which reflected recent disciplinary changes'".

Stockholm Institute of Education, for example, published an appeal [upprop], thereby urging geographical associations and departments to actively work for the subject's reintroduction. With the curriculum reform of 1994, geography was reintroduced, but it became a relatively minor subject in the social sciences. One of the core arguments for reintroducing geography was its perceived capacity to deal with environmental questions, specifically because of the interdisciplinary nature of the geography subject (Molin, 2006: 131-132). With the curriculum reform of 2011, geography basically maintained its position.

Geography textbooks

Given the historically changing educational system – and the way in which geography has changed and been part of different contexts and settings – studying the articulation and transformation of ideologies of nature in textbooks for 146 years (1866-2012) certainly pose some challenges; including creating a (relatively) consistent historical narrative, and how to select textbooks.

Creating a (relatively) consistent historical narrative

One way to address this challenge has been to delimit the study to textbooks for upper secondary level – but also, as will be discussed more in a moment, textbooks for secondary level between 1962 and 1994– which cover a course, a semester, or school year, and that have been written in relation to the present curriculum and syllabus.[17] Therefore, geography textbooks for elementary school, primary/middle school, 'realskola', as well as other forms of educational materials such as reading books (e.g., Sven Hedin's *From Pole to Pole*), atlases, dictionaries, recess material [fördjupningsmaterial] teacher's guides [lärarhandledningar], school radio and TV (see Holmén, 2006: 23), have been excluded.[18] However, it should be noticed that these delimitations are approximate rather than absolute. Carlson's textbook (Course 2, 1887-1944) and Moberg & Näsmark (1947) – which was a new edition of Carlson's textbook – were published for both 'realskolan' and 'gymnasium'. The boundaries

[17] My focus largely correlates with "Pedagogic Text Type 1" in Selander's (2003; cited in Wickström, 2008: 21) typology of different pedagogical texts. This entails that the text(book) has been produced "within the framework for an educational institution", that its "purpose is to realize [implement] a curriculum [and syllabus] and to reproduce existing knowledge". Furthermore, the text(book) is adapted to a subject and to a "defined reading group", but it also has "socializing and normative functions". Yet, besides merely *re*producing existing knowledge, it is necessary - a will be pointed to in chapter 3 and 4 – to think of textbook and textbooks authors as (re)producing and as co-producers of knowledge and reality.

[18] As elementary school (folkskola) was disbanded in 1962 with the introduction of the nine-year compulsory school, I here use elementary school to refer to the educational system before 1962 and primary/middle school to refer to the educational system after 1962.

between the different school forms were not as rigid as they may appear, and 'realskolan', then, is covered to the extent that there have been overlaps.

Given that an inquiry of geography textbooks – with or without other forms of educational materials – across all levels of the entire educational system for 146 years would be an overwhelming task, this has helpfully and necessarily restricted the scope of the inquiry. Although the value of specifically focusing on textbooks will be considered more in a moment, one can briefly point to Holmén's (2006: 23; see also, Olsson, 1986) argument as to why we should focus on textbooks: "Through all the changes that have occurred in the educational system during the 1900s, the textbook has…over time maintained its position as the absolutely most important educational material".

There are several reasons for concentrating on upper secondary – as well as secondary – level. First, admittance to grammar school required knowledge about Sweden, Norway, and Denmark, and the nature of the 'hembygd' (Molin, 2006: 93), while for primary/middle school the emphasis was (and perhaps still is) on 'hembygden', Sweden and Europe (ibid: 40). Clearly, while valuable insights may have been revealed by analysing textbooks for these school forms, this emphasis indicates a quite limited and excluding geography subject.

Secondly, for the state and church, elementary school was an "instrument for fostering and control", and although the school was secularized in the first half of 1900s, the two main purposes were to provide knowledge about "the correct Christian faith" and to create a "love for the motherland" (Isling, 1980: 114; see also, Edgren, 2011; Molin, 2006; Hultén, 2008).[19] Clearly, an analysis of textbooks for elementary school would not *necessarily* need to address questions of fostering, control and so forth (questions which in different ways are central to education across all levels over time, including the grammar school [Olsson, 1986: 65]), however, I believe these questions should not be ignored. Such an analysis is necessary, and it would constitute an important story by itself.

And thirdly, examining textbooks at a particular level (or levels) over time has allowed me to not only closely and in detail probe articulations of ideologies of nature and their historical shifts, but following that, inevitably to make a narrower and sharper argument about such ideologies at a particular level (or levels). In turn, this has allowed me to build on and to certain degree challenge the arguments advanced by studies within geographic curriculum theory (Olsson, 1986; Wennberg, 1990; Molin, 2006). The present study, then, is not institutionally delimited to a particular "historical school form", and thus, it is not "socially delimited" (Wickström, 2008: 13). The textbooks surveyed here

[19] The *Reading book for elementary school* (Läsebok för folkskolan), which "in a distinct nationalistic spirit conveyed what was typically Swedish" to prospective teachers and students, was published in 1868 and used until the 1940s (Edgren, 2011: 108-109). Furthermore, elementary school was shaped by the moral curriculum code. See chapter three for a brief discussion.

have been part of different historical school forms, which is to say that they have been geared towards different groups of students. Prior to 1962/1965, geography was at the upper level read by relatively few students (although historically shifting, see Olsson, 1986: 52-55), while geography at the secondary level after 1962 was part of the compulsory school and a mandatory subject for all students. From 1994, geography was at the upper level read by students at a particular branch of the social sciences (Molin, 2006). Rather, the (relative) historical consistency lies in the primary emphasis on textbooks published for the upper secondary level.

However, as has been signalled, the period between 1962 and 1994 constitute an exception, and this relates to the fact that an independent geography subject disappeared at the gymnasium in 1965. Prior to 1962 and after 1994, textbooks published for upper secondary level have been examined, but between 1962 and 1994 the focus shifted to textbooks used for secondary level. The reason for making this move is that textbooks for secondary level – as with the textbooks both prior to 1962 and after 1994 – cover an independent, coherent, and integrated *geography* subject. Accordingly, this thesis deals with *geography* textbooks, although I recognize that it would have been possible to unravel ideologies of nature in other subjects than geography, such as subjects belonging to natural science (e.g., biology) or perhaps even history and civics. In 1965, for example, the school subject natural science (Lgy65: 341-343) – which incorporated physical geography – covered human-nature relationships and the intensified utilization and exploitation of nature and natural resources, the uglification of landscapes, pollution, nature as a mean for recreation, and nature conservation as an "instrument in the struggle against the vandalization of nature".

Yet, as we will see, many – if not all – of these topics were discussed in the geography subject for secondary school too. As I see it, this thesis is firmly rooted in geography (both concerning curriculum theory/history and theories about nature), a subject that at its core aims to understand and provide knowledge about the interrelations between human society and nature (Peet, 1998: 2). The ambition driving this study, therefore, has been to make an argument about ideologies of nature in *geography* textbooks, and not about ideologies of nature in general.

Selecting textbooks

A different way to address the challenge of examining textbooks for 146 years has been to focus on the most widely used geography textbooks. Olsson's (1986) thesis has been pivotal for distinguishing and selecting a number of textbooks for each decade from the 1870s to the mid 1980s. Olsson studied state records and reports and contacted publishers to estimate which textbooks

that had been approved, published and, in turn, used in schools.[20] Therefore, the selection of textbooks from the mid 1860s to the mid 1980s has been based on Olsson's inventory (see appendix II for a list of textbook authors). I say 'based on' because this inventory has been supportive and functioned as a point of departure. Selecting and examining the most used textbooks certainly increases the risk of overlooking counter-narratives: textbooks which – in one way or another – have attempted to challenge the dominant textbooks. To deal with this, I have included a few textbooks that have not been part of Olsson's (1986: 79-80) main inventory (see e.g., Olsson, 1930; Modie & Moen, 1968; Nordström et al., 1975). After 1985, we know very little about which textbooks that have been used in schools. Based on the textbooks available in the archive[21], there have not been a great number of textbooks published. Therefore, I have included most of the textbooks that have been published after 1985, specifically those that have been republished (new editions) and/or reprinted, and those with reoccurring authors.

Textbooks – the concrete form of the curriculum

Geography school textbooks for secondary and upper secondary level thus constitute the main sources for this investigation, while curricula and syllabuses are supplementary and complementary sources. We will here return to why textbooks are the main source. First, given the way in which curricula and syllabuses are written, they are too general and too brief for examining ideologies of nature. Secondly, curricula and syllabuses – as well as other sources important for understanding the geography subject – have been scrutinized by Olsson (1986)[22] Wennberg (1990) and Molin (2006). Consequently,

[20] For example, the SOU (1931:2, p. 104-105) presented an overview of the textbooks used at the grammar schools, municipal middle schools (kommunala mellanskolor) and individual educational institutions (enskilda läroanstalter) during the school year of 1927-1928. Regarding geography, there is only one textbook listed, which is to say that almost all schools used Ernst Carlson's (1854-1909) "School geography". This was published in two versions: Course 1 and Course 2. The textbook for Course 1 (predominantly for 'realskolan') was used at 259 schools, while the textbook for Course 2 (predominantly for 'gymnasiet') was used at 257 schools. "School geography" had a dominating position on the textbook market and was the most used textbook from the late 1800 to the 1940-1950s (Olsson, 1986; Bladh, 2020). The textbook for Course 1 was published in 23 editions from 1887 to 1946 and the textbook for Course 2 was published in 19 editions from 1887 to 1944. After Carlson's death in 1909, his textbook was republished by Fagerlund, Rönnholm, Moberg and Näsmark. Furthermore, it should be emphasized that by targeting the textbooks that have been 'used' in schools at a particular time can entail that the textbooks have been published several years before. For example, textbooks that were used during the 1870s might originally have been published prior to the 1870s but through various revisions and new editions, they were still 'used' (Olsson, 1986).

[21] The archive here refers to the Blåsenhus library at Uppsala University. Carolina Rediviva at Uppsala University and The Royal Library in Stockholm have also been crucial, especially, but not only, regarding textbooks published prior to the 1950s.

[22] Olsson (1986: 211-222) even provides a list of all geography syllabuses for secondary and upper secondary level from 1856-1980.

one can receive a good understanding of geography subject at the level of curricula and syllabuses by reading their work. There is no need to repeat it. Thirdly, and quite importantly, "Textbooks can be seen as the curriculum's concrete form and as a frame-factor which affects the content of teaching" (Johansson Harrie, 2009: 18; see also Wennberg, 1990: 165; Holmén, 2006: 23; Apple, 1985: 149).

In a similar fashion, Molin (2006: 186; see also Wickström, 2008: 16; Ammert, 2011: 26-28; Englund, B. 2011: 280-282[23]) argues that the textbook governs teaching to a large extent since the textbook constitutes a source for the selection of content and for lesson planning, but "students' knowledge is [also] controlled…and graded in relation to the text of the textbook". Furthermore, textbooks are envisaged as "authoritative texts"; that is, they are conceived to represent the 'truth' and thus they are seldomly questioned by teachers or students. Apple & Christian-Smith (1991: 4) similarly note that textbooks "participate in creating what a society has recognized as legitimate and truthful. They help set the canons of truthfulness". What Apple & Christian-Smith draw attention to, I would argue, is how textbooks – and the making of textbooks – work to construct, and therefore, provide a window into (or what ought to be) common sense.

Textbooks, then, are an elaborated and concrete account of the curriculum, they are important pedagogical tools, they have quite a strong impact on the social relations of classrooms, they shape – to a greater or lesser extent – teaching and what is taught, they are perceived as truthful, and they offer us a window into common sense. In such a way, textbooks become crucial to critically examine.

Yet we should at the same time not grant textbooks with too much power. Apple (2000: 58) reminds us that "We cannot assume that what is 'in' the text is actually taught. Nor can we assume that what is taught is actually learned…[T]eachers have a long history of mediating and transforming text material when they employ it in classrooms". Concerning students, they also "accept, reinterpret, and reject what counts as legitimate knowledge selectively". With that in mind, this study does not make any claims about *how* textbooks have been (or are) used in practice: for example, to what degree teachers have based their teaching on textbooks, how and what content they have selected, how teachers or students have understood textbook content, or whether they have accepted or challenged the content of the textbooks. Answering such questions (the reception/consumption of textbooks) would constitute a quite different aim and require a different set of methods. Rather, the

[23] As Wickström (2008: 15-16) emphasize, independently of the methods at work in the school, the use of texts (or textbooks) has been an important part of teaching. "This leads to the assumption", he writes, "that the study of narrative content in pedagogical texts is highly relevant from an educational-historical point of view". Ammert (2011: 27) discusses Lundgren's (1982: 108) study, which showed that 88 % of Swedish teachers used the textbook for their lesson planning, while only 25 % used the curriculum.

knowledge claims of this thesis constitute, and is confined to, a critique of ideology. Thus it offers an analysis of the history and workings of a particular set of ideas. Before addressing this, I want to briefly point to some of the factors which shape the content (and form) of textbooks.

Making and shaping the content of textbooks

The textbook is a result of a process and the process of producing a textbook is shaped by several factors. Holmén (2006: 25-26) points to six factors. First, the quite enormous pool of "facts" or knowledge produced by research. Secondly, in the making of textbooks, textbook producers, authors, and publishers select certain "facts"/knowledges. Textbooks, Wickström (2008: 20) argues, "often are characterized by a totalitarian didactic ambition to package what is considered worth knowing within a given area". Since this is merely the ambition, it is necessarily so that "textbooks…signify – through their content *and* form – particular constructions of reality, particular ways of selecting and organizing the vast universe of possible knowledge" (Apple & Christian Smith, 1991: 3-4; see also Apple, 2000: 46).

The "personal views" of textbook authors, Holmén (2006: 25) maintains, may affect the form (and content) of textbooks. Långström (1997: 185-190, 218-219, 240; cited in Holmén, 2006: 27; Wickström, 2008: 21), who interviewed textbook authors, claims that parts of their "lifeworlds" are written into the textbooks. Långström (1997: 82-83; cited in Holmén, 2006: 29) also shows that there has been a political shift towards the centre compared to early 1900s; a time by which all history textbook authors were conservative or extremely conservative. Regarding geography textbooks authors, the picture looks somewhat different as some authors in the late 1800s and early 1900s were liberals (for short biographies about geography textbook authors, see appendix III). Yet, at the same time, given that prospective teachers had to read Rudolf Kjéllen's textbook, there might have been conservative influences. Furthermore, the publishers exercise some influence over the text, and they can choose the author(s) they want to hire. Clearly, several factors affect and limit the authors so that they cannot shape the textbook "entirely to their own liking" (Holmén, 2006: 25).

Thirdly, state control through curricula (and syllabuses) and review agencies is a central part of the process. For example, from 1938 until 1991, every textbook was controlled by a state-led committee, which ultimately decided whether to approve a textbook (from 1983-1991, the committee provided opinions). They previewed for instance the issue of objectiveness, scope, price and pedagogic qualities. In 1991, however, the committee was disbanded. Prior to 1938 and after 1991, occasional previews have been done (Johansson Harrie, 2009: 12-14).

Fourthly, the demand on the textbook market must be factored in. As with all commodities, textbooks are produced to be sold. They must therefore

"appeal to the buyers" (schools, teachers), which is why it is in the interest of authors and publishers to produce textbooks with a content that teachers find appropriate and useful (Holmén, 2006: 25). Fifthly, textbook producers and authors are shaped by the currents and conditions of society. In other words, textbook authors' "lifeworlds" and "personal views" are rooted in a particular historical context and shaped by a variety of forces.

And sixthly, textbook tradition, textbook genre and old prejudices have an important role to play. Holmén (2006: 26) contends that much textbook research has aimed to illustrate and unravel negative depictions (injustices, discrimination) [missförhållanden]. The continuity, inertness, and conservative features of the content – a content which in some cases express obsolete attitudes and prejudices – have thereby been accentuated.

In this analysis, I do not explore all these 'factors' in detail (or their interrelations), and thus not the specific processes of producing a textbook. However, while all these factors are important to recognize as shapers of textbooks, it seems particularly important to recognize "facts"/ knowledge, "personal views" and conditions of society (historical context) as shapers of the content of textbooks (although ideology should not be equated to "personal views"). Furthermore, given what I have pointed to earlier, the emphasis on the continuity, inertness and conservative features of textbooks needs to be addressed. As Wickström (2008: 23; see also Holmén, 2006: 26) writes, "There was an inertia or strong conservative tendency in the pedagogical texts during the 1800s and 1900s, which partly can be explained by [the fact] that textbook authors copied each other and previous titles".[24] This tendency is not difficult to spot, and this makes it even more important to hold on to – as both Wickström and Holmén demonstrate in different ways, and as we will discuss more – the dialectic of stability (continuity) *and* change; that is, the tension between continuity *and* moments of rupture (Mitchell, 2008: 42).

Making sense of the history of ideologies of nature

Within environmental history, the realm of ideas – "myth, religion, science, ethics, [and] ideology" – constitute one analytical level, the other two being nature itself, and the socio-economic level, which includes among many things the conditions of (re)production and economic structure (Sörlin, 1991: 24; Worster, 1988). Although distinguished, they should be taken "as one whole", a "whole [that] changes as nature changes, as people change, forming a dialectic that runs through all of the past down to the present" (Worster, 1988: 293). Regarding the realm of ideas, it is assumed that "humans' environmental praxis" – basically how we produce nature – is "guided and circumscribed by different forms of beliefs and ideas" (Sörlin, 1991: 24).

[24] In the footnote, Wickström also cites Selander (1992: 103) in which the latter argues that "textbooks inherit textbooks".

A central concept deployed within this analytical level is "*views of nature*", a broad concept encompassing attitudes, ideas and (aesthetic and moral) beliefs about nature (Sörlin, 1991: 26; original emphasis; see also, Hultén, 2008). Certain views of nature are dominant within a specific historical epoch, and they are intertwined with the historical development. Consequently, they may change depending on social and economic processes. In turn, while ideas may be shaped by such processes, they also shape "the historical praxis of humans" (Sörlin, 1991: 27).

In this analysis, the concept of views of nature deployed within this analytical level is clearly important, but not views of nature in general. Rather, as theory and method are not easily separable here, the external and universal conception of nature have functioned as the central analytical tools for the analysis. They have been central not only in identifying and tracing key articulations of ideologies of nature (or main ideological representations of nature) historically, but as a methodological and analytical lever, allowing me to interpret articulations as they have unfolded in the textbooks. At the centre here, then, lies an interest of how the external and universal conception of nature (as well as ideologies more broadly) have been *articulated*. Hall contended in an interview with Grossberg (1986: 53) that the concept of articulation[25] has a double meaning. Here, we are concerned with the first meaning of articulation (we will return to the second meaning in a moment). Thus, articulation "means to utter, to speak forth, to be articulate. It carries that sense of language-ing, of expressing". Clarke (2014: 120) refer to this aspect of articulation as "the ideological, discursive, and symbolic practices of articulation", while Barker (2012: 9) refers to it as "expressing/representing".

By identifying and tracing key articulations of ideologies of nature, and by using the themes and focus which the textbooks demonstrate, the following themes were developed:

1866-1962: (i) environmental determinism and (ii) the division of human races (racial biology/scientific racism); 1962-1994: (iii) the environmental crisis and system's ecology, and (iv) the population explosion (overpopulation); 1994-2012: (v) climate change and (vi) sustainable development.

These themes constitute, I would argue, not only very fertile grounds for examining articulations of ideologies of nature, but – given that these themes are historically rooted and reveal continuity and change – the most significant

[25] It should be noted that I use 'articulation' in a restricted sense; that is, I draw on Hall's argument in a limited way, although being aware of the richness and complexity of the concept (see e.g., Hall, 1980, 1983, 1985, 2003; Slack, 1996; Hart, 2002, 2004; Clarke, 2014, 2015; Lehtonen, 2016; Pries, 2017; Ekers et al., 2020). Thereby, it would be more accurate to say that I have been inspired by (certain features of) the concept. This way of approaching articulation has, in turn, found inspiration in Lagerqvist's (2011: 57) approach of text analyses which are 'influenced' by discourse analysis. As Lagerqvist emphasizes, discourse analysis is a diverse and broad field and the analyses of texts in her thesis are not considered as "complete discourse analyses". I follow a similar approach to articulation.

and important ones. The population explosion and environmental questions were, for example, key issues in the world in the 1960s and 1970s. Quotations (passages from the textbooks) have been selected to illustrate and demonstrate how ideologies of nature have been articulated. Furthermore, it should be emphasized that these themes are not the only ones, and I have not covered everything within the themes. In turn, these themes do not exist independently of each other, and this periodization should not be viewed as absolute. Rather, there are relations between them, and specific ideologies move across eras.

However, given that articulations in this first sense – the realm of ideas or views of nature – cannot be understood independently, context is important to the analysis. In their discussion of the contextual approach developed by Berdoulay (1981) for examining the history of geographical thought, Smith & Godlewska (1994: 3) maintain that this entails "consideration of changing systems of thought and social ideologies…and the functional importance of specific geographical ideas in specific places in specific times". While the phrasing is slightly different, changing ideologies and how ideas are functional both in space and time lie at the very centre of this investigation, and therefore, a contextual approach is important and useful for understanding textbooks historically.[26]

To grapple with context, the concept of articulation remains central since it stitches together ideology and context. Here, then, we return to the second meaning of articulation. For Hall, it is possible to speak of "an 'articulated' lorry' (truck): a lorry where the front (cab) and back (trailer) can, but need not necessarily, be connected to one another" (Grossberg, 1986: 53). With an emphasis on (non-necessary) connections, articulation is, for example, used "to discuss the relationship between culture and political economy" (Barker, 2012: 9). Thus, in sum, articulation refers to "both 'joining up' (as in the limbs of the body, or an anatomical structure) and 'giving expression to'" (Hall, 1980: 328; cited in Ekers et al., 2020: 3). So, according to Hall:

> By the term, 'articulation,' I mean a connection or link which is not necessarily given in all cases…but which requires particular conditions of existence to appear at all, which has to be positively sustained by specific processes, which is not 'eternal' but has constantly to be renewed, which can under some circumstances disappear or be overthrown, leading to old linkages being dissolved

[26] Put differently, although I focus on the 'history *of* geography' – (the production of) geographical knowledge (content) – in order to reveal ideologies of nature, it seems crucial to not lose sight of its the relationship to 'historical geography'; the making of the world we inhibit (Smith, 1987, 1988; Smith & Godlewska, 1994; Smith, 2011; Millar & Mitchell, 2017). The history *of* geography has to be conceptualized as part of, bound up with, internal to, and dialectically interwoven with historical geography.
Harvey (1974: 267-268) made a similar remark by which he argued that "The analysis of ideas…is…directed to understanding the society that produced them…[and] understanding what it is they tell us about the reality they purport to describe". At the centre here is the following question: "what is it that produces ideas [of nature] and what is it that these ideas serve to produce?" (Harvey, 1974: 268).

> and new connections – re-articulations – being forged (Hall, 1985: 113; see also, Grossberg, 1986: 53).

Hall takes the example of 'religion' as articulated since it has no specific or necessary political belonging. Yet, "in one historical-social formation after another, religion has been bound up in particular ways…as the cultural and ideological underpinning of a particular structure of power" (Grossberg, 1986: 53). This suggest that religion is not "free-floating" since it "exists historically in a particular formation" and is grounded within various social forces. Rather, Hall's point is that "it has no necessary, intrinsic, transhistorical belongingness" since its very (ideological) meaning – or we might say certain ideas of religion – "comes precisely from its position within a formation". Given that articulations are not necessary or transhistorical, they can be *transformed* and *re-articulated* in several ways. I would claim that it is possible to think about ideologies of nature in a similar way to how Hall thinks about religion. Ideologies of nature are not "free-floating" or "transhistorical" but articulated in relation to a specific society and historical conditions and events. There are accordingly certain "conditions of their existence", but there is also a certain kind of work that goes "into making and sustaining specific articulations" (Clarke, 2015: 277).[27] In turn, depending on changing historical conditions and events, ideology can be re-articulated. Thus, re-articulation offers a way to think about how ideology operates within and are integral to the dialectic of stability and change. It is, therefore, important to conceive of content as a process, one which is changing, dynamic and flowing. Conversely, it is at the same time important to not gloss over the fact that content is not only flow and not only constantly changing, but instead possess a great deal of inertia (Mitchell, 2008).

To me, the crucial idea here is that ideologies of nature are (re)articulated, which is to say that textbooks (via the content) express and utter ideology (ideas, conceptions, beliefs of nature) within, and as part of, a historical context; that is, articulations are "context-specific" (Barker, 2012: 9; see also, Slack, 1996; Knutsson, 2011: 100; see also Olausson, 1994). An emphasis on context suggests that ideologies of nature are not entirely specific to textbooks, i.e., the textbooks themselves have not created and advanced ideologies of nature. A critique of ideology, therefore, is not primarily geared towards the textbooks but the common sense of a specific society; that is, the society that creates and uses ideology and the society the textbooks are born and developed within. As ideology is "context-specific" and rooted in society, it becomes possible to probe how ideology works, functions, and has certain effects. On a different but related point, I share and remain sympathetic to the concerns

[27] This point, that articulations must be produced and maintained, is important since it signals that articulations are not given. Rather a lot of work goes into making and sustaining of articulations. I will, however, not develop this point here, but instead return to it in the end of chapter four.

raised in the textbooks from the 1960s and onwards. This, however, does not preclude a critical analysis of articulations of ideologies of nature, but again, it is rather about the specific society the textbooks are part of.

Yet, so far we have used the term context without any further precision. Context is surely an elusive term. "[I]t may be unwise…" Burke (2002: 174; original emphasis) argues, "to expect too much precision from the term *context*, to make it take more weight that it can bear". While it may lack precision, we need, Burke (2002) claims, to think about *contexts* rather than *context*. Contexts are not given but (re)constructed and they may be linguistic, literary, cultural, political, social, material and spatial. "There is", Burke (2002: 175) writes, "no one correct context". However, we can first talk about the "textual level", which refers to describing the text, the analysis of ideas, its genre, and its form and purposes. Secondly, the historical and contemporary "intellectual context", which includes the textbooks' relation to other texts, or the relation between the ideas expressed in textbooks and ideas expressed in other texts (implicitly and explicitly). And thirdly, the "socioeconomic context" – or perhaps simply the broader context – which includes the kind of society we are dealing with, its conflicts and its division of classes, or the social, cultural and political contexts within which ideology is part of (Olausson, 1994: 31; Lagerqvist, 2011: 58).

These different contexts can be viewed as articulated, or perhaps "layered" and "interwoven" (Olausson, 1994: 31; Knutsson, 2011: 100). But contexts as articulated may also be extended to include the above mentioned three analytical levels (as they are taken "as one whole"), and following from that, the relationship between ideologies of nature and the production of nature. Furthermore, although the shifting histories of Sweden are crucial, it is also necessary to recognize wider contexts within which Sweden was part of.

Much of what I have been dealing with here constitutes an ideology critique. In their discussion of ideology critique, Johansson Wilén et al. (2021: 304; see also, Liedman, 1989) describes four interrelated corners which are divided between a positive (neutral) and a negative conception of ideology (see chapter three); that is, depending on the analysis, one oscillates between the corners, but one is emphasized more at the expense of others. I will not account for all details but rather point to those aspects that are important for my purposes. From a positive conception, an ideology critique put ideas and beliefs at the centre, contexts are used in the analysis and the origins, effects and functions of ideas and beliefs are emphasized. Ideology is here closely tied to a particular world-view, and considered as a necessary and meaning-creating phenomenon. By turning to the negative conception, it deals with how ideology distorts, deceives, limits, inverts or excludes, and with how social power relations are inverted by political-economic processes.

In order to provide a historical account of how ideologies of nature have been articulated and transformed, I have relied on curriculum theory developed by Englund (1986), a theory of ideology (which incorporates a neutral

and negative conception), and the production of nature thesis and (its relationship to) the ideology of nature. In what follows, we will start by detailing the argument advanced by Englund.

PART II

The education-nature dialectic

Chapter 3 – Education – and Ideology
Chapter 4 – Ideology – and Nature

Chapter 3 – Education – and ideology

> The purpose of theorizing is…to enable us to grasp, understand, and explain – to produce more adequate knowledge of – the historical world and its processes; and thereby to inform our practice so that we may transform it (Hall, 1988: 36).

Examining the historical articulations and transformation of ideologies of nature in geography textbooks requires a curriculum theory which, on the one hand, is analytically sensitive to the dialectic of stability (continuity) and change, and on the other hand, to content, or how ideology is articulated, imbued and ascribed within that content. I will argue that Englund (1986, 1988, 1990, 1997, 2006; see also Östman, 1995; Hultin, 2006; Molin, 2006; Hultén, 2008; Knutsson, 2011; Bengtsson, 2013) – by maintaining a socially and historically based perspective on content and by bringing forth a 'conflict perspective' – offered such a curriculum theory. Although not specifically referring to the dialectic of stability and change, there is such an understanding flowing from his argument which acknowledges the reproductive function of education, and at the same time, the changing nature of education.

In Sweden, Englund constitutes one of the most important theorists of curriculum studies, and his work on curriculum theory is foundational for any understanding of the relationship between education and society in general, and the curriculum and ideology in particular. However, Englund did not advance his arguments in a vacuum nor are the arguments unassailable. Rather they need to be understood within the intellectual and political context within which they were born, as well as developed and extended, particularly in relation to ideology itself in order to fully grasp how geography textbooks have articulated ideologies of nature historically.

Therefore, this chapter will focus on two things. First it will examine the advantages and limitations of Englund's work by placing it both within the larger development of educational theory, and in turn the development of curriculum theory, especially within a Swedish context. Here, I will suggest that his argument about how the curriculum operates in "field of force" is significant. Secondly, since ideology constitutes a crucial concept in this thesis, it will pay specific attention to and problematize Englund's theory of ideology in order to sharpen and recuperate the 'critical edge' of ideology. As such, I argue that the theory of ideology needs to be renovated if it is to have the

analytical force necessary for interrogating the complexities of ideologies of nature in geography textbooks.

In order to fully appreciate Englund's argument – where it came from and how it developed – we need to take a step back and critically review a debate within educational theory prior to the mid 1980s. This debate was not directly linked to curriculum studies but became important in various ways. This debate was what Hall (1981a: 23; original emphasis) referred to as the "*reproduction* paradigm". An adequate starting point, then, is to provide an understanding of theories of reproduction.

Reproduction in education

Although a diverse field, theories of reproduction were a response to idealist and functionalist approaches in educational theory as well as liberal and conservative understandings of education. Such approaches usually depicted education as something neutral, as a vehicle for social mobility, individual development, and for empowering students. The effort was to understand the way in which education contribute to the reproduction of capitalist society; for example, how schools work to reproduce dominant ideologies, knowledges and a social division labour (Giroux, 1983b: 257-258).

To illustrate this, we can briefly turn to the "correspondence theory" by Bowles & Gintis (2011 [1976]; see Apple, 1982; Pinar et al., 1995; Giroux, 1981, 1983ab); that is, there was (and is) a "correspondence" between capitalism, the division of labour and the educational system (Au & Apple, 2009; Apple, 1982). There is, then, a "constant fit" between economic relations of production and education and it is the very 'form' or 'process' of education that warrants a direct relationship between education and the economy. Education is characterized by a "hierarchy of authority and control" and competition instead of cooperation, which is similar to the division of labour within a capitalist society (Gintis & Bowles, 1981: 46).

In many ways, the contribution by Bowles & Gintis was important since it revealed connections between education and capitalism. However, not only was the content and what occurs *within* the school neglected – something which overshadowed, for example, the role of culture, ideology, consciousness, human agency, teachers, resistance and conflict (Apple, 1982; Au & Apple, 2009; see also Apple, 2004; Giroux, 1983ab; Sharp, 1980) –, but what Gintis & Bowles (1981: 47; original emphasis) describes as an "inherently *harmonious* link between" education and the economy, has led to critique because this causal relationship was formulated in a unidirectional fashion so that the economic base could explain features of the superstructure (Au & Apple, 2009: 83).

As many educational theorists turned to the concept of 'hegemony' (Gramsci, 1971) and 'relative autonomy' (Althusser, 1971)[28], education, ideology, culture and so forth was not understood as totally 'determined' by economic production, and with that, they were valued on their own terms (Au, 2006; Au & Apple, 2009). As Apple (1980) points out, how to conceive of 'determination' has been one of the problems for conceiving the relationship between education and reproduction. In contrast to a mechanistic and causal form of determinism, determination (or to determine) – Williams (1977) argued – should be understood as "setting limits" and "exerting pressures" (which themselves are historically constituted). In other words, pressures and limits change over time, become re-established and can be overcome and overthrown.

Williams (1981; see also Apple's [1982: 16] discussing Hall [1977: 71]; Hall, 1981a) further provided some thoughts about the 'reproduction paradigm' by arguing that educational systems change both internally and in relation to other systems (political, economic). The pressing argument Williams (1981: 186; emphasis added) made was that "The metaphor of 'reproduction', if pushed too hard, can obscure these crucial processes of relative autonomy and *of change*…". Following Williams, with such an analytical inattention to change, we certainly risk losing sight of important historical *transformations* of ideology. That is, the notion of 'reproduction' might entail not necessarily an ahistorical view of the curriculum, but one that does not fully appreciate the dialectic of stability and change.

Englund (1986) also reacted to the focus on 'reproduction' by challenging the assumption whether the educational system should be "regarded *exclusively* as an institution for reproducing the existing social order" (1986: 69; original emphasis). In a critique directed at various approaches within the 'reproduction paradigm', Englund suggested that there was a lack of problematization as none of the approaches

> …problematizes the manifestations of social tension in the struggle for state power (the state as a relation) or the *dual nature* of education…[Research grounded in] certain social theory-based assumptions about the mechanisms of reproduction etc. tends to neglect conflict within the state and the dual functions of education (the tension between its socially integrative and progressive functions). The emphasis has come to be placed on the reproductive function of education and the role of the state has often been left unproblematical (Englund, 1986: 70, emphasis added).

That is to say, Englund raised concerns about the heavy focus on "the reproductive function of education" since this "overshadowed any interest in the possible meaning of change and in content as a change factor" (Englund,

[28] As we will return to Gramsci and Althusser later on, it is not necessary to discuss their influence here.

1986: 70). This is not to suggest that the focus on reproduction should be discarded. Rather there is a need to understand school knowledge (as it articulates ideology) as "one element in the reproduction of a specific society" (Englund, 1986: 38). Following this lead, the present study remains concerned with "the role that *school geography* plays in… reproduction" (Morgan, 2003: 444, emphasis added).[29] Hence, the goal is to understand how certain ideologies (of nature) are implicated in, at work, shaped by, and articulated in relation to – and thus not mechanistically determined by – specific historically changing conditions and forces.

The development of (Swedish) curriculum theory

So far, specific arguments about the curriculum have been in the background. Nevertheless, what was discussed in the previous section has been important to curriculum theory since it parallels the development of curriculum theory in some ways. This section starts with a description of the historical development of Swedish curriculum theory. This development is not merely provided to give a context, it will also be used as a way to separate important theoretical and methodological shifts and to understand how Englund's argument fits within this context. While outlining the different turns of curriculum theory, it is not my intention to suggest a continual improvement or an increasing sophistication over time. Rather, the different approaches can shed light on different matters and none of them are without limitations.

Curriculum theory has developed in different stages or phases historically and these are grounded within different sociologies of education which view content in quite specific ways (Englund, 1997). In such a way, we can speak of four traditions:

1. 1960s: Urban Dahllöf's early theory of "frame-factors". I will only briefly mention this tradition since it connects to the second tradition.

2. 1970s: The new sociology of education emphasising the school's reproductive function. This field draws on the work of, for example, sociologists such as Bourdieu, Passeron and Bernstein and is identified with curriculum theorists like Lundgren and Kallós.

[29] Morgan (2003) here draws on the work of Huckle (1985: 293) and his discussion that school geography (potentially) ensures reproduction on a more general level by sustaining a "hidden curriculum" (cf. Jackson, 1990 [1968]; Broady, 2007), and by more specific measures which is "related to the overt curriculum and theoretical ideology".

3. 1970-1980s: A dynamic and conflictual curriculum theory emphasising the social and historical determinants of curricular content most prominently associated with Englund, (1986, 1988, 1990, 1997, 2006). It had a clearer focus on curriculum change and was more clearly interested in ideology than previous theories.

4. 1990s onwards: A communicative, linguistic and pragmatist turn with, for example, a focus on language and discourse.

Stage 1

Dahllöf (1967, 1999; see Englund, 1990, 1997, 2006; Broady, 1999; Hultin, 2006) developed the so-called "frame-factor theory", which was an approach that shed light on the relationship between the external organizational framework of education, the internal processes of teaching and the result. One of the advantages frame-factor theory had was that it shifted the attention away from 'how' to measure educational outcomes, to 'why' there are different outcomes. The "frame-factors" that were crucial according to Dahllöf were physical frames such as the built environment, number of students, density of teachers, and "time-frames" such as the given amount of time designated to teach a particular content (Hultin, 2006: 32; Knutsson, 2011). As such, frame-factor theory took content for granted (Knutsson, 2011: 78-79) and it was not concerned with the curriculum. Yet, frame factor theory was later on expanded to include questions concerning the curriculum (Hultin, 2006).

Stage 2

The late 1960s and early 1970s saw the rise of the "new sociology of education" and what might be referred to as "critical curriculum studies" (see e.g., Young, 1971; Apple, 2004 [1979]; Sharp, 1980). With the second tradition, the school came into a new light as a "reproductive institution, which exercised social control and mediated the ideology of the ruling classes". (Knutsson, 2011: 79; see also, Englund, 1990, 2006).

Within this second tradition, the concepts of reproduction, legitimacy and social control were crucial. Concerning curriculum theory, the work of Kallós and Lundgren stands out as they revisited and reworked the frame factor theory; that is, frame factor theory developed "into a *curriculum* theory" (Englund, 1997: 276; original emphasis). As Englund (1997: 276) notes, there was a concern to comprehend the social and historical determinants of the curriculum and one key question centred on how the "content of a curriculum was built and legitimized". In such a way, research was occupied with analysing "how the teaching and learning processes – via a certain content (that was not important in itself) – differentiated among pupils" (ibid).

In curriculum theory, the concept of curriculum codes was emphasized to highlight the underlying principles legitimizing educational objectives, content and methods (Knutsson, 2011: 79). Lundgren (1983: 22; original emphasis) argued that "Behind every syllabus there are certain fundamental principles – a certain *curriculum code*".[30] The code, Lundgren (1983: 22; see Englund, 1986: 100) suggested "is shaped both historically and currently by existing material and cultural conditions and by beliefs about education in various political, administrative, and educational processes".

The codes were identified in a historical perspective and Lundgren (1983) analysed how four distinct curriculum codes had developed and changed throughout history: a classical, realistic, moral and rational code.[31] These codes – how they were introduced and changed – were dependent on, and internal to, the shift from a feudal- to a capitalist mode of production as well as scientific and economic development, industrialism and the rise of the bourgeoise (Englund, 1986: 101).

Within this second tradition, curriculum content became more analytically and theoretically interesting for the role it played in processes of differentiation and selection, but this tradition – Englund argues – was never "primarily interested in the content…as a scientifically important phenomenon" since content was treated from a perspective of social control and/or from a perspective of cultural reproduction (Englund, 1988: 76). By being concerned with structural inequalities, reproductive structures and curriculum codes, analysing empirical similarities regarding aim, content and method was the leading goal of research and this made any deeper inquiry of the content rather redundant (Knutsson, 2011: 79; Englund, 1997).

Stage 3

In reaction to the second tradition, Englund – who represents the third stage of curriculum theory – therefore argued that it

[30] By using the term 'syllabus', Lundgren (1983) here refers to a 'läroplan', i.e., the actual document.

[31] The classical curriculum code emphasized antique culture and classical languages. The realistic curriculum code, which grew stronger in the mid 1800s, was characterized by an emphasis on natural science and a utilitarian ideal. This code was mainly for grammar school (realskola & läroverk). At the same time, the moral curriculum code was introduced for elementary school (folkskola). This code emphasized nationalism and a reverence for religion and country in order to exercise social control through its close relation to the patriarchal state with its objective to transmit a moral ideology to the citizens. Since Sweden had a parallel educational system, students from different classes were subjected to different schools and ultimately different curriculum codes. During the mid 1900s with the introduction of a compulsory school for primary and secondary levels, the rational curriculum code developed. It put emphasis on useful knowledge for both the society and the individual (Wickström, 2008; Wahlström, 2015; Englund, 1986).

> …did not really approach educational content from a didactic perspective that implied an interest in differences and change. Rather, the emphasis was on the grounds on which the complicated process of selection was legitimized, and on the stability of the educational system and its inability to undergo real change as regards its content, owing to its reproductive function (Englund, 1997: 277).

Accordingly, there was a partial reluctance to recognize (differences in) content and curriculum change. Although both the second and third stage views content as socially and historically determined, the latter do not stress the importance of content as either "legitimizing certain conditions" or for "reproducing social control" (Englund, 1997). Rather, Englund (1997: 268) writes, "The construction of school knowledge is seen…as situated in a field of force". Given that this study is rooted in the curriculum theory developed by Englund, we will return to the details of his argument in a moment. For now, it will suffice to notice that content and (historical) change lie at the heart of his analysis. Before returning to Englund's argument, the fourth stage will be accounted for.

Stage 4

In the 1990s, curriculum studies and curriculum theory took a linguistic and communicative turn while perhaps also placing a greater emphasis on educational philosophies (Englund, 2006; see e.g., Hultin, 2006; Almqvist, 2005; Molin, 2006[32]). The focus on language and communication grew out of an awareness regarding "both of the way in which language constitutes our perception of reality, and of the meaning-creating function of communication" (Englund, 2006: 388). While there has been much important research in this tradition, the privileging of linguistics and communication led a to a situation by which scholars turned the focus away from questions of how ideology works through and within the curriculum and focused instead on the role of language, discourse and meaning. This is not to say that the concept of ideology was entirely abolished (Mattlar, 2008; Wickström, 2008), and two studies that focused on nature (within the science curriculum) are Hultén (2008) and Östman (1995). Nonetheless, ideology remains in the backwater and is more used as a backdrop for developing theories of meaning and discourse, which leaves ideology theoretically undeveloped. Before providing a discussion of the concept of ideology – a concept which I think can offer valuable insights to curriculum theory – we will explicitly turn to the advances made by Englund (1986).

[32] By drawing on Englund (1986) and Östman (1995), Molin (2006: 64-66) analysed geographical content from the perspective of different educational philosophies (essentialism, reconstructivism, progressivism and perennialism).

The importance of content and change within curriculum theory

The central contribution by Englund (1986) – who studied the content of citizenship education – was to identify a "civic curriculum code" which was introduced with the school reforms of 1918-1919. This code remained important in defining the curriculum and it would develop and take different forms over time. In contrast to the second tradition, Englund extended the analysis by arguing that "the curriculum constitutes a *field of tension* between different social forces and that the curriculum is formed in an ideological *war of position*" (Knutsson, 2011: 88; original emphasis).[33] By maintaining a socially and historically based approach to educational change, and influenced by Gramsci and Poulantzas, Englund argued that "the school can be, or rather is, both a progressive *and* reproductive institution (Knutsson, 2011: 79, emphasis added; see Englund, 1986). In other words, because of this tension, the content of the curriculum is bound to undergo change.

The analytical shift proposed by Englund was to focus on how a particular content has been, as I would put it, articulated rather than legitimized and how this articulation is a result of a social and ideological struggle. Consequently, it is not enough to merely identify the code since the civic curriculum code is also subjected to change; thus the focus must be directed towards the *inner* workings of the code. While Englund did not use these terms, '*inner* workings' and articulation, he did argue that:

> The overriding theoretical perspective of the third stage is to see education and its content in a field of force ultimately determined by struggling social forces. The ultimate power centre for this struggle is the state…The way in which the educational system manifests how reality is to be conceptualized and school knowledge constructed means that certain power relations are consolidated or transformed. This transmission of ideology is therefore subject to constant shifts as power relations gradually change (Englund, 1997: 278).

By viewing "content within a field of force", Englund (1986; see Knutsson, 2011: 83; Wickström, 2008: 53) argued that there have been three different and competing "conceptions" within the code, that is, the civic curriculum code has been shaped and formed by three competing conceptions, historically. First, the patriarchal conception (1919-1950s) characterized by a conservative ideology and an idealist epistemology which entailed portraying the nation and its industry in a positive light and emphasizing the common interests between employers and workers. Secondly, the scientific-rational

[33] Social forces, according to Englund (1986: 151), participate in the struggle for state power and hegemony and refers to classes, fractions and social categories (groups) which are organized into political parties, interest groups and the like. The concept of 'war of position' broadly refers to the shifting equilibrium between various social forces and their struggle over meanings, knowledges and values.

conception (1940-onwards) characterized by a liberal ideology and a positivist epistemology, which is similar to Lundgren's rational code, but expresses the view that science was important to solve societal problems. And thirdly, the democratic conception (from the 1960s) – or rather the emergence of such a conception since it never dethroned the scientific-rational conception. This conception was characterized by a socialist ideology and a social constructivist epistemology. In opposition to a scientific-rational understanding of society, this conception underlined questions concerning equality and power, the school as an important actor for social transformation and conflict rather than consensus.

These changes were revealed through a careful historical analysis. As Knutsson rightly claims, "One of the most important contributions" by Englund was to bring "educational *content* to the fore…thereby illuminat[ing] some critical blind spots of previous research" (2011: 82) as well as "bringing historical *change* to the centre of the analysis" (2011: 89; original emphasis). By an extensive historical analysis, Englund demonstrated that content had changed significantly, and by investigating the changes over time, content can be understood "as historically and socially embedded" (Knutsson, 2011: 82). Another way of phrasing this is to understand school knowledge as socially and historically 'determined', and as the expression of specific power relations. The way in which Englund addressed content and (historical) change within the curriculum is perhaps the key contribution since it demonstrates that school subjects cannot be understood as a thing or as non-evolving entities, but rather as constantly transformed and renegotiated (Lövheim, 2006). Thus, the importance of Englund's development is that he provides a dynamic and historically sensitive curriculum theory with regard to curriculum content.

In the present study, I remain inspired by Englund's conceptualization of the curriculum for examining historical articulations of ideologies of nature. But, it is worth emphasizing that there are notable differences as well as similarities between our inquiries. For example, I do not develop the concept of "codes", and neither can ideologies of nature be equated with Englund's (1986) notion of "conceptions". In turn, while Englund argues for a focus on the ideological "struggle" between social forces and the "transmission" of ideology (primarily via the state), it is also a matter of how the content articulates ideology. This at least indicates different points of departure, and the problem – at least to a certain extent – is the concepts we use.

Despite these differences, our analyses are shaped by a commitment to pay close attention to content and its historical transformations. The key concept here is "field of force" because it captures and forces us to conceive of content as set within the dialectic between stability and change. By grounding content within this field of force, and with an emphasis on *ideologies* of nature, there are different historical *articulations* of ideology – conceptions in Englund's terms – which are socially and historically constituted. In this sense, despite relying on different concepts, our ambitions and thinking about the curriculum

do not diverge too greatly. There are, however, differences concerning our understandings of the concept of ideology.

While Englund (1986) further developed his argument through a conceptual apparatus grounded in the writings of Gramsci (1971) and Poulantzas (1974, 1978) by which hegemony, the state, the state apparatus, social forces, intellectuals and ideology constitute the key concepts, the next section addresses the key concept of ideology. Specifically, the objective is to develop a theory of ideology adequate to the analysis of the content in geography textbooks.

Towards a theory of ideology – neutral, critical, or both?

> The *problem* of ideology is to give an account, within a materialist theory, of how social ideas arise. We need to understand what their role is in a particular social formation, so as to inform the struggle to change society and open the road towards a socialist transformation of society (Hall, 1983: 59; original emphasis).

> That one cannot find agreement about the marxist concept of ideology is hardly surprising or new anymore. The disagreements affect almost every aspect of the concept: its content, its effectivity and its epistemological status which is manifest in a range of questions. Is ideology subjective and ideal (created by and existing in the minds of individuals) or objective and material (existing in material apparatuses and its practices)? Is ideology a determined and epiphenomenal superstructure or an autonomous discourse with its own effectivity capable of constituting subjects? Is ideology negative and critical (a distortion or inversion) or neutral (the articulated discourse of a class, fraction or party)? Do ideological elements posses an inherent class character or are they neutral and capable of being articulated to various classes? (Larrain, 1996: 46).[34]

Larrain's diagnosis leads right into the very heart of the complexity that surrounds the concept of ideology. Yet, as he maintains, while those questions haunt the theoretical debate on ideology and are nowhere near to being resolved, the search for *the* Marxist concept of ideology is a cul de sac. We have to recognize that there have been, are, and will be different schools of thought within Marxism which all have developed different concepts of ideology. The complexity of the concept is partly related to its long history and the various ways in which it has been understood. Instead of providing an entire history of the concept of ideology (see e.g., Larrain, 1979; Eagleton, 2007; Rehmann, 2013 for attempts at such accounts), I will here – since ideology is a

[34] This is a reprinted version of an essay first printed in *Theory, Culture & Society*, 8 (1991), 1-28.

cornerstone of this thesis – predominantly provide a discussion of the meaning and implications of a neutral versus a negative/critical conception of ideology. In order to delimit the discussion and to set out some definitions, Williams (1977: 55) provided three common versions of ideology which often are used within the Marxist tradition.

First, ideology is a system of beliefs (or ideas) characteristic of a specific class or group; secondly, it refers to a system of illusory beliefs (distortions), false ideas or even false consciousness; and thirdly, ideology entails the broader process concerning the production of meaning. It is mainly the first and second definition of ideology that will be discussed here; the first definition can be referred to as a neutral conception of ideology, and the second definition can be understood as a critical or negative conception of ideology.

The aim of the section is to bring together a neutral concept of ideology – as Englund conceived of ideology – and a critical or negative concept of ideology as Larrain (1979, 1982, 1983, 1996) and Marx understood ideology. Both offer adequate and useful (albeit different) ways of thinking about ideology but ultimately these two conceptions of ideology can, and should, complement each other.[35] I will start by critically assessing Englund's conception of ideology and suggest that it is limiting since it centres only on a neutral conception of ideology. In the end, it will be argued that Smith's (1990) understanding of ideology provides a 'middle-ground' between a neutral and a negative/critical concept of ideology. As such, it offers a valuable analytical and political source for grappling with and critiquing articulations of ideologies (of nature) in geography textbooks.[36]

A critique of Althusser

In order to more fully examine Englund's (1986) deployment of ideology, we need to first see how he addressed the work of Althusser. Englund (1986: 146) maintains that Althusser was above all else concerned with "the reproduction of the…relations of (capitalist) production…[and how] schools…contribute to the reproduction of existing (capitalist) relations of production by reproducing labour 'ideologically'". With such an understanding of ideology, Englund sees within Althusser's work a "one-sided reproduction metaphor". By contrast, Englund (1986: 146) locates "the question of the role of ideology and

[35] As Williams (1977) noted, a neutral and critical conception of ideology can be combined. They are not necessarily contradictory. Furthermore, the distinction between a neutral and critical/negative conception of ideology is made by Larrain (1979, 1983, 1996). In their discussion of Larrain's (1983) work, Purvis & Hunt (1993: 477) underline that Marx did not only rely on a critical/negative conception, but also a "positive" conception which emphasized the "construction of social consciousness". According to Purvis & Hunt, the point by Larrain is that the positive or neutral conception has become very influential within Marxist theories of ideology, although "the negative conception is the one which provides the most critical edge to Marx's thought" (1993: 477).

[36] In chapter four, we will come back to "the ideology of nature".

the ideological state apparatuses in a perspective of power and change: how are ideological power relations established and changed? – i.e. a Gramscian question", which mirrors the critique against the reproduction paradigm and the second tradition of curriculum theory, and in turn, paved the way for his conflictual perspective of the curriculum. Situating ideology within a perspective of change and emphasizing the more dynamic question of how ideology is established and changed (field of force) is certainly important, both in order to break with one-sided reproduction metaphors and in order to examine how ideology *works* in textbooks, historically.

Advancing a neutral conception of ideology

As a point of departure Englund (1986) relies on Poulantzas' (1974) definition of ideology, which is a good example of the neutral conception of ideology: "Ideology does not only belong to the realm of ideas; it is not a 'conceptual system' in the strict sense of the term. As Gramsci firmly stated, it extends to the mores, customs, and 'way of life' of the agents in a social formation. It is concretized in the *practices* of a social formation" (Poulantzas, 1974: 301; cited in Englund, 1986: 147).[37] Poulantzas argued that ideology contains both ideas and practices and, indeed, it is easy to agree with such an understanding of ideology.

Furthermore, according to Englund (1986) ideology refers "to that aspect of the human condition under which human beings live their lives as conscious actors in a world that makes sense to them to varying degrees. Ideology is the medium through which this consciousness and meaningfulness operate"

[37] Englund (1986) also, via the work of Therborn (1978: 171; 1980: 77), draws on Althusser's notion of interpellation. Englund (1986: 147; emphasis added) argues that interpellation "entails a process of ideological *formation, which tells individuals* what exists, who they are, how the world is, and how they are related to the world". Furthermore, it incorporates "an ideology concerning what is possible and what is right and wrong, good and bad". Even more so, "The interpellation of *ideology gives individuals* a sense of identity and makes them aware of what is real and true; structures and normalizes their desires; and shapes their sense of mutability and of the consequences of change". What we find here is the legacy of Althusser's structural Marxism. The problem with such thinking is that subjects become objects and that 'human agency' is reduced to a minimum. This has been termed Althusser's antihumanism, and as Smith (1985: 649) accurately put it: "the self, the human subject, does not so much constitute but is constituted by the structural, systemic relations in which it finds itself. It is the belief not that [humans] make history but that history makes [humans] or that history makes itself". Furthermore, as Mitchell argues, interpellation stipulates that "people are hailed into preestablished ideological and social places, places constructed by the 'structure'" and therefore "Men and women were creatures of systems – systems of *thought* – and thus merely bearers of social relations, not shapers of them, not resisters against them, not people *experiencing*, and therefore transforming social life" (Mitchell, 2004: 59; original emphasis). Accordingly, as Mitchell contends, this understanding harbours a problematic idealism. While I accept that ideology obviously has to 'address us' to function, I'm not convinced about the notion of interpellation because it – as both Smith and Mitchell underline – makes it impossible for humans to think and act. Furthermore, it mystifies the 'subjects' articulating ideology. In relation to the present study, therefore, the concept of articulation is used to think about ideology.

(Therborn, 1980: 2; cited in Englund, 1986: 148). Such an understanding of ideology, Englund argues, moves away from what he calls "dominant Marxist ideological traditions", traditions which equate ideology with false consciousness and objective class interests. These notions are indeed problematic since conceptualizing ideology in such a way entails that there is in fact 'true' objective interests of classes, and in turn, that it is possible to draw a strict separation between science and ideology.

Yet, this does not mean that it becomes possible to disregard the material determination of ideology: "Ideologies are sustained by social forces of a more or less marked class nature…[S]ocial forces…have no absolute objective interests…and their ideologies are moulded and changed in the course of history" (Englund, 1986: 148). This in turn leads Englund to argue for a concept of ideology which is separated from false consciousness, class ideology or objective class interests:

> [Ideology]…is seen as a unity of ideas and materialized processes linked to certain total or exclusive world-views and impinging to a greater or lesser extent on human thought and practices…I view ideology as a more or less well developed world-view involving assumptions about the individual, society, and the relationship between the two, as well as practices based on this world-view. This means that every ideology entails a kind of 'common sense' element which, translated into practice, results in a certain kind of action (Englund, 1986: 148).

After all, perhaps by reducing the complexity of ideology too much, Englund seem to suggest that ideology (as both ideas and practice) is a "world-view" about the individual-society relation, which is supported and/or sustained by particular social forces. Needless to say, such an understanding of ideology works well with the kind of analysis Englund was conducting. "In historical perspective", Englund (1986) continues,

> the aim of different political ideologies [e.g., conservatism]…has, after all, been to become dominant and in the long run to achieve hegemony [and thus conceived as common sense]…The struggle between different political ideologies…the striving of different ideologies for hegemony – forms a basis for the concrete exercise of power by state apparatuses, including schools, and hence…for the development of human consciousness (Englund, 1986: 149-150).[38]

[38] As one may have noted, Englund conceived of the state as a particularly important actor. By drawing on the work of Poulantzas (1978: 128), Englund (1986: 153) claimed that "ideology is politically defined through the struggle for state power…ideology, is thus a manifestation of a relationship which is always fluid, a state of equilibrium dependent on the relative strength of different social forces" (Englund, 1986: 153). In short, although I remain sympathetic to this argument, one runs the risk of granting the state with too much power since ideologies may also be produced by processes beyond the control of the state. In other words, the state can be *active*, but also *passive* with creating common sense.

As I understand Englund's argument, he is concerned with understanding the battle between different political ideologies, which may become dominant and eventually hegemonic. The shortcoming of such a conception of ideology is that it advances a thoroughly 'neutral' conception of ideology. By contrast, I would argue that it is necessary to reveal how ideology works as a distortion, or works to distort important aspects of the social reality, and therefore, it is important to resuscitate the 'critical edge' of ideology. This is forgotten in Englund's (1986: 150-151) approach since it was made clear that "My analysis…is not a history, analysis, or critique of ideology…I intend to examine how the main forms of different political ideologies have been supported and sustained by more or less clearly discernible social forces". The present inquiry, however, puts the history, analysis, and a critique of ideology at the centre, and this forces us to take the negative/critical conception of ideology more seriously.

The meaning of a neutral and critical conception of ideology

In order to understand the implications of a neutral versus a negative conception of ideology, we must deepen the discussion. On the one hand, a neutral conception of ideology denotes those (political) ideas, discourses and world-views "which are articulated around some principles related to the interests of some social group, party or class" while furthermore emphasizing that humans acquire consciousness of social reality through ideas and "link[ing] those ideas to some class interests or to some articulating political principle" (Larrain, 1996: 53). As such, one can talk of multiple ideologies, for example, bourgeois ideology, proletarian ideology (as Lenin did), liberal ideology or nationalist ideology (ibid). Here we can find elements that are central to Englund's conception of ideology, i.e., political ideas and 'world-views', which are connected to specific social forces.

On the other hand, a negative/critical conception of ideology means a "distorted thought", that is, a "negative concept of ideology is inherently capable of discriminating between adequate and inadequate ideas, it passes epistemological judgement on thought, whatever its class origin or the expressed intention of its supporters. *An ideological idea is a distorted idea*" (Larrain, 1996: 53; emphasis added). To have such a conception of ideology as a weapon in our intellectual arsenal strikes me as crucial and we will come back to this negative conception of ideology and the notion of distortion in a moment. Perhaps to complicate things, the neutral concept of ideology can pass judgement on ideologies, but the judgement in that case must be made from the perspective of a different ideology. Within a Leninist tradition of ideology, for example, one would criticize bourgeois ideology from the perspective of a proletarian ideology. Yet, the critique is against its 'bourgeois' character and not its 'ideological' character; that is, ideology is separated from and not connected to distortion. In sum, then, for the neutral concept of ideology, "the

'ideological' is the quality of any thought or idea that serves or articulates group or class interests, whatever they may be". For the negative/critical concept of ideology, "the 'ideological' is the attribute of any thought or idea which distorts or inverts reality" (Larrain, 1996: 53).

Combining a neutral and critical conception of ideology

At stake here, then, is the status of the critical/negative conception of ideology in the theory of ideology. I'm not suggesting that we need to abandon a neutral conception; rather such a concept offers great value and is important to any theory of ideology, but it must be supplemented by a negative/critical conception of ideology. Here, therefore, I rely on and advance Smith's understanding of ideology: "an inverted, truncated and distorted reflection of reality" (Lefebvre, 1968: 64), but one in which

> Ideology is not simply a set of wrong ideas but a set of ideas rooted in practical experience, albeit the practical experience of a given social class which sees reality from its own perspective, and therefore only in part. Although in this way a partial reflection of reality, the class attempts to universalize its own perception of the world (Smith, 1990: 15).

Smith's definition of ideology outlines how ideology *works* and why it matters, and it incorporates both a neutral and a negative/critical conception of ideology; that is, it posits that we should not restrict ourselves to "what makes good sense in an ideology", but attempt "to find out what is wrong and expose it" (Larrain, 1996: 60). This, however, needs further explanation.

Although it is not entirely satisfactory to distinguish between a neutral and negative/critical conception of ideology in Smith's understanding, we will first address the more neutral conception, what Larrain described as a 'world-view' related to the interests of a particular class (or group). What I take from Smith's argument is not merely the connection between a set of ideas and practice[39], but specifically how any given class (or social group) sees "reality from its own perspective", and thus "only in part". Thus, the world looks strikingly different from where one is standing, and as such, we see and make sense of the world through different windows and from different social positions. Just because reality is viewed from a specific perspective, reality can only be understood "in part", and therefore it is a partial reflection of reality or what might be referred to as a partial truth.

[39] Practice should be understood as "the unity of consciousness and reality" (Larrain, 1979: 49). An emphasis on practice suggests that it is untenable to think about ideology without paying attention to the material world – "the spaces that give…ideology currency and serve as its referent" (Mitchell, 1996: 5).

By *universalizing* partial reflections of reality, we must turn to the different ways through which ideology *operates*, i.e., "modes of operation"; that is, to legitimation, and specifically the strategy of universalization. Universalization is the strategy by which the time and place-specific ideas of some are represented and projected (or perhaps made into) as the ideas of all humanity (Thompson, 1990: 60-61; Eagleton, 2007: 56). Furthermore, from this it follows that ideology operates as integral to the dynamics of hegemony. Classes and social groups actively manufacture consent and an acceptance to their own ideas and reflections of reality – thereby forming common sense – something which is done, for instance, through the content of the textbooks. Even more so, being able to universalize involves certain power relations; the class and/or social group that controls and maintains power over the curriculum can exercise the means to universalize partial reflections of reality.

By turning more explicitly to the negative/critical side of the concept of ideology, the argument of a partial – as well as an inverted, truncated and distorted – reflection of reality implies a form of distortion. I take these as meaning not "false consciousness"[40] in the sense people are duped by the dominant classes – "temporarily ensnared against their material interests by a false structure of illusions" (Larrain, 1996: 51) – and at the same time, it is not a matter of a strict dichotomy between false and true (or wrong and correct ideas). Maintaining such a strict dichotomy between false and true makes little sense. Instead, Hall's (1988: 46; see Larrain, 1996: 51) argument is opposite: "By true I do not mean universally correct as a law of the universe but 'makes good sense'". This connects to the need for ideology to win support and acceptance, and thus to be perceived as 'natural'. To elaborate further on this matter, I think Jackson (1989) captures this problematic quite well by arguing that:

> …[I]t is still possible to use the term in a critical sense without implicitly contrasting 'ideology' with the 'truth' of an alternative (Marxist) science. Any statement of belief or any social practice can be regarded as 'ideological' insofar as it fails to make clear the interests that it represents. Ideologies offer decontextualized readings of social situations which are partial in both senses of that term (biased as well as incomplete). It follows that there is no single 'true' representation but many representations, each bearing its own ideological burden and each serving particular interests (Jackson, 1989: 52).

[40] Regarding the notion of 'false consciousness', Hall (1988: 44) made an important critique as to why it has been (and is) a problematic concept: "It assumes an empiricist relation of the subject to knowledge, namely, that the real world indelibly imprints its meanings and interests directly into our consciousness. We have only to look to discover its truths. And if we cannot see them, then it must be because there is a 'cloud of unknowing' that obscures the unilateral truth of the real".

Jackson – who offered an understanding of ideology not totally different from Smith – also sought to retain a negative conception of ideology and to escape the notion of false consciousness. In this passage, he maintains that ideology (as any statement of belief, social practice) is about *obscuring* the social interests it serves. It does so by "offering decontextualized readings" (reality viewed from a certain perspective) and, consequently, ideologies are *partial*: that is, both biased and incomplete. By beginning from such an understanding of a negative/critical conception of ideology – rather than false consciousness – it should be clear that ideology critique is not about unveiling or revealing Absolute Truth (or the full truth) from a more enlightened perspective.

Following this lead, in terms of conceptualizing the idea of a distortion, Hall (1983: 67-73; see Larrain, 1996: 49) argued – following Marx – that it is better to understand distortion as processes of "eternalization" and "naturalization", and in the sense of "one-sidedness", "obscuring", and "concealment". This is, I think, how the idea of distortion is to be understood, and by working from such an understanding, it becomes possible to pass epistemological judgement on thought. This is again not about stating that something is false (or wrong), but rather recognizing and grasping the ways in which reality is viewed "only in part", and how ideology *operates*.

A second mode of operation, then, is the process of reification which makes social and historical phenomena appear "natural" and "eternal". The strategy of naturalization, accordingly, is when such phenomena appear as a product of nature, and eternalization when such phenomena "are deprived of their historical character"; that is, they are perceived as permanent and unchanging (Thompson, 1990: 66).

Yet, we should emphasize two things. First, although not synonymous, naturalization is connected to universalization "since what is felt to be universal is often thought to be natural". Secondly, as with universalization (and eternalization), naturalization too "is part of the *dehistoricizing* thrust of ideology, its tacit denial that ideas and beliefs are specific to a particular time, place and social group" (Eagleton, 2007: 59; original emphasis) Such strategies may, for example, make certain beliefs seem "self-evident", "natural", "spontaneous", "unalterable", and "inevitable" (Eagleton, 2007: 5, 58-59) – common sense indeed – and they can, but need not necessarily to, intersect with other strategies such as obscuring and concealing important aspects of reality.

In sum, the neutral conception of ideology is indeed useful, a definition also mirrored in Smith's definition; nonetheless, it is paramount to complement it by incorporating the idea of distortion. Certainly, there are many pitfalls here by engaging in the practice of judging adequate from inadequate ideas, 'true' or 'correct' knowledge from 'false' or 'incorrect' knowledge and the like. But, it only becomes a pitfall if we maintain these strict dichotomies. In this study, therefore, I conceive of ideology as a set of partial and distorted ideas (for example ideas of nature in geography textbooks) that have been, or attempt to become, universalized. That is, they are not entirely wrong but

presented as eternal and natural, or they might be one-sided, concealing and obscuring. By doing so, ideology *limits* how we conceive of reality.

Before turning to the concept of common sense, there is also a need to recognize that not all ideas are necessarily ideological (Larrain, 1996). Ideas can be distinguished from ideology in the following ways. First, ideology entails a certain level of partiality and distortedness. Secondly, it is about having *power* to universalize ideas. And thirdly, ideologies are articulated for different reasons, have specific effects and serve certain interests. As such, that ideologies become deployed in a context is important. Eagleton (2007: 9) captures this by arguing that "ideology is a matter of 'discourse' rather than 'language'. It concerns the actual uses of language", and therefore, "ideology is a function of the relation of an utterance to its social context".

The notion of common sense

Common sense is a component of ideology, and important to the degree that ideology, as recently mentioned, involves strategies of naturalization, eternalization and universalization. While I cannot provide a full account of the concept, common sense derives from the work of Gramsci (1971) and according to Hall & O'Shea (2013: 8; see also Crehan, 2011, 2016), it refers to a "form of 'everyday thinking' which offers us frameworks of meaning with which to make sense of the world". Furthermore, it constitutes "popular, easily-available knowledge which contains no complicated ideas, requires no sophisticated argument and does not depend on deep thought or wide reading". Common sense is intuitive rather than reflective, while also pragmatic and empirical and it appears to be the result of experience.

In many ways, it can be said that common sense is the ideas, beliefs, and knowledge (of nature) which are taken-for granted, or "the folk wisdom of the age" (Hall & O'Shea, 2013: 8), and as Jackson (1989: 51) argues, "Ideology frequently takes the form of 'commonsense' – ideas that are sufficiently 'taken for granted' as to be beyond the realm of rational debate". By stressing that ideology "frequently takes the form of 'commonsense'", it should be recognized that it is not only that ideas, beliefs and knowledges *are* taken-for-granted, but that they are in the *process* of becoming taken-for-granted. In turn, as Clarke (2014: 119) makes clear, we should not think of common sense in the singular.

In Gramsci's mind, common sense "is not critical and coherent but disjointed and episodic", but, as Hall & O'Shea (2013: 9) argue, there is a "logic" to common sense, and it has a history considering that "past ideas and traditions" are incorporated, and that common sense evolves in order to provide "meaning to new developments". In such a way, it is not something fixed and stable but dynamic and transformative. However, Hall & O'Shea also crucially argue that:

> …[Common sense] has a content. It is a compendium of well-tried knowledge, customary beliefs, wise sayings, popular nostrums and prejudices, some…seem eminently sensible, others wildly inaccurate. Its virtue is that it is obvious. Its watchword is, 'Of course!'. It seems to be outside time. Indeed it may be persuasive precisely because we think of it as a product of Nature rather than of history (Hall & O'Shea, 2013: 9; see also Eagleton, 2007: 58-59).

In that sense, specific knowledges, beliefs, ideas and so forth appear obvious, truthful and correct because they are granted an existence outside time; they become naturalized (and universalized) rather than historicized. This is true of ideologies of nature too given that certain ideas of nature become 'naturalized'. Accordingly, certain ideas of nature will carry a sense of obviousness since they are thought to 'natural' or only about *nature* (the ideological move of *naturalizing* nature); that is, "Of course!" this is natural and this is not natural, "Of course!" nature works in this way and not in that way and so forth.

Nonetheless, even in the realm of the taken-for-granted, there exists what Gramsci called "good sense" (common and good sense operates simultaneously), and this is important because it "provides a basis…for radical change" (Hall & O'Shea, 2013: 10). While common sense needs to be critiqued, it is not all 'bad'; hence, even within common sense we will find bits and pieces which (potentially) are critical.

While understanding and critiquing common sense certainly is pivotal, it must be understood with some caution within the realm of ideology. One aspect here that deserves attention is the idea that common sense constitutes popular, easily available knowledge, no complicated ideas, no sophisticated arguments, and no deep thought or wide reading. The reason for addressing this aspect is – I would argue – that ideology (as it is articulated within content) often is quite complicated, sophisticated, and equivocal. Ideology can thus be connected to common sense, but it would be problematic to reduce or equate ideology to common sense. Rather, ideology can take the form of common sense, and textbooks can be understood as important tools which articulate and/or attempt to forge common sense (which is not to suggest that they are the only or the most important). They should, then, create 'Of course!' experiences.

Ideology as part of content

By engaging with the work of Englund, this chapter has outlined a dynamic curriculum theory, one which adequately pays attention to content, and captures the dialectic of stability and change. In contrast to the reproductive focus prior to Englund's developments which underplayed change, this has involved viewing content within a "field of force" and as socially and historically determined. Following this, I would like to stress two points: first, ideology

should be conceived as worked out and articulated within content and subject to stability (inertia) *and* change. Given the undeniable relationship between ideology and content, ideology too is conceived as dynamic and historically embedded. Although there is nothing inherently dynamic with the theory of ideology as outlined here, it is helpful for understanding continuity *and* change in the *content* of the curriculum not only because it is interwoven with the central premises of curriculum theory, but because ideology is rooted historically. And secondly, ideology should be understood as a set of partial and distorted ideas that attempt to become universalized. In chapters five through nine – which constitute the historical analysis of ideologies of nature as they have appeared in geography textbooks – I use this understanding of ideology to grapple with the content of geography textbooks, and thus their (re)articulations of nature. By doing so, I will demonstrate how textbooks have (re)articulated partial and distorted ideas of nature.

In the next chapter we will turn to the production of nature thesis and the ideology of nature. Those discussions will consider the way in which geography textbooks are implicated in the production of (ideologies of) nature.

Chapter 4 – Ideology – and Nature

> The production of [nature]…sounds…quixotic and…jars our traditional acceptance of what had hitherto seemed self-evident…What jars us so much about this idea of the production of nature is that it defies the conventional, sacrosanct separation of nature and society, and it does so with such abandon and without shame (Smith, 1990: xv-xvi).

> In its most immediate appearance, the natural landscape presents itself to us as the material substratum of daily life…But with the progress of capital accumulation and the expansion of economic development, this material substratum is more and more the product of social production…In short, when this immediate appearance of nature is placed in a historical context, the development of the material landscape presents itself as a process of the production of nature (Smith, 1990: 32).

Nature is a complex term. Is it more natural to be on a paleolithic diet than to be on a McDonalds diet? Is Dolly the cloned sheep less natural than a 'naturally' breed sheep? Are humans and our behaviours natural? Can humans 'dominate' nature? Are national parks natural? Is the surface of the moon natural? Are natural disasters only natural? Has the city anything to do with nature? Are there any natural limits? When is something 'natural' (a temporal question) and where is nature (a spatial question)? The list can go on.

For a thesis not merely occupied with curriculum theory, there is a need to provide a deep theoretical understanding of (social) nature. In this chapter I will provide an argument of how to conceptualize historical articulations of ideologies of nature. Specifically, I have turned to the "production of nature thesis" developed by Smith (1980, 1990, 1996, 1998, 2007; see also, Haraway, 1991; Katz & Kirby, 1991; Katz, 1994, 1998; Castree & Braun, 1998; Castree, 1995, 2000a, 2000b, 2001b, 2003; Swyngedouw, 1999; Braun, 2000, 2002; Ekers & Loftus, 2013; Loftus, 2012, 2013; Ekers & Prudham, 2017, 2018)[41] to make sense of and develop a critique of ideologies of nature.

The production of nature was, and is, a provocative argument, and certainly it appears ludicrous. As Smith (1990: 32) noted himself, "The idea of the

[41]A lot of work on 'nature' has been produced besides the production of nature thesis. See, for example, Soper (1995, 1996, 1999), Castree (2005, 2014) or the edited volumes by Braun & Castree (1998), Castree & Braun (2001). For more recent debates about Smith's production of nature thesis, see for example Napoletano et al. (2019), Napoletano et al. (2022a) and Napoletano et al. (2022b)

production of nature is indeed paradoxical, to the point of sounding absurd, if judged by the superficial appearance of nature even in capitalist society". When we encounter nature in our everyday life, and the way in which we are shaped by commonsensical conceptions of nature, nature is precisely that thing which is not produced; rather it is the antithesis of being 'produced'. This has, as will be discussed further in this chapter, a lot to do with how the ideology of nature works *within* the production of nature, and in turn, society at large. As Castree (2000b: 278) noted, the production of nature seems peculiar only because much – and widespread – environmental thought (e.g., technocentrism and ecocentrism) operates with the dualism between nature and society at its centre, thus holding a "powerful ideological grip" on our consciousness. Despite the conventional wisdom in favour of an 'un-produced' nature – and one that maintains the sacrosanct separation between nature and society – Smith provides a very compelling argument by which he argued that nature and society are interrelated "*from the very start*" (Castree, 2000b: 278; original emphasis). By insisting that nature is socially produced – or that "nature is nothing if it is not social" (Smith, 1990: 30) – Smith's theory of the production of nature is an approach which is deeply de-naturalizing by revealing and emphasizing how the history of human labour is absolutely central to the making of apparently natural natures.

At the most basic level, the production of nature thesis asserts that nature is produced in two distinct ways; human labour produces nature materially, and – as an integral part of that – also produces ideas of nature. Therefore we need to conceive of "nature [as] produced materially and metaphorically in historically and geographically specific ways" (Katz, 1994: 279; see also Boyd et al., 2001: 557). On one level, humans have to produce nature in order to reproduce our means of subsistence (or else humans would freeze or starve to death). In that sense, it is a transhistorical act. On a different level, history is immensely important to the production of nature since the question is always how we produce nature, and to what ends (Smith, 1990, 1996). This is why the specific historical relationships between nature and society, or as Fitzsimmons (1989a: 106; see also Braun, 2002: 11) phrased it, "the geographical and historical dialectic between societies and their material environments" is of importance.

So far it might seem like the production of nature has little or anything to do with a thesis with one leg located in curriculum theory. However, the production of nature thesis provides a useful lens not only to grapple with shifting historical articulations of ideologies of nature; it also *enables* – by dislocating them – a critique of ideologies of nature (Ekers & Loftus, 2013). Ideologies of nature and the way in which these operate cannot be understood independently from the production of nature – 'production' and 'ideology' need to be conceptualized in a dialectical fashion.

Despite providing a very compelling argument, there is a need, if not to reconceptualize, then to make explicit, develop and deepen some of Smith's

core ideas in order to better analyse ideologies of nature solidified in geography textbooks. The argument I seek to develop is that we also need to conceive of (geography) education – textbooks and their authors – as being imbricated in the (re)production of nature, and in turn, that by being imbricated they advance articulations of ideologies of nature. The source for such a move lies within Smith's work, especially in his later writings as elements within the production of nature thesis became more outspoken (1996, 1998, 2007), but also in writings about how to conceptualize labour (Ekers & Loftus, 2013). The argument about labour is important since it forces us to think about the various kinds of labour involved in producing nature. In this chapter, we will also return to the ideology of nature and in the final section on concept of articulation. Before engaging with these matters in more detail, I will recapitulate the production of nature thesis.

The production of nature thesis

One of the first premises of the production of nature thesis is that history is crucial; that is, the social relationship with nature is organized differently depending on historical epoch. In order to 'historicize' the production of nature, but at the same time, develop the theory of the production of nature, Smith relied on Marx's work. Marx proposed that nature is a "differentiated unity" by which human labour constitutes the centrepiece in the relationship between human society and nature. Importantly, this question was not addressed philosophically by Marx but "as a historical one" (Smith, 1990: 33).

Production in general

Smith (1990: 35) starts out by underlining that "production…[is] a process by which the form of nature is altered". At the core of the production (of nature) is labour. Labour is at the centre of the metabolic process (metabolism) between humans and nature, a process which is dynamic and coconstitutive. With the nature-imposed necessity to labour, the distinction between nature and society ceases to exist. Marx suggested that the labour process "is the universal condition for the metabolic interaction between man [sic] and nature, the ever-lasting nature imposed condition of human existence, and it is therefore independent of every form of that existence, or rather it is common to all forms of society in which human beings live" (Marx, 1977: 290; cited in Ekers & Loftus, 2013: 238-239). The metaphor of "metabolism" is, as Mitchell (1996: 6) contends, exact, "the work of people (re)produces a (socialized) nature". In every human society, humans must produce nature to survive. This is the fundamental starting point for the production of nature since Smith (1990: 36) grounds his analysis in the idea of a "metabolism of human beings with nature".

Regarding the production of nature thesis, the point of departure, Smith (1990) let us know, is with "production in general" because this material relationship between humans and nature is the most fundamental one. To back up his claim, he turned to Marx (1973b: 85, cited in Smith, 1990: 34; original emphasis): "*Production in general* is an abstraction, but a rational abstraction in so far as it really brings out and fixes the common element" in all eras of production. There are universal and transhistorical determinations common to all epochs throughout history, and therefore, some determinations in the relationship between humans and nature will be shared between the "ancient" and the "modern" epoch (see also, Ekers & Loftus, 2013: 238[42]). Yet, regarding the elements which are not transhistorical and common, there is a need to single out those elements from the determinations that are part of production as such. Thus, with "production for exchange" the general determinants concerning the relationship between humans and nature remain intact but "the dialectic of use-value and exchange-value adds a new dimension to the relation with nature" (Smith, 1990: 35), that is, a dimension which is specific to "production for exchange".

Production for exchange

With production for exchange, the relationship to nature becomes determined by the objective to produce exchange values. Therefore, with production for exchange the human relation to nature is not merely a use-value relation; hence "with production for exchange, exchange-value not use-value is the immediate reason for production". As such, the production of material life is no longer determined by the objective to satisfy human needs but with production for exchange "human beings begin to produce more than just the immediate nature of their existence" (Smith, 1990: 40). Today, and since the last 200 years or so, "with the victory of capital over the world market, a wholly new set of very specific determinants enter the scene; the relation with nature is again revolutionized" (Smith, 1990: 35).

Capitalist production of nature

In the move from production in general, to exchange and ultimately to the capitalist production of nature – that is, different relations between humans and nature – Smith argued that the metabolism characteristic of capitalism entailed a change from "production for use" to "production for exchange". Capitalism is not alone with the capacity to produce nature since "Production

[42] Eaton (2011: 247) pointed to this as well: "The production of nature…is a universal approach. It excludes no society because every society must apply labour to furnish itself with food, clothing, shelter, etc., and because every production process transforms raw materials and thereby alters and constructs the physical environment".

in general is the production of nature" (Smith, 1990: 53), yet, above all else capitalism is concerned with the production of commodities or exchange values. That is to say, the relation with nature becomes determined by the logic of exchange value and ultimately to the "creation and accumulation of…value" (Smith, 1990: 49). All these different modes of production, with their quite specific determinants, leads in the end to the logical conclusion: the production of nature.

A cornerstone and an immensely important claim in the historical transition towards the capitalist production of nature is how the categories of "first" and "second" nature are transformed. Conventionally, first nature has referred to pristine and/or prehistoric natures unaffected or unaltered by humans while second nature has referred to the historical result of the human transformation of nature (Ekers & Prudham, 2017: 1379). However, with the emergence of capitalism, this conventional distinction makes less and less (if any) sense since the logic of, and relationship between, first and second nature has been transformed.

With the capitalist production of nature, second nature is of course produced, but "the 'production of nature' thesis goes further in proposing that the distinction between first and second nature is now largely moot. Second nature continues to be produced out of a [first] nature, but increasingly first nature is produced *from within* and *as a part* of second nature" (Smith, 1996: 50; emphasis added). Thus, with the historical development of capitalism, the very meaning of first and second nature are qualitatively different. While it certainly remains possible to distinguish between a human and non-human nature, "first nature is deprived of its firstness, its originality" (Smith, 1990: 54) in the sense that first nature also is produced. Smith, then, directs the attention to the *transformation* of first nature "within" and "as part of" second nature; labour, both physically and conceptually remakes nature, which in turn creates a *new first nature* (Ekers & Loftus, 2013: 236).[43] In this way, it is helpful to think of the relationship between first and second nature in terms of a production process – the constant transformation and alteration of the form of nature – that is, the production of first nature is "guided by the needs, the logic, the quirks of the second nature" (Smith, 1990: 56).

The development of capitalism, and the way in which it operates, has global ambitions. Capitalist production of nature is accomplished to fulfil only one particular need, i.e., "In search of profit, capital stalks the whole earth. It attaches a price tag to everything it sees and from then on it is this price tag which determines the fate of nature" (Smith, 1990: 54). Capitalism with its universalizing tendencies operates to find more value and when the price is right, or when some former inaccessible nature becomes accessible, the process of commodification will take place, which is to say: "No part of the earth's surface, the atmosphere, the oceans, the geological substratum or the

[43] For Smith, a produced first nature is equivalent to a 'new' nature.

biological superstratum are immune from transformations by capital" (Smith, 1990: 56).

Though this was a rather short recap of Smith's production of nature thesis, the next sections explore the conceptual development that has ensued.

Economic production, or, cultural production too?

Over the years, the production of nature thesis has been widely discussed. Braun (2000, 2002, 2006) raised the question whether the production of nature thesis was too economically reductionistic, thereby overlooking cultural practices as generative processes (Braun, 2002: 17), and thus if there is a need "to extend what counts as 'production'" (Braun, 2000: 39). For a study occupied with shifting historical articulations of ideologies of nature in textbooks, such a question is important since it allows us to theorize the *various ways* by which nature is produced. As the thesis evolved, these questions were not fully explored but recognized by Smith:

> This argument of 'the production of nature' has the advantage, in that it gets beyond the powerful fetishism of a 'nature-in-itself' to focus on the social relationship with nature. It takes seriously the constructedness of nature at the turn of the twenty-first century, but it does so in such a way that it incorporates *material with conceptual construction*. The production of nature is as much a *cultural as it is an economic process* and should be understood in the *broadest sense of transforming received natures* (Smith, 1996: 50, emphasis added; see also Smith, 2000: 274).

This widens the horizon of what can be considered as the production of nature. The first part of this passage outlines one of the central premises of the production of nature argument: that it is impossible to conceive of nature as a thing or as something given, rather there has always been (still is, and will be) a particular social relationship with nature. Nature as a thing – and specifically as something external to society – has over the long haul of history operated as a powerful ideology. The production of nature thesis, however, displaces such (distorted) reflections of reality by focusing on the interrelatedness of nature and society "from the very start". But the production of nature thesis does more than that. By emphasizing both the material vis-a-vis conceptual construction of nature, and that this is an economic as much as a cultural process, Smith underlined the importance of not conceiving the production of nature through a too narrow economic lens. The 'economic' and the 'cultural' are not treated as separate ontological realms; rather they are – or at least should be – understood as dialectically interwoven (shaping each other) and articulated.

As part of this, Smith (1998: 277; see also, Smith, 2011) argued that the theory of the production of nature "retains a broader perspective…involving

the whole range of social, economic and cultural production", and in turn, that it should not be understood as restricted "to those acts of manual and not imaginative work, economic and not cultural creation, individual labour rather than social accomplishment, and the making of objects rather than productive consumption by subjects". This, Ekers & Prudham (2018: 28) claims, represents a clarification and a more nuanced understanding of the thesis.

With this widened horizon – by which production is extended and understood "in the broadest sense" – we can begin to conceptualize how geography textbooks and textbook authors are implicated in the (re)production of (ideologies of) nature, especially so by further drawing on work that have stressed the role of ideas, conceptions, beliefs etc.; features integral to the production of nature which was acknowledged, but perhaps never fully elaborated in Smith's earlier work. Thus, in their discussion of latter quotation by Smith above, Ekers & Loftus (2013: 243) suggest that this "statement represents an elaboration of implicit suggestions in the earlier account that the production of ideas, conceptions and consciousness are imbricated in the material production of nature". Similarly, Ekers & Prudham (2018: 28) underlined that a produced nature cannot entirely be reduced to the "physical stuff" or its "economic function". Rather, we must also attend to and view it "as a cultural creation that intervenes in the domain of meaning. This includes shaping the ideological and representational relations and currents that animate socioecological entities and relationships". In yet another article, Ekers & Prudham (2017: 1379), following Smith (1990: 36-37), crucially argue for the "material and semiotic production [of nature] as a simultaneous unity", and that "the capitalist production of nature involves a first nature of conjoined matter and meaning". That is to say, the way in which human labour changes and alters the material substratum we call nature "thus also involves the production of ideas, representations, and understandings of nature, featuring a cultural politics of meaning that is internal to the social production of nature".[44]

Retaining a 'broader perspective' on the production of nature, and conceiving the production of ideas, conceptions, consciousness, understandings, representations, and meanings of nature as articulated with material production provides, I would claim, a way to advance the argument of how geography textbooks and textbook authors are imbricated in the (re)production of (ideologies of) nature. However, to deepen this argument, we must problematize the concept of labour which lies at the heart of the production of nature.

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[44] Swyngedouw (1999: 447; see also Castree, 1997) in a similar vein argued for the unity of production of nature and the production of ideas of nature by making a reference to Lefebvre (1991):

"…the production process of socionature embodies both material processes and proliferating discursive and symbolic representations of nature…the production of nature transcends material conditions and processes; it is also related to the production of discourses of nature (by scientists, engineers, and the like) on the one hand, and to powerful images, symbols, and discourses on nature (virginity, a moral code, originality, survival of the fittest, wilderness, etc.) through which Nature becomes represented, on the other".

Labour at the heart of the production of nature

Building on the production of nature thesis in order to "revitalize" it, Ekers & Loftus (2013) suggests that, quite paradoxically, the concept of labour has escaped critical scrutiny. By advancing an argument of labour, and thus extending Smith's argument, they write that "Gramsci forces us to highlight the different types of concrete labour (artistic, intellectual, scientific, manufacturing) that are formative in the production of nature" (Ekers & Loftus, 2013: 235).

In short, at the centre here is an approach capable of addressing the organization of labour in the broadest possible way, one which "attends to various relations and processes that bring people to labour and regulate the activity through which nature is produced" (Ekers & Loftus, 2013: 245). Given the emphasis on the relations and processes shaping the production of nature and ultimately, the labour involved in such an activity, Gramsci drew attention "to the multiple [yet specific] forms in which human activity appropriates nature, whether through mental, physical or scientific labours" (Ekers & Loftus, 2013: 247). That is, as Gramsci "stresses the diverse relations that define individuals' engagements with nature", he therefore "provides us with a theoretical vocabulary…that emblematically captures material and symbolic production of nature" (Ekers & Loftus, 2013: 247-248).

Textbook authors as producers of ideologies of nature

While Ekers & Loftus (2013) argument was geared towards debates in political ecology (Kirsch, 2014), it is of interest for a thesis rooted in curriculum theory/history too. By engaging with their argument, what I would like to at least *point to* in terms of labour (since I do not fully explore it), is how textbook authors – as a specific form of labour (what might be called pedagogic labour) within the larger division of labour involved in producing nature – are deeply imbricated in the (re)production of ideologies of nature. That is, by performing a certain kind of work, they are clearly involved in the "symbolic production of nature" and the very act of producing nature in the sense of ideas, conceptions, beliefs and so forth. The reason for laying an emphasis on 'point to' is the fact that my analysis focuses on the forms and products of their labour, rather than the labour process itself.

As Kirsch (2014: 692) underlines, the move sought by Ekers & Loftus (2013) was to think through the "wide-ranging sites of nature's production and reproduction". While the emphasis has been on scientific and intellectual labour, and the work of scientists and experts, it is important to recognize that "this work can also be equated with a range of different actors and institutions – for example, in law, medicine, education, governance, and activism – which all contribute, in distinctive ways, in the 'wars of position' that drive nature's

cultural politics" (Kirsch, 2014: 699).[45] Although the focus in this thesis is not particularly on "nature's cultural politics", the claim by Kirsch – as he points to education – can at least be connected to the way in which the curriculum operates in a "field of force". Geography textbooks, and the pedagogic labour involved shaping the form and content of these over time, advance some specific ideologies of nature, and therefore, the very meaning of nature and how nature is to be understood and conceived.

While this thesis attempts to examine the way in which geography textbooks and textbook authors have contributed to (re)producing ideologies of nature, it is important not to conceive of 'pedagogic labour' as mechanistically determined by other productions of nature, and at the same time, that it is not independent and isolated. The way to understand different productions of nature is to think of them as co-constituted and articulated whereby textbooks function as one important moment (or site). That is to say, 'pedagogic labour' does not necessarily produce nature 'anew', which is not to say that such workers are passive recipients of ideology. Rather, they may select, accept, internalize, bend, shift, and thwart certain ideologies of nature.

Furthermore, Kirsch raises the important question of "how different kinds of work are formative in the production of nature at particular historical and geographical conjunctures, along with the varied terrains on which hegemony may be achieved *through* productions of nature" (Kirsch, 2014: 692; original emphasis; see also Ekers, 2009).

Hegemony refers quite succinctly to "the legitimacy of a social group's position of power and *the diffusion and adoption of a set of ideologies*" (Ekers et al., 2009: 289; emphasis added; see also Ekers & Prudham, 2018). Mitchell (2000: 51-52; original emphasis; see also Lears, 1985) further contends that "the theory of cultural hegemony is also a theory of *ideology*…that seeks to understand how ideologies are made, and how they attain an aura of 'naturalness'". Given that hegemony is about how ideologies become produced, diffused, and takes the form of common sense, not only is ideology a component of hegemony, but insofar as the production of nature involves ideas, conceptions and so forth, hegemony is also a component of the production of nature. If that is the case, then the production of nature not merely establishes hegemony, but the workings of hegemony might also imply the production of specific natures. Accordingly, hegemony is internal to and interwoven with the production of nature from the very start. Without developing a whole Gramscian argument about hegemony, it needs to be recognized as an integral part of the (re)production of (ideologies of) nature, since it allows us to understand the role and work of geography textbooks and textbook authors.

[45] Although phrased in a different way, this echoes Wilson's (1992: 12) point: "Nature is a part of culture…[Nature] is always shaped by rhetorical constructs like photography, industry, advertising, and aesthetics, as well as by institutions like religion, tourism, and education".

Following this, in the next (penultimate) section we will return to "the ideology of nature" because it is a "product" of the production of nature and of great significance for this analysis.

The ideology of nature – its roots, meaning and implications

In what follows, we will return to and look more closely at – as it was referred to in the introductory chapter – the "master ideology"; that is, (how) *the* ideology of nature (*works*). This entails deepening the understanding of the relationship between the production of nature and the ideology of nature (how the conditions of production determine the shape and content of ideologies of nature). Let us start by somewhat more carefully consider the meaning of the ideology of nature.

What the ideology of nature is

The concept, and ultimately the ideology, of nature, concerns our ideas, conceptions, meanings and beliefs about nature. As we saw in the introduction of this thesis, the concept of nature can take many different forms: for example, nature can be material and spiritual, pure and undefiled, order and disorder, given by God or a product of evolution. What we mean by nature and how we understand nature is certainly connected to history since "Much as a tree in growth adds a ring each year, the social concept of nature has accumulated innumerable layers of meaning in the course of history" (Smith, 1990: 1). Nevertheless, despite the broad spectrum of conceptions of nature, "they are organized into an essential dualism that dominates the conception of nature" (ibid: 2).

The ideology of nature refers to the dualistic and contradictory understanding that nature is on the one hand conceived of as "external" and on the other hand as "universal". Smith (1990, 1996, 2007[46]) remarked that the external conception of nature means that it is a thing, a realm of natural objects and processes operating outside society: it is pristine, God-given and autonomous, and the raw material (or material substratum) society is built on. External nature is "conceived as a repository of biological, chemical, physical and other processes that are outside the realm of human causation or creation, and the repository too of identifiable objects – subatomic and molecular, specific organisms and species" (Smith, 2007: 22).

[46] It should be noted that Smith (1990) relied on and developed the understanding of ideology that was discussed in the previous chapter to make an argument about the ideology of nature. Needless to say, there is a close connection between arguing for such a definition of ideology and the way in which the ideology of nature is understood.

This implies an independent nature clearly separated from human society, and as Smith noted, the external conception of nature is both untenable and absurd: "nature separate from society has no meaning…The relation with nature is an historical product, and even to posit nature as external to society…is literally absurd since the very act of positing nature requires entering a certain relation *with* nature" (Smith, 1990: 18, original emphasis). The "absurdity" is related to the fact that the production of nature thesis posits an *internal* (rather than an external and thereby dualistic) relation between human society and nature. The implications of this, for example, is that nature is not "threatened" by, or needs to be "saved" from, humans; rather, since we cannot *not* produce nature, the central question is how and to what ends nature is produced in historically and geographically specific ways (Braun, 2009: 25; Smith, 1990; Castree, 1995; Millar & Mitchell, 2017).

However, humans are usually also viewed as an integral part of nature, or even subject to nature, which is to say that "the externalist conception fostered its own alter ego: nature…is simultaneously universal. That is, the entire world – human and non-human – is subject to natural events and processes" (Smith, 2007: 22). Universal nature, then, suggests that humans are 'part of nature', a product of nature and that there is a 'human nature'. Smith (1990: 16) even suggests that the "human-nature argument" is "the jewel in the crown of universal nature", for example, that our behaviours are just as natural as elements within external nature. Thus, the conception of universal nature collapses the human with the non-human "in nature", by which humans become subject to natural forces and processes.

These two conceptions of nature, Smith (2007: 22) argues, have "grown into a hallmark of capitalist ideologies of nature". In this thesis, I understand the external and universal conceptions of nature as being two broad but distinct articulations. Thus, while there are many ideas, conceptions and beliefs about nature, nature conceived as something external and universal constitutes a "master ideology" given that various conceptions of nature "are organized into an essential dualism that *dominates* the conception of nature" (Smith, 1990: 2; emphasis added).

Before moving forward, some conceptual clarifications might be needed here, especially concerning the universal conception. Many – including myself – would contend that humans are part of nature, or perhaps more precisely within nature (think of labour and the *metabolism*). Yet, this understanding is different from the universal conception. The difference, as I see it, is that humans are understood in this second version as *shapers of* nature and not entirely *shaped by* nature (or worse, subject to or determined by nature) as the universal conception posits (Harvey, 1993, 1996). Humans are indeed part of nature, but human labour alters nature in historically specific ways.[47]

[47] Or as Braun phrased it: "historical materialists…[understand] human actions as part of nature's 'metabolism': people [are] understood as one of nature's constituent parts, but also as a

The way in which the ideology of nature works is indeed complex since these two conceptions are not easily reconcilable; rather they are contradictory. As peculiar as it may sound, these conceptions that lie internally within the ideology of nature are often at work simultaneously; that is, while nature is conceived as external, it is at the same time conceived as universal (Smith, 1990: 2). In terms of how this contradiction operates, each of the two conceptions are dependent on each other for its survival; without an external nature there is no need for a universal conception. In other words, the universal conception "draws its sustenance" as Smith (1990: 16) formulated it, from the external conception, which is to say that there must be an autonomous and law-given external nature for us to be part of. While external nature is a "direct result of the objectification of nature in the production process", it does not matter how successful this production process is with rendering humans and/or society as distinct entities separate from nature. Humans are still part of and subjected to natural events and processes. Therefore, since external nature "gives us only part of the picture of nature, a concept of nature is also necessary by which it is possible to explain human societies *in* nature" (Smith, 1990: 15; original emphasis).

To perhaps complicate things further, the production of nature and the ideology of nature are at work simultaneously, although the production of nature thesis is indeed a theoretical response to and a critique of the ideology nature; hence, the aim of the production of nature thesis "is to renovate our conceptions of nature in such a way that the dualistic world of bourgeois ideology can be reconstituted as an integrated whole" (Smith, 1990: 32). The relationship between the 'thesis' and the 'ideology' is intricate given that the capitalist production of nature operates with the ideology of nature at the heart; and even more so, the ideology of nature is generated from within the production of nature itself.

Hence, as Eaton (2011: 248) phrased it, the thesis "makes patently clear that nature is in no way external to society". This may certainly seem paradoxical since on the one hand, the ideology of nature is crucial to how the capitalist production of nature operates, and on the other hand, the production of nature thesis seriously undermines the ideology of nature. Let's take two examples to illustrate how the ideology of nature works simultaneously as the production of nature (two examples which to a certain extent also demonstrates how the external and universal conception of ideology works in tandem).

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productive force that continuously transformed nature and was transformed in the process" (2004: 162).

Two brief examples

National parks, and our experience of them, may provide an illustrating case in point. "Seen" from the city, the national park presents itself as an "external nature" in the form of wilderness, but there can be a trip from external into universal nature. As we experience (or visit) national parks, we travel from external to universal nature in our effort to immerse ourselves 'in nature', by which "Externality is replaced by universality, at least for the weekend" (Smith, 1990: 14). Visiting national parks means that we are now 'part of nature' but at the same time experiencing an external nature and more specifically what appears as an "unproduced nature". Take Yellowstone Park or Yosemite as an example (see also Mels, 1999). "These [parks] are produced environments in every conceivable sense" Smith argues, and we only have to look at the management of wildlife, and the changes in the landscape to understand that the environment is impregnated with human labour; in turn, these parks are "neatly packaged cultural experiences of environment on which substantial profits are recorded each year" (Smith, 1990: 57). Appearances then are deceptive. And as Smith contends, there is no need to become nostalgic about the pristineness of nature, rather the point is to examine how nature is produced through practices of human labour. The production of nature in the case of national parks is obscured and concealed – but at the same time – the production of nature works to 'naturalize' nature.

As a second and different example, following Eaton (2011: 248; see also Braun, 2002: 12), if we accept the premises of the production of nature, then there are no (neo-Malthusian) natural limits. Neo-Malthusian arguments (see chapter 8), which arose in a specific historical era (1960-70s) and draw on the ideology of nature, attempt to establish and legitimize notions of natural limits as unmalleable barriers in nature humans ultimately must be subject to. But since the production of nature is historically specific and dependent on changing technologies and relations of production, the notion of limits functions as ideology. By appealing to limits (and thus an external nature), the dynamic and historically specific transformation of nature is – as with national parks – obscured. That is how both production and ideology work simultaneously.

However, one must not necessarily interpret the notion of limits along (neo-)Malthusian lines, or suggest that there are no natural limits whatsoever. While the (neo-)Malthusian version of limits must be rejected, we must also accept natural limits in order to not advance a too "productionistic" and "anthropocentric" argument (Castree, 1995, 2000a, 2001b; Benton, 1989; see also, Bakker & Bridge, 2006). That is, as if the matter of nature does not matter. Benton (1989) argues that the theory developed by Marx, and subsequently by Smith we might add, was "incapable of adequately conceptualizing the ecological conditions and limits of human need-meeting interactions with nature" (1989: 63), and that not enough attention has been paid to the way in which "productive labour-processes…are subject to naturally given and/or relatively non-

manipulable conditions and limits" (1989: 73). There is a need to recognize that "each form of social/economic life has its own specific mode and dynamic of interrelation with its own specific contextual conditions, resource materials, energy sources and naturally mediated unintended consequences (forms of 'waste', 'pollution' etc.)" (Benton, 1989: 77).

Ecological problems, Benton goes on, as they are generated from social/economic life, needs to be conceived as the result of "this specific structure of natural/social articulation" (ibid). Therefore, rather than lapsing into either an "epistemic conservatism" (neo-Malthusianism) or a full-blown "social-constructionism", any form of social/economic life "is understood in terms of its own specific contextual conditions and limits" (1989: 78). "[S]ince natural limits are themselves theorized…as a specific function of the articulated combination of specific social practices and specific complexes of natural conditions, resources and mechanisms", Benton (1989: 79; original emphasis) continuously argues, "what constitutes a genuine natural limit for one such form of nature/society articulation may *not* constitute a limit for another".

Despite the risk of rehabilitating the ideology of nature here (Castree, 2000a), this offers not only a "historically contingent theorization of natural limits" (Fitzsimmons & Goodman, 1998: 205), but leads to a recognition that natural conditions and limits both *enable* and *constrain* the production/labour process. Accordingly, human labour actively produces nature, but given that this process is dependent on (produced) nature, (produced) nature both enables and constrains the production of nature (nature influences and shapes the production/labour process) (Benton, 1989; see Castree, 1995: 22-25). In this way, the notion of limits needs not necessarily to be dressed in neo-Malthusian clothes. Natural limits are an outcome of a specific "nature/society articulation" – a specific form of the production of nature – and therefore, limits are not general to all such articulations.

Needless to say, this does not tell us much about the roots of the ideology of nature. Thus, let us turn to where the ideology of nature comes from.

The roots of the ideology of nature

There have already been some indications of this answer, such as in the definition of ideology by which a social class or group attempts to universalize their own partial perception of the world, or how external nature is a "direct result of the objectification of nature in the production process". But to better understand this, we need to briefly account for the specific relationship between the production of nature and the ideology of nature since the latter cannot be understood independently of the former.

The conception of external nature should be conceived as "itself a thoroughly social construction" (Katz, 1994: 279), and as rooted in the production process: "The production of nature under capitalism *generates* its own distinct ideologies…[T]he radical objectification of nature in the process of industrial

production both *generates and reaffirms* the positing of nature as an external reality vis-á-vis society, humanity, the social" (Smith, 2007: 22; emphasis added). In this way, the external conception of nature is "an expression of the commodification of nature" (ibid: 25). As the metabolism between humans and nature becomes mediated by exchange value under capitalism, "a distinct 'nature' and 'society' begins to circulate as a world-view, based, in part, on the commoditization of crucial aspects of the means of existence" (Ekers & Loftus, 2013: 237). In a similar fashion, Ekers & Prudham suggested that the

> …production of exchange values by wage labor results in the collective alienation of working people from the products of their labor…[I]t is this alienation that encourages, in part at least, a dualistic conception of nature seen as external to the social realm…[External nature is] a historical product of capitalist accumulation as biophysical nature is increasingly transformed as and for exchange (Ekers & Prudham, 2017: 1379).

That is to say, the emergence of industrial capitalism and the way in which capitalism appropriates nature in the production process as an object was one crucial factor shaping the external conception of nature. This also suggests that the ideology of nature cannot entirely be overcome by a critique of the ideology of nature since it is rooted in the capitalist production of nature (Larrain, 1979).

However, although this constitutes the origin of the external conception of nature, Smith (1990, 1996) make clear that the ideology of nature operates in natural science, in romantic conceptions of nature (either in philosophy or literature), in more deep green or deep-ecology grounded perceptions, and in technocratic environmental policy (but also in Marxist theories of nature, such as the 'domination of nature' thesis[48]). As such, the ideology of nature has

[48] The notion of the "domination of nature" (and/or related conceptions such as the "mastery of nature") is associated Frankfurt School. Although not all theorists of the Frankfurt School were behind this notion (which is why it should not be reduced to the Frankfurt School as a whole), it is worthwhile to say a few words about it as it has been quite influential. In short, the argument goes that with the development of technology, humans have expanded their domination of nature. Yet, this is problematic because it reasserts a conception of external nature. The idea of the domination of nature, Smith (1990: 30) argues, "begin with nature and society as two separate realms and attempts to unite them. In Marx we see the opposite procedure. He begins with the relation with nature as a unity". Accordingly, the social relation with nature cannot be manufactured externally, instead nature and society are interrelated from the very start. Furthermore, the abandonment of class and the insertion of 'humanity' is problematic since "the political struggle is not aimed at the capitalist use and production of nature, but at the general misuse and domination of nature by the human species. The 'human condition' not capitalism, becomes the historic villain and political target" (Smith, 1990: 29). Ultimately, domination implies a certain form of 'control' over nature, but importantly, production cannot be equated to control. "This is the primary flaw in the 'domination of nature' thesis" Smith (1996: 50) writes, "namely that it conflates the making of nature with control of nature". The production of nature thesis, however, rejects the idea of domination as it "leaves radically open the ways in which social production can create accidental, unintended and even counter-effective results vis-á-vis nature" (Smith, 2007: 24).

become dispersed and rooted in different contexts, settings and intellectual currents which ultimately conceive of nature in a particular way.

The implications and 'effects' of the ideology of nature

Clearly, how the ideology of nature is rooted and has become dispersed makes it powerful, but it is also powerful because nature appears purely 'natural'. Fitzsimmons (1989a: 109; original emphasis) remarked that when nature is externalized, abstracted, and made primordial, it "*provides a source of authority to a whole language of domination*". "This is the domination *of* nature", she wrote, "but also the domination of human reality *by* nature".[49] But there is more to this. In the words of Castree (2005: 117; emphasis added), for Smith the ideology of nature is composed of "'common-sense' beliefs about nature whose *partiality* and *bias* is dissimulated precisely because they seem to have no social contamination…they seem to be about nature in itself [and] not society". These beliefs about nature – the external and universal conception of nature – operate as a particular form of distortion. As they appear to be only about nature, they work to obscure and conceal their "social contamination", and therefore, rather than being conceived as socially and historically produced phenomena, these beliefs about nature work to not only does "naturalize" and "eternalize" nature, but to "naturalize" and "eternalize" social and historical phenomena.

As part of this, one central question that arises is how the external and universal conception is functional to the requirements and survival of capitalism and the capitalist production of nature. Castree (1995: 16-17) points out how the external conception "hypostatizes non-human objects and renders them immutable, intractable barriers against which humanity is more or less powerless". At the same time, it "denies any social relation to nature, hence ruling out the politics and possibility of altering it to meet human needs". In a similar way, Katz & Kirby (1991: 268) argues that "the ideological potency of this formulation disables political engagement". In other words, the external conception of nature rejects any social relation with nature thereby ruling out politics and history. Yet, the external conception further posits nature as an

[49] Although it may appear strange, proponents of the production of nature thesis acknowledges an attempt to dominate, master and control nature. For example, as Smith (2007: 24; original emphasis) writes: "The processes of externalization and objectification [of nature] have facilitated inordinate efforts at the *mastery* of nature". Furthermore: "There is no question that the broad intent of science in a capitalist society is explicitly aimed at the domination of nature, but that project embodies an aggressive externalization of nature". While the theorists of the Frankfurt School conceive of the domination of nature "as an inevitable condition of the human metabolism with nature", Smith recognizes that there are "efforts" and an "intent". Thus, the important point here – raised by Fitzsimmons and Smith – is: as the idea of the domination of nature is predicated on the external conception of nature, this enables or facilitates an apparent "domination of nature"; that is, with the external conception at work, the domination of nature is "made real".

object, and as an object, it is something for capital to shape and exploit. By viewing nature "as a repository of biological, chemical, physical and other processes" as well as a "repository…of identifiable objects – subatomic and molecular, specific organisms and species", nature is conceived as a source of use-values (Smith, 2007: 22).

By turning to the idea of a universal nature, it "makes social relations as intractable and immutable as natural laws themselves" (Castree, 1995: 17); that is, the universal conception makes humans part of nature according to the logic of transcendental laws and as a part of the inevitable condition of nature (a state of nature). Accordingly, by naturalizing social relations, the universal conception of nature too erases history and politics. In this sense, these relations become "fixed" and "timeless" and if social relations are "natural", it becomes "pointless to try to change [them]" (Braun, 2002: 12). The ideology of nature thus trades on an inevitability; that is, it creates a natural – and perhaps, a naturally predestined – order (the world is a result of nature). As such, rather than a future ultimately determined by politics, our future is to be determined 'by nature' (or evolution) (Smith, 1990: 31). In these ways, and for these reasons, these beliefs work and function ideologically, and this is what makes them powerful.

In this section, we have underlined what the ideology of nature is, how it works, its origins, and why it is powerful and problematic. To me, how this contradictory and powerful logic of an external and universal conception of nature has been articulated, unfolded historically, worked out, functioned, and the effects it has had remains central to the analysis. Although the meaning and definition of the ideology of nature remains constant, we need to pay close attention to how it is historically transformed in the textbooks in the sense that it adapts to and becomes entangled with new contexts, currents and articulations. The aim, then, is precisely to demonstrate how and why the ideology nature is powerful and deeply historical; and therefore, that it has little to do with nature.

As a final note, I want to emphasize that despite my objective to critique ideologies of nature, it is often difficult in the procedure of writing to entirely escape this dualism. The risk of reproducing this dualism is of course problematic. This problem has been highlighted in relation to Smith's writings as well (cf. Loftus, 2012: 13). For instance, Loftus (2017) contends that Smith reproduces this dualism by his assertion that humans have natural needs (universal) such as food, sex, warmth, social interaction and that nature provides the material (external) to fulfil those needs. To me, this seems like a mischaracterization of the ideology of nature. This is perhaps a question of interpretation, but what this further draws attention to – since ideology is articulated through language – is the limits of language. Clearly, while I remain limited by language when it comes to expressing the human relation with nature, so too are textbooks authors. In their case, this may be connected to, for example, the objective of presenting knowledge in a quite concise manner to a specific

audience. As such, one cannot perhaps expect to find a theoretical account of the interrelations between human society and nature, and it might seem "unfair" to argue that the conception of an external nature is articulated through ideas such as the "human *impact* on nature". Yet, language is simultaneously revealing in the sense that it tells us something about (the power of) common sense. Hence, it is clearly important to recognize the limits of language, but language (and how it is limited) also advances and reveals ideology.

Producing nature – (re)articulating ideologies of nature

The production of nature is here conceived of in a broad sense, by which geography textbooks and textbook authors are imbricated in the (re)production of ideologies of nature. By way of conclusion, I want to connect to the concept of articulation.

As was briefly raised previously, articulations are produced and need to be maintained (Clarke, 2015). Although the production of nature can be understood as articulated, it is on a conceptual level possible to make a distinction between the *production* of (ideologies of) nature and the *articulation* of ideologies of nature since the production of nature – as it is tied up with hegemony – points to the process of making, transforming and diffusing nature, and although articulations are made and transformed as well (re-articulated), articulation refers more specifically to 'expressing' and 'uttering' and hence the way in which certain ideologies of nature *appear* in textbooks.

In sum, then, geography textbooks and their authors are part of the (re)production and (re)articulation of ideologies of nature. In the chapters that follow, given that the production of nature is rooted in specific historical conditions, we will closely detail the products of their labour – the way in which ideologies of nature have been (re)articulated historically in the textbooks – and thus how their articulations take different forms.

PART III

Historical articulations of ideologies of nature

1866-1962
Chapter 5 – The ideology of environmental determinism
Chapter 6 – The idea of race

Chapter 5 – The ideology of environmental determinism

In the late 19th century, imperialist expansion was soon about to reach its peak. In his essay "Geography and Some Explorers", Joseph Conrad (1926) acknowledged the relationship between geography and empire by separating the history of European expansion into three distinct stages. The first, "Geography Fabulous", was characterized by a combination of "pre-scientific magic and mythology" along with both graphic and verbal representations of new places. The second stage distinguished by Conrad was "Geography Militant", which was an epoch taking shape in the 18th and 19th century. This stage was instead marked by exploration and conquest of seas and territories, exotic species and resources (Smith & Godlewska, 1994: 1), but also by the endeavour for empirical knowledge about the earth (Driver, 1994). The result of these two stages was "Geography Triumphant". This entailed that unknown geographical spaces of the continents were becoming known, and for Conrad, it was the "irreversible closure of the epoch of open spaces…[The] closing decades of the nineteenth century…brought into being an altogether different world" (Driver, 1994: 104).

Geography was heavily implicated in colonial and imperial expansion. "[E]mpire was…a quintessentially geographical project" Smith & Godlewska (1994: 2 & 4) write, while further arguing that "it is…clear that the very formation and institutionalization of the discipline was intricately bound up with imperialism". As part of this effort to trace the connections between imperialism and geography, Livingstone (1992: 160) emphasized that geography was "the science of imperialism *par excellence*".

The relationship between the "new geography" – which can be dated to the 1870s – and imperialism was exactly the concern of Hudson's (1977) analysis. Hudson argued that "the study and teaching of the new geography at an advanced level was vigorously promoted at that time largely, if not mainly, to serve the interests of imperialism in its various aspects including territorial acquisition, economic exploitation, militarism and the practice of class and race domination" (1977: 35). The promotion of geography in those terms was a tool for imperialism, and the interlinkages between geography and empire need to be understood within the context of an expanding global capitalism (Smith, 1994).

Hudson was one of the first to critically examine the legacy of imperialism and relied on several sources to make his argument (see also, Folke, 1973). Hudson interrogated the relationship between geography and militarism and the development of geography teaching and the institutionalization of European schools of geography. Furthermore, he explicated the linkages between "geographical explorations, the geo-political self-interest of European states, and the exploitation of both recoverable economic resources and local populations". More importantly for a thesis focusing on historical (re)articulations of ideologies of nature, Hudson pointed to "the ideological underpinnings and assumptions of the emerging discipline…[that is] the racist underpinnings of environmental determinism" (Smith & Godlewska, 1994: 5).[50]

In Sweden too, geography "took wing" through the spirit of exploration, and following Darwin, an interest in nature. However, "Scandinavians", Buttimer & Mels (2006: 34) write, "held a leading rank in the world race to discover fresh insights on glaciers, peaks, drainage systems and climate, as well as to name and explain, albeit not necessarily to claim, all corners of the globe". In 1880, the ship SS Vega with Adolf Erik Nordenskiöld (1832-1901) onboard returned to Stockholm after finding the way through the Northeast-Passage. "With Nordenskiöld", Helmfrid (1999: 19; see also Helmfrid, 2004) claims, "geography was at the front of a new period of scientific glory in Sweden", and about a decade later, Sven Hedin (1865-1952) – who had experienced the return of SS Vega – embarked upon his expeditions. One driving force regarding the interest in polar research and "the northern space" was to create and reinforce Sweden's northern identity. Between 1837 and 1910, 35 research trips were made to the Arctic region, in which Spitsbergen was the most common destination (Sörlin, 1988: 122, 152, 154). "This peaceful conquest of the northern space", Sörlin (1988: 122) writes, "became a dimension in the Swedish national consciousness and in the picture of Sweden as a scientific nation". Through its location, Sweden (or Swedes) was not only particularly equipped to conduct polar research, but it was something of

[50] There is a rich geographical literature on the relation between geography and empire and, in turn, the role of environmental determinism (see e.g., Folke, 1973; Hudson, 1977; Peet, 1985; Stoddart, 1985; Livingstone, 1991, 1992, 1994; Driver, 1992; Godlewska & Smith, 1994; Peet, 1998; see also, Morgan & Lambert, 2001; Morgan, 2003). Furthermore, as will be seen, environmental determinism was blatantly racist by incorporating different judgements about and attributing different physical and mental characteristics to specific races. The idea of race thus figures as an integral part and is deeply connected to environmental determinism. However, I have chosen to separate "the idea of race" (see chapter 6), from the analysis of environmental determinism. These chapters, however, should be read in tandem. As Kobayashi (2004: 238-239) writes, 'race' was "rooted in the geographical lore that accompanied the first European voyages of exploration that brought knowledge, riches, and power to the imperial/colonial dynasties. It was developed as a fully fledged theoretical system by Enlightenment thinkers whose treaties on such far-fetched theories as environmental determinism fit so neatly with the purposes of expanding European powers and with the by then highly developed sense of European cultural superiority and civilization".

"mission" or "call". Geology also contributed to enforcing the northern identity by showing that the "ice had been the single most important factor behind the creation of the Swedish nature". It had provided the preconditions for the Swedish industrial landscape, agriculture, and culture. Thereby, Sweden became "the land of the Ice Age" and "the northern identity could be anchored in what appeared as natural scientific facts" (Sörlin, 1988: 154).

Linking identity with nature, and grounding patriotism and nationalism in nature, was certainly on the agenda. As "symbols of the Swedish nation", national parks were "places where people were supposed to transpose the metaphysical longing for union with nature into the political doctrine of union with the nation". In such a way, the creation of national parks was a way to construct "Swedishness" as "a coherent, avowedly classless, ideological totality" (Mels, 2002: 138-139). The aforementioned Nordenskiöld was engaged with the creation of national parks, and through these parks was not only "the organic oneness of nature and the people" affirmed, but they offered "an ontology of national prehistory". Furthermore, Nordenskiöld, like many others, was clear that the protection of nature "should not become an obstacle for industrial capitalism" (ibid: 139).

While environmental determinism seems to have been relatively accepted in Western European and US geography, it never reached the same status in Swedish geography. In the first decades of the 20th century, Buttimer & Mels (2006: 140) note, Swedish geographers were primarily interested "in the history of geography, in anthropogeographical themes of nature and culture" and in describing regional landscapes. In many theses published from the 1910s to the 1930s, there was an emphasis to understand "human aspects of regional life" and to create "a whole picture of the interactions between human livelihoods and the physical environment" (Buttimer & Mels, 2006). However, this effort to create "whole pictures", Buttimer & Mels (2006: 140-141) argue, dismissed the models proposed "by followers of Friedrich Ratzel or in theories of environmental determinism". In a similar fashion, Helmfrid (1999: 27) claims that while there certainly were cases of "natural determinism", few Swedish geographers actually advocated such a theory.

Furthermore, in the early 1900s, despite advocates, and the influence of, a Ratzelian anthropogeographic approach which emphasized the need to study the relationship between society and environment "in ecological ways", and Helge Nelson's (1882-1966) mild support of Ratzel, "there was a deliberate attempt to dismiss any traces of environmental determinism" (Buttimer & Mels, 2006: 142). Wennberg (1990: 106), however, argues that within Swedish academic geography up until the year 1900, "a descriptive deterministic regional geography" dominated, but Swedish theses were more "historic – geographical". Taken together, these claims seem to suggest that while environmental determinism (in some form) was present, it was not the leading approach within Swedish academic geography.

However, let us turn to some examples. In the late 19th century and early 20th century, natural resources were part of a "national myth"; that is, within its borders, Sweden had "superior natural resources", and these would make Sweden into a "great power". Thus, that national parks should not be obstacles for the emergence of industrial capitalism was of key importance. As part of this "'physical patriotism'", it was also expressed that the "Swede's frame of mind" was shaped by the forest and the fact that Sweden was sparsely populated (Sörlin, 1988: 114).[51] Geographers, and especially economic geographers, showed a great interest in "'the northern space'". The professor Gunnar Andersson expressed a form of what Sörlin (1988: 127, 153) refers to as "'geodeterminism'". Not only was the physical landscape advantageous – the vast system of rivers could be used for transport – but whether a country was rich or poor was given by nature. In "the struggle between nations" – a struggle framed by the Darwinian principle of the "survival of the fittest" – Sweden was at the forefront since it had a rich resource base. The most important natural resource was the forest, and if it was managed well, Andersson contented, it could give the country and its industry "economic authority" [ekonomisk maktställning] (Sörlin, 1988: 127).

While rejecting "romantic correspondence ideas", Andersson maintained that the character of the people had been shaped by nature (the forest in particular, but also climate) (Sörlin, 1988: 102). Yet, for Andersson, culture was rooted in nature; that is, "the level of culture in a country was directly dependent of the degree to which people have learned to utilize the forces of nature". In this sense, the forest became a "guarantee" if Sweden was to assert itself as a "culture nation", and thus, to "develop forestry, [and to] strengthen the resource base, therefore became a patriotic action of the most excellent kind [yppersta halt]". For example, for Andersson, one such patriotic action entailed the creation of well-managed forests instead of preserving wilderness and bog-soil (Sörlin, 1988: 127). That Sweden had an abundance of and cheap access to natural resources was not only considered as a competitive advantage "in the struggle between industrial nations", but since Sweden had natural resources within its borders, the road to success was "predetermined". Therefore, natural resources were part of a "nationalistic credo" (Sörlin, 1988: 153).

Although it perhaps would be an overestimation to claim that environmental determinism was a leading approach in school geography, an analysis of geography textbooks tells a somewhat different story than this history of academic geography tells. This chapter offers an analysis of the way in which specific ideologies of nature were articulated within environmental determinism, and in turn, how it worked and functioned ideologically. The chapter proceeds in the following way: first, it considers how environmental determinism

[51] This "'physical patriotism'" was part of Selma Lagerlöf's school reading book *The Wonderful World of Nils* (1906-1907) (Sörlin, 1988: 114).

appeared in geography textbooks in the late 19th century and early 20th century; secondly, the chapter more specifically considers the roots and development of, and the ideological workings of environmental determinism; and thirdly, it discusses how environmental determinism perhaps both reappeared and faded out from geography textbooks in the 1940s and 1950s.

Crude environmental (and geographical) determinism in geography textbooks

Throughout the 19th century, many different ideas of nature were expressed. Under the Romantic era, nature had been "idealized, spiritualized [besjälats] and hypostatized", while in the late Romantic and Victorian era nature was "chaos, anarchy and terror", the antidote to "ordered civilization", and thus similar to the ruthless state of nature formulated by Thomas Hobbes (1588-1679) (Sörlin, 1991: 125). Furthermore, with Darwin's theory of evolution as its intellectual paragon, the concept of "ecology" – "'the science about the relationships between organisms and their environment'" – was coined by Ernst Haeckel in 1866 (Sörlin, 1991: 123-124). Or, to take an example from the geography textbook by Roth (1881: 12-13), there was a theological explanation for the conditions prevailing on earth.[52] Yet, under the influence of (social-)Darwinism – Spencer's belief that "societies are social organisms" – and (neo-)Lamarckianism, ideas of nature were changing within geography; that is, "geographical thought shifted in its conceptual basis from natural theology to evolutionary theory". At the same time, this does not entail that "religious concepts" were eradicated (Peet, 1998: 12; see also, Livingstone, 1984, 1992).

As Peet (1985: 319) suggests, the idea of "manifest destiny" and a world ordered by God "no longer sufficed for an age of bourgeois science. Ideology had to be updated to include natural 'scientific' ideas about social evolution and geographic expansion". With an unfolding imperialism, nature could not no longer merely be God-given in the strict theological sense since such conceptions were no longer functional to the specifies of "the new geography". Environmental determinism was a theory provided by the emerging discipline of geography within "the scramble for intellectual turf in what would become the social sciences" (Smith, 1989: 93), and as Peet (1985: 310) argues, environmental determinism was "geography's entry into modern science".

The core premise of environmental determinism – as the term suggests – is that there is a direct and causal link between nature (climate, soil, vegetation etc.) and culture and human society. In the history of geography textbooks,

[52] Olsson (1986: 112) points out that in the oldest textbooks that were part of her study, there were theological explanations for the conditions on earth, by which there was "divine intent behind it all" and humans originated from Adam and Eve.

the ideology of environmental determinism was clearly present in the textbook written by Palmblad (1866):

> People in different parts of the world [världstrakter] have, partly through the surrounding nature's different character [beskaffenhet], partly through their own way of life, obtained a completely different development regarding both temper and mental disposition, as well as colour and body formation. In a temperate climate both body and soul develop in the most advantageous way. In much colder climates the body shrinks together, and the soul becomes treacherous [dolsk] and inert [trög]; in the warmest climates the resiliency of the body and mind enervates and the skin darkens (Palmblad, W.F. 1866: 41).

Palmblad maintained that people develop differently and obtain different characteristics – both mentally and physically – on the basis of regional and natural differences (the character of the environment and/or landscape), their way of life (i.e., their culture in a broad sense) and climate. In such a way, not only is it articulated that an external nature determines human nature, but that 'culture' too in a broad sense shapes human nature. Yet, Palmblad said little about the direction of the relationship between nature and culture; that is, if the different character of nature in any way shapes the 'way of life'. Rather, 'nature' and 'culture' seem to be separated to a certain extent, but simultaneously in an interplay and thus the two determining factors for human nature. By 'human nature', I refer to that notion that people had different tempers[53], mental dispositions and physique as a result of nature, that the body and soul/mind becomes 'treacherous' and 'inert' and that the 'resiliency' of body and mind enervates depending on climate (something which suggests that human nature degenerates in a particular climate). Yet, as it is evidently clear that nature determines (as a form of a simple cause-effect determinism) a set of psychological and physical attributes, it is also clear that the *temperate climate* (Europe presumably) is most advantageous for human physical and mental development; therefore this climate is superior.

In a similar fashion, Palmblad (1866) continued by suggesting that:

> If a European moves to Africa's warmest climate [luftstreck], his colour becomes dark, his muscle power enervated, his mind weak [vekligt] and voluptuous [vällustigt], but he is never transformed into a Negro. Also on the Scandinavian peninsula, Swedes and Norwegians have during many centuries lived amongst Sámi people [Lapparne] and [Swedes and Norwegians] belong to the tallest human tribes [människorstammar] on earth. The Indians of North America have also since prehistoric age lived among Eskimos, this continent's Sámi. These mentioned changes must therefore have occurred in a distant past where the forces of nature were more widely active [verksammare]; a contributing factor might also have been the more or less moral ruin, by which the less

[53] As will be discussed more later on, such an understanding echoes the environmental determinist Ellen Semple's thinking. As Peet (1998: 13) writes, "Semple thought that earth's regions produced people with different 'temperaments'".

> educated first ancestors of human tribes dwindled [hvaruti de mindre fullkomligt bildade menniskostammarnes första ättefäder nedsjunkit] (Palmblad, W.F. 1866: 41).

The climate is again central since it shapes the 'nature' – the intrinsic physical and mental qualities – of human nature, but at the same time, the climate is not fully or entirely determining. As Olsson (1986: 113) contends, with environmental determinism the environment of a particular place determines the characteristics and appearance of the people who live there. If the climate is such an absolute determinant for human nature, then "migrations become a dilemma". Therefore, for environmental determinists it became important to introduce a form of reservation within their argumentation. That is, although Swedes and Norwegians live within the same nature (climate) as the Sami people, they are different from each other and Swedes and Norwegians would not become like the Sami population. In order to explain such a dilemma, it is contended that the "forces of nature" were more powerful in some pre-historic past and these forces gave rise to human differences. By contrast, obviously, the forces of nature in the mid to late 19th century were not as powerful, which means that "differences between Sami and…Scandinavians still exists" (Olsson, 1986: 113).

In the late 1870s, in the textbook by Erslev (1879), it was first suggested that in warmer areas:

> The strong heat makes the people inert…The temperature [värmegraden] is almost the same during a year…The temperate areas [blandade bältena] with their equal variation [jämna omväxling] of four seasons are most conducive [tjänligast] for the human. Heat and cold is here moderate, and **the climate**…is healthy and allows the human to be in an even working pace [jämn verksamhet] during the whole year…(p. 14). In the northern temperate areas, about half of all the land on earth is located, and to this half belong the earth's most important and populous countries, namely Europe, North-Africa, almost the entire Asia except for India and almost the entire North America (Erslev, 1879: 15; bold in original).[54]

> …[The landmasses] display great differences concerning the coastline [kustvidden]…some of them have a more, [and] other a less notched coast. Mostly notched is Europe, which only consists of peninsulas and islands, also North America is very notched. Little notched however is Africa, South America and [Australia], which almost lack peninsulas. Asia has a large total landmass [fastlandsmassa], but also many peninsulas. RITTER [sic] tellingly depict these conditions, as he says: 'Africa is a body without limbs [lemmar], Asia a body with limbs and Europe a body with dominant [förhärskande] limbs'. *In its form, Europe has by nature a great precedence* [företräde] *in contrast to other continents, and this condition has been one of reasons that*

[54] Parts of this was reproduced in Erslev (1881b: 11).

Europe has made it further regarding civilisation (Erslev, 1879: 23, emphasis added).[55]

In the first passage, we learn – similar to Palmblad – that (external) nature shapes human nature; that is, the strong heat in particular areas make the people living there 'inert', while the temperate areas are healthier and more advantageous for humans. Furthermore, given these climatic conditions, the importance of being able to develop in an "even working pace" is also emphasized, which suggests that while nature directly shapes human nature advantageously, nature is the precondition for work. The temperate area, then, in contrast to other areas, provides the capacity to labour and this separates 'us' from 'them'. We will soon examine a similar excerpt and return to this point. Secondly, we learn that the landscape of Europe (its form), and thus the carved coastlines and peninsulas – the "dominant limbs" as they were referred to – were the dominant reason for why Europe was more civilized (and, we should add, superior). In other words, civilization is dependent on, and derived from, the landscape, and accordingly, Europe is more civilized and superior 'by nature'. By grounding civilization within the landscape, there is certainly a (natural) inevitability at work. Importantly, civilization was not given by any divine order or God, rather the landscape had given Europe certain advantages in the race towards a higher form of civilization. Erslev (1879) continued by arguing that:

> In size, Europe is the second smallest among the five continents, although the most important among them. There are several reasons. Europe is located on earth in such a way that its connection to the other of the most important countries is relatively easy…Furthermore, the coastal form of Europe makes it easy to travel by sea to several European countries…Furthermore, the altitude [höjdförhållandena] means that there are no impassable obstacles for transportation [samfärdsel], even the Pyrenees and the Alps had in prehistoric time passable [farbara] passes. Also, the climate is particularly favourable, first, almost the entire continent is located in the temperate belt, secondly, the most northern areas are affected by the warm Gulfstream…The difference between the climate in the north and Southern Europe is also comparatively little: a human from Southern Europe can easily adapt [finna sig] in the climate of Northern Europe and vice versa. To these natural advantages it may be added that Europe's inhabitants belong to a race which in many respects is the most gifted. [Europe's] development has also been so versatile [allsidig] that it has for a long time been ahead of other people regarding both spiritual and material culture [odling]…Only the people of the United States in America can be compared with Europeans concerning culture [odling], but they are also of European origin (Erslev, 1879: 25-26).[56]

[55] This passage was reproduced in Erslev (1881b: 18).
[56] This passage was reproduced in Erslev (1881b: 19).

Despite Europe's smallness, it is the most important continent because of its location, landscape (coastal form, altitude), a "particularly favourable" climate, and in turn, a gifted human race, although it is considered as an additional factor to natural advantages. That is to say, as the passage reads, physical geographic conditions – a term here used to refer to location, landscape, and climate – have not *caused* the "most gifted" race. Rather, race is understood as an independent and additional (natural) factor to physical geographic conditions (a race that possessed internal characteristics). As such, there are 'two natures' at work here – a non-human physical nature and a human nature with internal characteristics – and these combined have initiated, generated and brought forth a development which put Europeans at the top of the hierarchy concerning spiritual and material culture. If nature determines culture – and if culture can be placed on a hierarchical scale given that there is a hierarchy – this suggests that material and spiritual culture can develop and accumulate. But then again, a set of interacting natural factors are the conditions under which culture is developed.

In Roth (1881), we find a passage which mirrors the one developed by Erslev (1879):

> Europe has several advantages in relation to other continents. To it we can count the favourable *location* in the middle of the large continents, almost as far from the cold of the pole as from the heat from the equator; the favouring *climate*, in the west mitigated by the Gulfstream…in the south by the warm winds from Africa… the fortunate *coastal-* and *terrain formation*…whereas communication between people is highly promoted [mycket befordras]; the rivers are generally sailable, the mountains not insurmountable, real deserts…do not exist…a *soil*, highly appropriate for agriculture and cattle-raising, and an abundance of useful *minerals, plants and animals*; a *human race*, highly gifted [begåvad] and since a long time enjoying the blessings of Christianity. A result of these advantages has been that this small continent's people since long have been at the head of [gått i spetsen för] human cultural development [mänskliga bildningsarbetet] and have become happier, more enlightened and more powerful than other peoples on earth, although several of these possess much larger and partly much richer land (Roth, 1881: 26).

Roth contended that the people of Europe and their high cultural development – that they are happier, more enlightened and more *powerful* than other people – simply was the result of a set of interacting and favourable geographic conditions. The location, climate, landscape (coastal and terrain formation, sailable rivers, no deserts, a beneficial soil, a multitude of minerals, plants and animals), and a "highly gifted" (an internal quality) Christian race – i.e., a human nature – had all contributed to the apparent 'fact' that Europeans were more superior than "other peoples on earth". In other words, there was a set of powerful ideas (or beliefs) of nature articulated, which held, and established, not only a hierarchy between European and non-European peoples, but

that 'nature' – both the non-human, external nature and a human nature – caused (determined in a one-to-one correspondence) cultural superiority.

Over the years, environmental determinism continued and evolved. Dahm (1901) proposed an environmental determinist understanding, but with his textbook there was a shifting and/or different emphasis concerning work:

> Europe's **climate** is healthy and moderately warm. Its soil can bring forth everything the human requires to satisfy their most necessary needs…Europe's **people** (with some exceptions) belong to the Mediterranean race and is along with their descendants in other continents the most educated [bildade] of all the people on earth. Arts and sciences stand very high among them [stå mycket högt hos dem]. Through their capacity [duglighet] and their warfare [krigskonst] they control [behärska] about half of all land, even though they are not one-quarter of the earth's population (Dahm, 1901: 3; bold in original).[57]

> The white people are superior to all other people in terms of culture [odling]. They are also superior in physical strength, stamina and courage. Therefore, the coloured is everywhere subdued or displaced when they have met white [people]. The reason for superiority should not only be found in better genes of whites, but principally, that Europe's natural conditions both oblige and allow its inhabitants to work. However, in warmer countries, nature promotes sloth and insouciance [sorglöshet] thereby filling the need of sustenance without more gruelling work; and in colder regions the utter cold paralyzes the power of the body and soul. – The Europeans conquer over 500 000 [kv. mil] with about 500 million inhabitants, Europe excepted (Dahm, 1901: 44-45).[58]

While previous textbooks in different ways have made it clear that there are superior and inferior peoples and/or races, Dahm brought such an understanding to a new level. In the first passage, it is merely ascertained that Europe has a favourable climate and soil (its landscape), but more specifically, European people belong to a specific 'race' – a human nature – which is highly educated. By maintaining such a belief and by articulating the belief in such a way by which nature functions as a precondition, it follows that not only are arts and sciences important 'cultural activities', but through the capacity and warfare of the European people (and their race), they can control land. Thus, climate, soil and race were seen as the preconditions for 'capacity' and 'warfare', and therefore, the conquest of foreign land.

In the second passage, Dahm argued that 'white people' could conquer or subdue other people since they are superior in culture, physical strength, stamina and courage, that is, a set of physical and mental internal characteristics possessed by the 'white people'. In other words, it is within the white people's 'nature'. Yet, although genes – and thus biology – were important to explain

[57] This passage is also found in Dahm (1877: vi). The last sentence is not included in 1877.
[58] This passage is also found in Dahm (1877: 23). Olsson (1986: 112) also quotes this passage.

superiority, it was not purely a matter of better genes. Rather, a non-human external nature – what Dahm referred to as 'natural conditions' – allowed and obliged the people of Europe to work. That is to say, 'white people' were not superior merely 'by nature' – it was thus not 'given' by nature in the sense of physical geographic conditions (location, climate, landscape), or better genes – but precisely because they had the capacity and nature imposed need to work. As such, the capacity to work separated the 'white people' from people in warmer and colder areas given that the body and soul was paralyzed by the "utter cold" and nature in warmer countries "promotes sloth and insouciance". Yet, what having the capacity to work testifies to is an idea that only the 'white people' can 'act'. While 'white people' also are determined by nature, this nature allows for work, and it is through (the capacity to) work that superiority and a set of (positive) internal physical and mental characteristics can be developed and acquired. By contrast, people living in other areas are 'passive' victims of an inhospitable nature.

As I have mentioned earlier, one textbook that dominated the market from the late 1800s to around the 1940-1950s was the textbook by Ernst Carlson (and subsequent authors that republished his textbooks).[59] There are some differences, or perhaps different emphases, both within and between the textbooks published by Carlson himself and those subsequent authors. Concerning the former:

> Physical geography forms the foundation for all our knowledge about the conditions of the earth's surface and thus also for the political. The human activity that has developed [within a country] is to a large extent dependent on [the country's] natural character and climate (p. 1)…*A country's distance from the equator* is essentially determining [väsentligen bestämmande] for its climate and shapes to a large extent both the production capacity and the character of the inhabitants. In tropical countries, the soil provides an abundance and without effort nutrition for the people, which works to relax the character of the people [vilket verkar slappande på folklynnet]. The polar regions' hard irrepressible nature has the same effect for human diligence. In temperate climates, where moderate efforts give the cultivator his bearing, the body and mind is hardened [strengthened] under the struggle for existence (Carlson, 1900: 5; original emphasis).

For Carlson, there was a direct relationship between nature (landscape and climate) and politics, human activity and people's character. Clearly, temperate climate was understood as the most favourable because, in contrast to the nature of other regions, the people are forced to work, and thereby, "the body and mind is hardened". Superiority is again a result of nature. Concerning the latter, i.e., Carlson's textbooks published by Rönnholm, Moberg, and

[59] See Wennberg (1990: 122) for a brief discussion about Carlson's views on geography and the relationship between nature and culture.

Fagerlund, environmental determinism underwent a limited, yet significant shift. First, it was expressed that "*human intervention* has changed the surface of the earth", such as deforestation, lake drainage and agriculture (at the same time, human practice was perceived as "insignificant" compared to the exogenic and endogenic forces of nature) (1924: 27; 1913: 17; 1941: 37-38; see also, 1900: 1). And secondly:

> …[O]ur planet's main parts [the ocean, land and atmosphere] harbour [hysa] **plant-** and **animal life** in varying forms, which essentially are dependent on the character of the environment [omgivningens beskaffenhet]. In addition, there is the **cultural life of humanity** [mänskliga kulturlivet], which also admittedly to a large extent is determined by the character of the environment but independently remakes [the environment] for their own purposes too (Carlson, 1924: 27; 1913: 18; 1941: 38; bold in original).

However:

> The coastal form of a country is of great significance. In this regard, Europe's rich culture and Africa's backwardness are closely linked to the different nature [arten] of their coastal development [kustutveckling] (Carlson, 1924: 36-37).[60]

There was an understanding that while the 'nature of the environment' determined culture, culture also transformed or remade nature. In such a way, there was a reciprocal relationship between nature and culture. Culture, or 'humans', were not merely the product of nature, but had independent powers to transform nature. The causal determinism which we have seen so far was accordingly altered in significant ways. However, while this was the case, the coastal form was at the same time granted "great significance" by contenting that there was a direct linkage between "culture" and "backwardness" and coastal development. In such a way, nature could apparently in a deterministic fashion explain (superior and inferior) human characteristics since these are in this case dependent on and result from the form of nature.

The meaning of environmental determinism

So far we have seen how environmental determinism – and especially the particular ideas of nature that it draws and is dependent on – appeared in

[60] This passage is part of the 1941 (p. 50) edition although 'odling' is used instead of 'kultur'. Furthermore, Carlson drew on the notion that the relationship between land and the "limbs" of a continent were important: "**The proportion between mainland and limbs** are very different for the different continents. Most favourable is Europe, whose peninsulas and islands constitute more than 1/3 of the entire area. For Africa, which is worst off in this regard, the corresponding figure is only 1/50" (Carlson, 1924: 35; bold in original; 1941: 48).

geography textbooks. In these textbooks, the theory of environmental determinism is not unequivocal given that it takes different forms, although there is a constant emphasis on the influence of the landscape and climate. For example, (i) 'culture' together with 'nature' determine physical and mental characteristics, (ii) human nature as in 'race' together with natural geographic conditions determine culture (cultural development/civilization), (iii) natural conditions in the temperate climate are the precondition for 'work', and (iv) there is a reciprocal interaction between nature and culture. Despite these differences, the important point for this analysis is the workings and articulation of ideology.

Accordingly, what is particularly striking is the articulation of a unidirectional determinism by which causality flows from nature (predominantly non-human nature as in landscape and climate, but also human nature to a certain extent) to culture, civilization and certain physical and mental characteristics. That is, there is an undeniable and unmistakeable idea that Europe and Europeans, are culturally superior as well as more civilized 'by nature' (see Olsson, 1986: 119).

In this sense, culture and nature become encapsulated within an 'earthly whole'; or as Castree (2005: 54) phrased it, human culture and the environment were set and understood "within a single explanatory framework". Furthermore, as Livingstone (1994: 141) contends in his discussion of what he calls "climate's moral economy", "moralistic terms" such as enervating, monotonous, lazy, indolent – and we can add sloth, insouciance, courage, stamina, temper, inertness, enlightenedness – were "presented as settled scientific maxims with the result that human mental and moral behaviour is thoroughly naturalized".

Crucially, this superiority is in many ways based on and articulated with how the contradictory relationship between an external and a universal conception of nature is worked out; that is to say, environmental determinism trades on the slippage from externality to universality (Smith, 1990, 1996). Since nature was understood as a powerful structuring force and perceived to have causal power (it is, then, simultaneously *in* nature – nature as essence – to be a structuring force and to have causal power), it is articulated that a non-human and external nature determines human culture, which of course makes human culture fully part of, and subject to, nature. The important point here is that although humans are part of nature, natural differences create differences in human culture. In other words, by being part of a specific nature (the climate and landscape of Europe), culture and civilization could evolve.

Furthermore, while culture and civilization are that which is not nature and thus two separate things, nature and culture are simultaneously causally linked, and culture/civilization derives from, is dependent on, and is the product of a specific nature. Accordingly, before moving further, it might be worthwhile to think through the meaning of culture and civilization, especially considering that these were understood to be products of nature. As

mentioned, and as Mitchell (2000: 14) formulates it, "culture is the opposite of nature. It is what makes humans human". Yet, in the textbooks, there is no uniform definition or understanding of culture. For example, in some textbooks, the Swedish term 'odling' was used, which can be understood in relation to Latin's "cultura", meaning "cultivation" and/or "tending".

Over the course of history, "tending" did not merely refer to plants and animals, but "the tending of human development, particularly of the human mind" (Mitchell, 2000: 15). This echoes a different understanding of culture that one textbook used, namely the notion of "human cultural development". Culture became something "to differentiate the good from the bad, the *cultivated* from the unruly" (Mitchell, 2000: 15; original emphasis). This brings us to the idea of civilization or civilizing. As Williams (1977: 13) notes, civilization meant the "orderly", the "educated", and the "polite". Nonetheless, civilization took on a broader meaning, or rather two meanings "which were historically linked: an achieved state, which could be contrasted with 'barbarism'…[and] an achieved state of development, which implied historical process and progress". As such, it was a powerful way of hierarchically separating people and asserting that some are more superior.

In the textbooks, culture, civilization, and internal characteristics, we might say, have their origins in nature. Culture is like an organism that can grow (or not grow) depending on (the conditions of) nature, and therefore, culture could evolve under the influence of nature (Mitchell, 2000: 15). Unequivocally, proposing such ideas of a determining environment establishes and articulates not only a powerful ideology, but as part of that, a rationale for the apparent superiority of Europe. In this way, environmental determinism constitutes a distortion.

Following from this, I will suggest that environmental determinism was an ideology in two (related and intertwined) ways: first, through the way in which nature was conceived as a determinant. A central part of this is the textbooks' assertion regarding the (in)capacity to work. And secondly, it was a "legitimation theory" in the sense that geography was promoted by, intricately bound up with, and served the interests of imperialism and capitalism (Hudson, 1977; Peet, 1985; Smith, 1994). That is, even if "environmental determinism…began as a search for truth…[it] ended as the justification of imperialism" (Peet, 1986: 281). Many of these textbook passages were written and published in the midst of imperial expansion, and at the same time of the emergence and establishment of the "new geography". Quite astonishingly, European imperialist powers increased their control "over world space from 35 percent in 1800 to 85 percent in 1914". Especially from the 1870s, there was "a particularly severe struggle for the conquest of external space, ending in Euro-American control over almost all non-European societies…These dramatic events demanded explanation" (Peet, 1985: 311). However, while recognizing this we must simultaneously be careful not to reduce environmental determinism into *only* a "legitimation theory". In what follows, this will be developed to

more fully grasp the *workings* of ideology and how environmental determinism was articulated with its broader historical context.

The historical development of environmental determinism

Environmental determinism has a long history (stretching back to the antiquities). Peet (1985: 311) claims that Montesquieu, Hegel and Ritter all "relied at least in part on environmental differences to explain regional historical development". Religion, moral, legislation, cultural traits and human physiology were geographically conditioned and the way in which humans were constituted by the environment led Montesquieu to assume that people living in colder climates "were more vigorous since the fibres in their cardiovascular systems contracted in cold air and stimulated faster flowing of the blood" (Livingstone, 2011: 4). On the contrary, warmer climates had the opposite effect by relaxing and lengthening the fibres. With this form of environmental determinism, Montesquieu (1750: 327, cited in Livingstone, 2011: 4) wrote that "The empire of the climate is the first, the most powerful of all empires". Accordingly, before the late 19th and early 20th century the climate was understood as an important natural factor shaping both 'culture' in a very broad sense, and 'human nature' in different ways.

For the formation of geography, (social-) Darwinism was clearly important, and environmental determinism was grounded within such an evolutionary theory. As Castree (2005: 54) maintains, it was proposed that societies could be equated with how species developed. With that, prominent figures such as Herbert Spencer "popularised the idea that competition within and among societies is 'natural' – an idea that justified European colonialism as much as a belief that in any society the 'fittest'" – or perhaps the most cultured, civilized and educated – "rise to the top of the hierarchy". However, as many have demonstrated (Peet, 1985; Livingstone, 1992, 2011; Mitchell, 2000; Castree, 2005), it was perhaps more of a neo-Lamarckian than a Darwinian version of evolution. First, neo-Lamarckism argued that evolution was faster than what Darwin had contended, and that evolution had little to do with "random variation". Secondly, neo-Lamarckianism was an idea that an organism could transfer obtained characteristics to its offspring; that is, "qualities acquired by an organism during its life-experience could be directly transmitted to its progeny" (Castree, 2005: 54).

In such a way, neo-Lamarckians stipulated not only that qualities can be accumulated, but that "the directive force[s] of organic variation" were "will, habit, or environment" (Livingstone, 1992: 188; Mitchell, 2000: 17), and therefore, evolution was not driven forward by "a 'blind' process of competition, variation and adaptation" (Castree, 2005: 54) as Darwin had argued.

Environmental determinists "argued that the causal mechanisms for cultural behavior were to be found in the environment. Certain environmental conditions created certain habits", and "these habits were then transmitted *naturally* to successive generations" (Mitchell, 2000: 17). Since nature provided different conditions and since it was assumed that nature determined cultural differences, cultures apparently 'grew' as a result of a specific nature and was passed on from generation to generation (Mitchell, 2000).

This way of thinking became important to geography. By referring to the work of Livingstone (1992), Castree (2005: 54) contends that "evolutionary theory…furnished the early geographers with a means of bringing humans and the environment within a single explanatory framework". "In its 'strongest' version", Castree (2005: 54) writes, "this framework proposed to link non-human nature with human nature (bodily and mental) and human society". Such an explanatory framework was certainly present in Swedish geography textbooks as their authors linked non-human with human nature and perhaps 'culture' more than human society, which is to say that they (deterministically) linked physical geographical conditions, 'race' (human nature), culture and cultural development, and physical and mental characteristics (human nature). However, I believe it is fair to say that we only see traces of neo-Larmarckianism since, for example, textbooks said little or nothing about transmitting acquired characteristics between generations.

However, given Carlson's emphasis that "*human intervention*" had shaped the earth, and the reciprocal relationship between nature and culture, we should not assume that environmental determinism (along with its intellectual sources of [social-]Darwinism and [neo-]Lamarckianism) alone influenced geography. Rather, there were thinkers closely associated to geography that were, we might say, in opposition and provided different understandings. George Perkins Marsh (1801-1882), a geographer, philologist and conservationist, who authored the book *Man and Nature* (1965 [1864]), expressed in a letter in 1860 the view that "…whereas Ritter and Guyot think that the earth made man, man in fact made the earth" (Lowenthal, 1953: 213; see also, Olwig, 1980; Sörlin, 1991; Cronon, 2003). This, Marsh claimed, had always been the case, and so it will be (Sörlin, 1991: 118). Marsh's book can be viewed as a "symptom" of rapid natural changes caused by population growth, urbanization, the transformation of agriculture and industrialization, and it testifies to a concern about the conditions of nature and the human impact on the environment. As an early expression of an "environmental awareness" published about 100 years prior to Rachel Carson's *Silent Spring* (although Marsh's concern was about "geographical destruction" rather than toxins), his book became a "bestseller" and influenced legislation and environmental debates in many countries (Sörlin, 1991: 117-121).

Furthermore, Peter Kropotkin (1842-1921), a Russian anarchist and geographer, published, as another example, *Mutual Aid: A Factor in Evolution* in 1902. He was influenced by Reclus and his thinking was partly a reaction

against social-Darwinism as "he took exception with the notion of fierce competition as the primary tenet of evolution and in particular its use as a rationalization for the dominance of capitalism". In his work, Kropotkin "sought to offer a scientific basis to the idea that mutual aid was in fact the natural order of things". Through fieldwork in Siberia, Kropotkin "concluded that mutual aid and voluntary cooperation are the most important factors in the evolution of many species, including humans, by enabling their capability to survive" (Springer, 2013: 50; see also, Livingstone, 1992: 254-258). Such thinkers thus put forward an antidote to environmental determinism and its theoretical basis. In turn, their work demonstrates that not all forms of geographical knowledge were linked to the 'new geography' and thus produced to serve the needs of imperial powers.

But such ideas seem to have little influence on Swedish geography textbook writers who were mainly concerned with articulating that European cultural superiority was naturally given and determined by external nature, as well as that external nature determined certain internal physical and mental characteristics (human nature), culture and civilization – a set of distorted ideas of nature were at work.

Nature as a determinant

If culture (and so forth) was conceived as mechanistically caused – in a one-to-one correspondence – by nature, or if physical geographic conditions were grasped as autonomous factors directly causing culture, this suggests – as mentioned – first that nature is at one side of the spectrum and culture at the other side (nature as external), and secondly, that human culture is fully part of, subject to and the product of nature (nature as universal) (Smith, 1990). In this sense, the ideology of nature is deeply and heavily implicated by turning culture into something organismic. The problem with such an ideology, and the ideological *work* that it does, is that human culture is not only naturalized and eternalized, but universally and endlessly structured by the forces and forms of nature.

If we are fully determined by external nature – and thus simultaneously part of nature – the human relation with nature becomes ahistorical; that is, "the underlying motor of history [becomes] the active force of a conscious Nature" (Peet, 1985: 327). Environmental determinism fails "to realize the profound differences between human beings and the rest of nature", which is to say that the "productive power of…human labor" – a conscious and "self-directed" process (Peet, 1985: 327) – becomes distorted. "In the case of humans, therefore," Peet (1985: 327) writes, "natural determination is countered by social determination". In other words, since the human-nature relation is an internal and dynamic relation, we have the capacity to produce nature (and ourselves). Consequently, the question of social agency – and thus the way in which labour actively transforms nature – must not only be inserted but taken

seriously. However, some nuance is key here. Clearly, it should not be argued that environmental determinism denied the importance of labour or that there was no reciprocal relationship between nature and culture. On the contrary, labour – or the (in)capacity to work – remained central given that some textbooks explicitly emphasized the capacity for the *Europeans* to work, while other people clearly had not the capacity to work. The important point here is that the (in)capacity to work was conditioned by, or allowed for by nature, and by such a logic, labour as a universal nature-imposed necessity (as Marx would have it) becomes a way to divide people hierarchically. In other words, ideology works by distortion since it was asserted that *Europeans* were particularly suited to work; that is, labour was central but only for Europeans.

This is one way in which environmental determinism worked ideologically as a powerful distortion. Yet, we must also turn to how environmental determinism was a "legitimation theory".

A legitimation theory

Within geography, some of the key architects of environmental determinism were, to name two, Friedrich Ratzel (1844-1904) with his *Anthropogeographie*, and Ellen Churchill Semple (1863-1932) – a student of Ratzel in the 1890s (Peet, 1985) – with her *American History and Its Geographic Conditions* (1903) and *Influences of Geographic Environment* (1911).[61] Ratzel was a German geo-political theorist who developed the concepts of "organic state" and "Lebensraum". For Ratzel, the state was a "living thing", and as a "living thing", the state needed to grow and expand in order to reproduce itself (Mitchell, 2000: 18). The way in which Ratzel developed his ideas about the necessary "Lebensraum" of the state, Livingstone (1992: 201) argues, created "a naturalistic theodicy that justified the imperial order in the language of scientific geography".

Semple successfully managed to combine evolutionary science and natural mysticism in order to legitimate imperial expansion. That is to say, that some people would dominate or rule over other people "was attributed to a suprahuman force – the will of Nature as expressed in varying environmental capacities, racial abilities, and mentalities" (Peet, 1985: 321). Semple, just like Ratzel, thought that humans were born in the tropics, yet they grew up in the temperate region, by which nature subjected them to compulsion. Races that remained in the tropics, however, "suffered arrested development" (Peet, 1985: 322).

[61] While it is common to label Semple as an environmental determinist, Kobayashi (2014: 1104) argues that "Semple is often lumped uncritically with environmental determinists…her approach was not so simplistic". Although Semple made judgements about primitive and wild people "and assumed a division of the world according to races…[Semple] claim[ed] that human-environmental relations are infinitely complex".

In Peet's (1985) estimate, environmental determinism served the interests of imperial powers and therefore it functioned as a "legitimation theory". If we follow Peet's (1985) argument that imperialist expansion needed a legitimation theory, then geography provided such a theory by developing environmental determinism. Environmental determinism was, Peet suggests, "geography's contribution to Social Darwinist ideology, providing a naturalistic explanation of which societies were fittest in the imperial struggle for domination" (1985: 310). Or put differently, the "use of naturalistic thought was to legitimate the expansionary power of the fittest. Geography's role in the making of this ideology *was to explain fitness in the new 'scientific' terms of environmental causation*" (1985: 327; emphasis added). Since the European people were culturally superior 'by nature', they were the 'fittest'.

If we follow Hudson's (1977) argument that geography was promoted as a tool for imperialism, geography and environmental determinism were born with a purpose. Hudson (1977: 39) argues that racism was central within geography, but that it became even more expressed at the time of overseas expansion.[62] Within geography, as we have seen, how physical geographic factors determined culture (and civilization) was one of the key questions. In addition to Ratzel and Semple, one can also mention the work of Huntington (1915). He maintained that "high levels of civilization" were only possible in "regions of stimulating climate" while the "monotonous tropical heat had a stunting effect on human development" (Hudson, 1977: 39). The climate, Hudson contends, was perceived as perhaps the most important factor which provided "Europeans their supposed superiority in the struggle for survival" (1977: 39). Climate and the effects it had were considered to be more important than racial inheritance. In the 'Age of Empire', environmental determinism provided a powerful explanation since in Europe and North America

> …it was a widely held view that the character and achievements of the peoples of the world were largely determined by physical or 'geographical' factors, especially climate. The supposed superiority of European peoples and their descendants in suitable environments overseas had been determined by Nature which had also condemned less fortunate peoples to inferior status. The white man, therefore, saw himself as the natural inheritor of the world's wealth and master of its peoples. Thus environmental or geographic determinism was used as an ideological buttress for imperialism and racism (Hudson, 1977: 39).

Given that environmental determinism was deployed as an ideological buttress for imperialism, it was, as Peet (1985: 322) argues, "to legitimate as naturally predestined the spatial expansion of the dominant imperial powers". Certainly, environmental determinism must be understood as a "legitimation

[62] As Olsson (1986: 120) importantly notes in her textbooks analysis: "The idea of the own race's superiority had been a part of the politics of expansion. Colonial powers used racism to explain and justify their actions".

theory" given the ways it could be deployed and used to rationalize and justify the events occurring at the time. However, this is not to argue that environmental determinism can be reduced to the needs of imperial powers, or to argue for a mechanistic functionalism. Rather, environmental determinism, and the ideologies of nature at work, can be viewed as articulated with the spatial expansion of imperial powers, and thus the needs of a globally expanding capitalism. There is no necessary correspondence and ideology is never guaranteed; rather, ideology may be – under the right conditions – functional to the services of imperialism. If viewed as articulated, it also follows that, although it did serve the interests of imperialism, "its manifold dimensions cannot be reduced simply to these forces" (Livingstone, 2011: 10; see also, Livingstone, 1992: 220) Without going into too much detail, environmental determinism, Livingstone (2011: 10) argues, "has shaped attitudes to labour practices, race relations, housing policies, and the management of colonial regimes, sometimes nourishing an imperial mindset, on other occasions underwriting cultural pluralism". Furthermore, it shaped "questions about human anatomy and disease, mental health and moral philosophy, medicine and hygiene, plant and human acclimatization". Last but not least, it attempted to understand and explain "human variation across space" (although "it was no good at explaining precisely [this]") (Mitchell, 2000: 19), and it provided "a scientific basis" for geography to become accepted as a university discipline (Livingstone, 2011: 10; Smith, 1989). Thus, "its manifold dimensions" should not be underestimated.

Furthermore, although the need to legitimate was greater among colonial powers, there was in Sweden a need to legitimate the exploitation of natural resources and "the Swedish society's contact with the Saami people" (Sörlin, 1988: 174). Just as national parks were created on traditional Saami territories, the exploitation of natural resources was carried out on these territories too. As Mels (2002: 143) writes: "The bond between the Swedish people, their 'common history', and the soil implied in park planning never included the Saami. Represented as 'part of nature', they were prevented from being actively involved in the 'civilized' act of planning".

However, that a "legitimation theory" was needed is not to suggest that the form of environmental determinism surveyed here was used. Although such a form of environmental determinism might have been beneficial, the arguments and the form of environmental determinism that appeared in Sweden seemed to have been of a slightly different nature.

As noted earlier, the "northern space", and the conquest of it, was important for several reasons, such as creating and reinforcing Sweden's northern identity, and – in the struggle between industrial nations – to develop economic authority and a higher level of culture. Concerning the latter, the "geodeterministic" argument played a central role. That is to say, Sweden's status as a leading industrial and cultured nation was directly dependent on its rich resource base and the ability to utilize resources; or put differently, the rich

resource base was necessary in order to compete with other industrial nations and to develop culture. The "geo-deterministic" argument could therefore function as a tool to legitimate the conquest of the "northern space".

Furthermore, "An underlying premise for most imperial-theoretical thinking", Sörlin (1988: 175) writes, "has been the belief that the western civilization is [by nature or not] superior. Racism and evolutionary currents have reinforced this belief. The idea of progress has been central". The arguments that were used in the "international arena" were similar to those used in Sweden (ibid: 175-176). Knut Olivecrona, a justice in the Swedish Supreme Court, clearly expressed that the mining industry, sawmill industry and the construction of the railway were means to develop civilization. "The Saami people", as Sörlin (1988: 176) puts it, "had no eternal and unconditional right to the mountains [land] since they at their nomadic stage of development were not able to utilize existing natural resources effectively". By this logic, culture and civilization could not develop since "The subjugation of nature, the converting of potential resources to active in the service of humans, were interpreted as cultural achievements of the highest sort. Material culture was a precondition for spiritual culture [odling]" (ibid).

Similar ideas were expressed by the industrialist Frans Kempe. Kempe held evolutionist and deterministic views, and for him, to prevent the development of industry was to "prevent progress and culture". Natural resources were means or tools for evolution (civilization was, according to Kempe, defined by "the ability to utilize natural resources" [ibid: 178]), and they would, at some point, be exploited. That Norrland (the northern parts of Sweden) would go through the same development as England was naturally determined (ibid: 177-178). In turn, the development of industry, as it could increase the population numbers, was a way to restrain emigration (ibid: 178).

Although environmental determinism was a way for geography to be treated as an important discipline, it became "socially dysfunctional" in the 1920s (Peet, 1985: 327). In the 1920s, at least in a US context, environmental determinism was vanquished. On the one hand, it could not provide an adequate explanation of "human variation across space" (Mitchell, 2000: 19). On the other hand, it was no longer relevant as a legitimation theory as "the period of active European colonial expansion was drawing to a close…the space of the globe was increasingly closed" (Mitchell, 2000: 19; see also, Smith, 1990). From the perspective of geography textbooks, however, this did not mean that environmental determinism entirely disappeared.

The dying breaths of environmental determinism

Environmental determinism and the articulation of ideologies of nature continued – through the textbooks by Carlson – perhaps beyond the point of its own legitimacy. In this section, we will not only survey how environmental

determinism perhaps continued even further beyond this, but – in contrast to Carlson's textbooks – how a cruder form of environmental determinism (re)emerged in the 1930s. In the textbooks by Swedberg (1930) and Olsson (1937), the (in)capacity to work was again at the centre:

> For the most part, Europe has an *excellent climate for work* [arbetsklimat]. The best conceivable climate from a working perspective [arbetssynpunkt] is considered to be one where the annual average temperature amounts to + 10°…It is generally known that the tropic's constantly high temperature to a high degree acts disparagingly [nedsättande] on the human capacity to work [mänskliga arbetsförmågan], and the extremely long and dark winters of the polar areas also in many respects have a disadvantageous impact on the forces of people's body and soul [kropps- och själskrafter]. Reversals of the weather [i.e., seasonal variation and temporary changes]…keep body and mind resilient and effective in the work. People's capability and energy is considered the highest in countries around the Nordic Sea and in North America among the larger lakes. A suitable climate correlate in these areas with a capable [duglig] race (Swedberg, 1930: 69; original emphasis).[63]

> Europe has an exceptionally favourable and mild climate. Neither cold or warm, drought or rainfall, storms or other atmospheric phenomena occur with the same strength as in other continents. The largest part of Europe lies within the *temperate zone* in which its changing weather forces the human to work and [to use] foresight [och förutseende] but is at the same time hardening [härdande] and enables a highly increased [uppdriven] work intensity. Thereby, Europe has been able to become a cultural hearth [kulturhärd] (Olsson, 1937: 27).

In many ways, these excerpts are similar to those from the late 1800s and early 1900s, and especially the one developed by Dahm (1901), who also put an emphasis on work. For Swedberg, the tropical heat "acts disparagingly" on the capacity for work and the polar areas have a negative impact on 'human nature'. This was apparently "generally known", which is to say that this constitutes – or should constitute – common sense. The European climate with its annual average temperature of 10 degrees Celsius is particularly favourable for work, and reversals of the weather allows for certain important characteristics or qualities to be developed and maintained, that is, a resilient and effective body and mind, and in turn, capability and energy.

[63] Parts of this passage are quoted in Olsson (1986: 113). Furthermore, a world map accompanied the text. The map depicted "The level of Europeanization of the population" [Befolkningens europeiseringsgrad] and was based on statistics: the number of schoolchildren in relation to the population, the value of foreign trade per capita, the density of the railway network, and the number of postal items [postförsändelser] per capita in the year 1905 (Swedberg, 1930: 69-70). The map distinguishes between four levels of Europeanization: what were referred to as a Nordic, Mediterranean, Levantine and Oriental. Surprisingly, the Nordic, i.e., Europe (but also the western and eastern parts of the USA), was most Europeanized.

But there was also a more specific form of *geographical* determinism at work here. Although a form geographical determinism always is implicated, such as the temperate region and/or climate, Swedberg was very detailed in the sense that two regions were of particular importance – countries around the Nordic Sea and the larger lakes in North America – and it is at those regions which climate and "capable race" correlate to a maximum degree. By suggesting that racial character is constituted by nature in such a way, one can notice that there are similarities – to a lesser or greater extent – between Swedberg and Huntington's work. As Livingstone (1994: 141) remarks, Huntington constructed "charts of the distribution of genius, of health, of civilization, and so on, and correlated these with a chart of what he termed 'climatic energy'". Hence, in Huntington's (1924: 232; cited in Livingstone, 1994: 141-143) words, "The similarity of the maps of civilization, genius, health, and climatic energy is so clear that it speaks for itself. In each map there is the same dark area around the North Sea". Maps, then, proved to be a powerful tool for naturalizing the claim that the climate shapes health, energy and the level of civilization. Yet, of particular importance here is the very specific geographical and environmental determinism, by which the superiority of the area around the Nordic Sea is emphasized.

For Olsson (1937), the climate was obviously a crucial determinant for culture. Not only is the climate balanced, but the weather of Europe forces humans to work, to use foresight, and in turn, it is hardening and allows for a high level of work intensity. "Thereby" – making the causal link in a rather direct way – Europe is a cultural centre. What these authors articulated – needless to say – is an undeniable linear and unidirectional geographical and environmental determinism. There is a direct relationship – mediated by the (in)capacity to work – between climatic conditions and, on the one hand, human nature considering both 'race' and certain physical and mental internal characteristics, such as a resilient and effective body and mind, and on the other hand, the level of culture.

Towards the mid 1940s and mid 1950s, we find some of the last excerpts demonstrating a crude form of environmental determinism. Under the headline "The human races and their cultural significance", Nelson & Stolpe (1945) suggested that:

> The negro [negrida] race belongs just as markedly to the tropics as the white race to the temperate areas. Only a few percent of…[of the former] live, if North America is excluded, outside the tropics [vändkretsarna]. Regarding aptitude [begåvning], particularly creative spiritual ability, the negro race is inferior to the white and yellow [races] (Nelson & Stolpe, 1945: 133).

> To an even lesser degree than the question of the body characteristics of races have scientists agreed on the specific *spiritual features*, that distinguish different races. The white as well as the Mongolian races exhibit both high standing

> [högt stående] and more primitive cultural people [kulturfolk]. That the Negroid [Negrida] races cannot compete with the other racial groups regarding culture seems to be partly related to the [fact that] negro people are mainly distributed [ha sin huvudutbredning] within the tropical zone where the climate prevents the hard working pace [arbetstakt] that can be developed in more temperate widths. It is possible that what we consider as evidence of the white race's hereditary superiority, to a significant extent is a result of favourable climatic causes. When moved to the tropics, the whites mainly keep their enterprise [företagsamhet] and energy for [only] a few generations (Nelson & Stolpe, 1945: 134).[64]

First, it was acknowledged that it is difficult to scientifically distinguish between different 'spiritual features' among different 'races'. Spiritual features, in turn, were connected to culture; or more accurately, a hierarchical scale of culture since there are primitive and high standing cultures. One 'race', however, cannot *compete* with other 'races' culturally because of nature. That is to say, the nature (climate) of the tropical zone restricted or prevented people from engaging in a "hard working pace", something which appeared to be necessary to raise the level of culture. This certainly establishes a direct linkage – a determinism – between different environments and different levels and culture. While higher culture is not possible for 'them' because of nature, by contrast, in the temperate climate the 'white race' can perform work and achieve a higher level of culture. In such a way, not only did culture grow under the influence of nature, but the superiority of the white race was explained by favourable (external) climatic conditions (a superiority that would degenerate under the influence of different climatic conditions). Heredity, however, was important but still downplayed for explaining superiority. This mirrors the argument by Hudson (1977: 39) that instead of racial inheritance the climate was a more important factor for the apparent superiority of Europeans.

In the 1950s, for example, Näsmark et al. (1956) – maintaining that Europe has "AN EXTRAORDINARILY FAVOURABLE CLIMATE [sic]" (1956: 18) – stated that:

> In several respects, Europe is the continent that offers the best living conditions for the human. Despite that Europe…is the second…smallest continent, about 1/6 of the earth's population lives there. Europe is the main residence for the white race and especially in recent times [under nya tiden], Europeans have

[64] Parts of this passage are quoted in Olsson (1986: 113). Furthermore, it is interesting to note that Nelson, a professor at Lund University between 1916-1947, responded to criticism targeted against one of his textbooks (whether it was this particular textbook remains unclear). Nelson (1957; cited in Wennberg, 1990) argued that he had always emphasized a variety of factors determining the cultural landscape [kulturbygd], that he had never been an environmental determinist, and additionally, he had critically balanced the influences of nature. At least in his research, he apparently never considered himself as an environmental determinist. However, since the textbooks is co-authored with Per Stolpe, it is certainly possible that Stolpe wrote this particular passage.

> played the most important role in world history. From the small Europe as a centre, large parts of the world have more or less completely been placed under the white's domination (Näsmark et al., 1956: 5).[65]

Furthermore, it was understood that "Europe has an excellent location in the centre of the hemisphere [landhalvklotet]" (1956: 5). Accordingly, environmental determinism continued to appear in the 1950s given how it was expressed that Europe's climate and living conditions were regarded as superior (a nature which we are part of), Europe's location was "excellent", Europe was inhabited by the 'white race', and the way in which this was connected to European colonialization.

Nelson et al. (1955: 13; see also, Nelson & Stolpe, 1945: 13) made it clear that Europe, with regard to climate, is a "favoured continent" [gynnad världsdel] in the sense that there are no "extreme" temperatures or precipitation. Therefore: "Relatively few are the areas in Europe where nothing can grow, either because of too little heat or too little rainfall…Nor does Europe have any areas where excessive heat and abundant rainfall bring forth such a lush vegetation that the human has difficulties mastering it". Similarly, as Europe's climate was viewed as favourable, the vegetation was in a direct linkage favourable too. With such a determinism, humans were perhaps not fully determined by nature, but rather such natural conditions were a precondition for the apparent mastery and/or domination of nature (nature as external).

Furthermore, Nelson et al. (1957) argued in a less deterministic way that:

> *Technology* and rising *general culture* among a people can overcome negatively acting [negativt verkande] natural factors, but to varying degrees under different stages. Human factors often have a *very strong* or *crucial* significance, but human resources are of course not unlimited in the struggle against an often inhospitable nature (Nelson et al.: 1957: 51; original emphasis).

In such a way, it was articulated that although "human resources" are not entirely "unlimited" in the struggle against nature, significant "human factors" (i.e., technology and culture) were important to overcome nature, which is to say that there was more of a reciprocal relationship between nature and humans. Yet, it is important to acknowledge that this merely applied to those that have developed technology and culture. Sellergren (1963: 25-26), in turn, suggested that "the human has in different ways adapted to climatic conditions or taken measures that have counteracted the disadvantages of the climate…With the help of technology, the human has successfully managed to overcome the difficulties of the climate…". As two examples, Sellergren mentioned air conditioning in warmer areas and the heating of housing in colder areas. Whether this was a result of the quite substantial debate among geographers in the

[65] This was also accompanied with a map with Europe at the centre. The caption stated: "Europe has an excellent location in the centre of the land hemisphere [landhalvklotet]".

1950s about the role of environmental determinism in school geography – a debate that was triggered by a dissatisfaction with "environmental deterministic models of explanation" (Wennberg, 1990: 132) – remains unclear, these last excerpts nonetheless testify to not only a less crude form of environmental determinism but a less deterministic understanding of the relationship between nature and human culture.

Concluding remarks

For almost a century, environmental determinism appeared in geography textbooks. That environmental determinism and ideologies of nature were (re)produced and (re)articulated in textbooks and their authors should – following Peet (1985: 325) – not be understood as the "the perversion of…individual author[s] but from adherence to a form of analysis that emphasized the natural qualities of the human being". In other words, these textbook authors were part of a historical context, and in this sense, they were diffusing and articulating a form of common sense. This common sense was ideological in two (related) ways. On the one hand, ideology worked as distortion by naturalizing culture (and accordingly, different natures determined different levels of culture) and by asserting that Europeans, by nature, were particularly suited to work, which then became a way to divide people hierarchically. One the other hand, ideology worked as a "legitimation theory". These understandings were crucially dependent on the external and universal conception of nature, by which nature was conceived as a powerful structuring and determining force and we (our humanness, culture) were simultaneously part of and a product of nature. But environmental determinism was not something static and unequivocal; rather there were historical shifts. Prior to Carlson's textbook, there was a crude form of environmental determinism and the emphasis was on landscape and climate (but also 'race') as that which determined culture and human nature, while Carlson's textbooks expressed both continuity and change. With Carlson's textbooks, a crude form of determinism continued, but it was also maintained that there is a reciprocal relationship between nature and culture. In textbooks in the 1930s and 1940s, this crude form continued but the emphasis was on climate (rather than landscape) as that which determined culture and human nature. Yet, as I will come back to in the thesis, even though environmental determinism faded out in the 1950s and 1960s, it did not vanish but appeared in other forms after the 1950s. "The ideology of nature" continued to be of importance.

Chapter 6 – The idea of race

In 1921, the Swedish parliament unanimously decided to create The State Institute for Racial Biology[66] in Uppsala, and Herman Lundborg served as its leader (director) between 1922 and 1935.[67] The Institute's main purpose was the study of eugenics and human genetics (or as Hagerman [2015: 10] puts it: "The mission was to save the Swedish people"). Several prominent Swedish figures were in favour of the Institute, and for example, the Social Democrat Arthur Engberg argued for the creation of the Institute by saying "we have the fortune to possess [äga] a race that so far is quite unspoiled [oförstörd], a race that is a carrier of very high and very good characteristics" (cited in Hübinette et al., 2012: 32). During the first half of the 20th century and with support from the 'scientific' enterprise of eugenics, laws were successively passed with the aim to "maintain and strengthen the unique pureness and exclusive homogeneity which one imagined only existed among Swedes" (Hübinette et al., 2012: 31). Among many things, there was an abortion law, prohibition against contraceptives, the introduction of racial biology in (geography) education and in the army but also a more restrictive migration policy with the intention to preclude "non-Aryan" people from immigration and thus to avoid miscegenation with "white Swedes". Furthermore, there was a sterilization programme geared to prevent the "degenerated", the "unfit" and the "deficient" to reproduce, a policy that effected 60,000 people (Hübinette et al., 2012: 31).

The Institute was not created in a vacuum but signalled perhaps the formal institutionalization for the study of eugenics and racial biology; that is, while the Swedish Society for Eugenics was established in 1909 (Ripenberg, 2019: 29) and the Mendelian Society was founded in 1910 (Björkman, 2012: 38), the constitution of the Institute "entailed the culmination of the eugenics movement in Sweden" (Broberg & Tydén, 2005: 42). While there was an

[66] Henceforth referred to as 'The Institute'

[67] In an essay from 1934, Herman Lundborg argued for eugenics, colonization and for saving Sweden and the west "from the dangers of degeneration". He made references to Hitler and "praised the national socialist programme". Furthermore, urban society, the proletariat, miscegenation and that the "unfit reproduced in a higher pace" were considered as threats to the west (Ajagán-Lester, 2000: 140). Furthermore, as Hagerman (2015: 11) maintains, Lundborg's research was more than an "apotheosis of the Swede". His racial biology included an "explicit denigration of others", and it was part of the "nation state's pursuit to assimilate [utilize] natural resources in areas where these 'other' [the Saami predominantly] lives". Lundborg conducted extensive research in these areas, and in this way, he provided "a 'scientific' justification" to the events occurring at the time, that is, the superior had the right to exploit.

anthropological tradition of Swedish eugenics, one must also notice the emergence of genetics and plant breeding institutes (Broberg & Tydén, 2005: 26-28). The eugenics movement early on maintained a belief of a "distinctive Nordic race". For Lundborg, eugenics was the "nation's salvation", and while he surely recognized the role of the environment, he "more than others…claimed as a tenet that 'inheritance is everything'" (Broberg & Tydén, 2005: 30). As the Institute was debated, advocates not only saw a value of maintaining the "Swedish racial group [folkstammen]", but that the nation could benefit in the same way the nation benefitted from the plant breeding institutes (Broberg & Tydén, 2005: 38).

'Race', of course, has deeper historical roots. It was during the 18th century and the first half of the 19th century that the idea of 'race' was formulated. For example, Carl von Linné with his *Systema naturae* (1977 [1735]) connected humans to the biological idea of different 'races'.[68] Later on, Linné´s work was used to mark racial biology "as a particularly Swedish concern". Around the 1840s, Anders Retzius followed by introducing the so-called cephalic index, an index based on a division of different skull forms (Broberg & Tydén, 2005: 23; Hübinette et al., 2012: 30; see also Broberg, 1995). With the creation of SSAG in 1887, Gustaf Retzius (Anders's son) was a leading figure. Between 1897-1898, SSAG conducted a survey of the Swedish population. The result – based on 45000 conscripts and published in *Anthropologica suecica* (1902) (Broberg & Tydén, 2005: 26) – showed that Sweden had "the purest branch of the Germanic rase in the entire world" (Lindquist, 1997: 44; see also, Hagerman, 2015: 22). In an article from 1909, G. Retzius described the "Nordic race" as a "natural aristocracy" that was characterized by several "heroic virtues" while other European 'races' was "less noble and more suitable for repetitive industrial work" (Ripenberg, 2019: 41).

Transformations of society are important to understand this concern with the population, 'race' and eugenics. Emigration, urbanization, the de-unionization with Norway in 1905, the dissolution of the estate society, and the development of a working class activated questions of identity, community, nation, and Swedishness (Ajagán-Lester, 2000: 71). Emigration entailed, some argued, that the nation had lost its "best and juvenescent blood", and industrialization – given the conditions it generated – was not only "blamed" but "judged from an unreflected Lamarckianism – that the period's mental and physical environmental change accumulated dross which all the faster worsened the people" (Broberg & Tydén, 2005: 18).

Textbooks reflected these developments. Ripenberg (2019) discusses Tingsten's (1969) study *God and motherland: studies of a hundred years of school*

[68] In the second half of the 19th century, "the idea of race" started to imply, perhaps to a greater extent, "its biological [and] physical connotations, as 'race' was used to make sense of both European history and expanding colonialism" (Mitchell, 2000: 236; see also, Ajagán-Lester, 2000: 70).

propaganda. According to Tingsten, Swedish textbooks (i.e., not merely geography) continuously reproduced from 1850 to 1950 the idea that Sweden was the most "ancient" nation, that it had the most "glorious history" and the most "pure-bred population". Myths told the story of a homogenous population that had "exceptional characteristics regarding both appearance and temperament" (Ripenberg, 2019: 40). Typical Swedish characteristics included a "feeling of freedom", "a sense for justice", "courage" and "general decency" (2019: 45).

As we have seen, the idea of 'race' was firmly expressed within the racist ideology of environmental determinism. While environmental determinism sought to explain European cultural superiority by invoking an external nature (climate, landscape) and 'race', the aim of this chapter is to examine the historical development of the idea of 'race' itself as it appeared in Swedish geography textbooks, and how ideologies of nature were implicated and articulated. This includes not only a discussion of the emergence of scientific racism and/or racial biology as it constitutes one historical form the idea of 'race' took, but the quite broad question of 'human nature'.[69] Thus, it is worthwhile to emphasize already at the outset that the universal conception (and the external too because the universal cannot exist without the external) plays a crucial role throughout the chapter since the question of 'race' and human nature is deeply ingrained and enmeshed with it. What is at stake here, then, is the critical investigation of something which appears to be fully 'natural'. As Mitchell (2000: 233-234) writes, "'Race' seems so obvious", and continues, "What could be more straightforward than the color of people's skin, the shape of their face, the texture of their hair…Racial difference is undeniable". However, as he also importantly notes, differences "are also *deceptive*" (Mitchell, 2000: 234; emphasis added). In other words, the way in which the idea of 'race' is deceitful and functions as a distortion constitutes one crucial element of the analysis here.

The structure of the chapter is straightforward. First, by closely following how geography textbooks understood 'race', it details the development and the articulation of the idea of 'race' and the way in which scientific racism/racial biology became introduced in the textbooks in the 1930s. Secondly, what I refer to as the "deceitfulness of race" will be discussed. And thirdly, the chapter points to the curriculum reform of 1962 and the changes this entailed.

[69] I remain inspired by Kobayashi's (2004: 241) argument about racialization: "racialization implies that 'races' are constructed through historical processes, that they emerge in specific historical contexts without which they would have no meaning", and in turn that we need to situate the idea and construction of "races" within the context of the Enlightenment period, imperialism, capitalism, and "modern scientific discourse". Furthermore, Ajagán-Lester (2000; see also, Palmberg, 1987) has, in great detail, surveyed representations of "Africans" between 1768-1965 in school textbooks (geography included). Clearly, while his focus is different from my focus, there are similarities since we both focus on shifting ideas of 'race'.

A natural division of humans

Palmblad (1866) wrote about the "Basics of People's Geography", by which environmental determinism was established as a basis for the different races inhabiting the world, for instance by suggesting – as we saw in the previous chapter – that the "soul and body develops in the most advantageous way in a temperate climate". Following this, Palmblad (1866: 41) wrote "Considering this large natural difference, humanity can be divided into 6 main tribes [hufvudstammar] or so-called Races", by which a quite detailed division of races (the Caucasian, Mongolian, and the Negro 'race') on the basis of physical characteristics followed. Concerning the Negro 'race' it was maintained that "The skull form is not unsimilar to the monkey, in that the sides of the skull are pushed together". These three races were, according to Palmblad, the "**most numerous** [talrikaste]**, those known from the prehistoric age**". There were, however, three other races which were considered not as specific races but "**deviations** [avarter]" (Palmblad, 1866: 42; bold in original). From here, Palmblad went on to distinguish between what was referred to as "The Indian Race", "The Jewish Race" and "The Malay Race", by again pointing to different physical attributes. However, separating and distinguishing between races on the basis of *physical* attributes was not enough given that Palmblad also wrote:

> These cited differences between races concern only the shape of the body [kroppens daning]: *but regarding mental disposition they are also different from each other*. Even here, the Caucasian [överträffar] race is superior to the others: the Mongolian people are sluggish [tröga] and listless [liknöjda] with almost everything; the Negroes are weak [vekliga] and sensual [sinnliga]; the Indians, childish and unsteady: the Malays, wild and irrepressible [obändiga]: but of all, the [Tsjudiska] people…appear to be the emotionally and intellectually poorest [de känslo och förstånds-fattigaste] (Palmblad, 1866: 43; emphasis added).

In other words, Palmblad maintained a belief of a human nature that could be classified hierarchically on the basis of physical and mental attributes. That is to say, it is in 'their nature' – nature as essence – to have certain physical attributes and part of their "mental disposition" to be sluggish, listless, sensual, childish and so forth. Palmblad even made a reference to a monkey to make distinctions between and to classify different 'races' (cf. Anderson, 2001). The Caucasian race, of course, was understood as not only physically but mentally superior. Such hierarchical divisions of humanity were common in the textbooks over the years. However, maintaining that there were mental differences between various races were not as common as a division based on physical differences.

Based on physical characteristics, Dahm (1877: 17-18) distinguished between a Caucasian, Mongoloid, Malay, Ethiopian and American Race, while

later, he (1901: 2) – emphasizing that the skin-colour of humans are "very different" – separated between three main races in the following order: the Mediterranean (mostly white), Mongoloid (white-yellow) and Negro (black), and in turn, various intermediate races [mellanraser] such as the Malay (brown), American (brown-red), South-African race (dirty yellow) and lastly what was referred to as "Australian Negroes" (soot brown) (following this, Dahm [1901: 36-40] also provided a more detailed description considering the three main races and their various physical attributes). The "Australian Negroes" and "Hottentots", however, were "Related to the *Negro* Race" but understood as "insignificant peoples" (1901: 40; original emphasis).[70] In a similar fashion, Erslev (1879: 519-522; 1881b: 363), distinguished on the basis of physical characteristics between a Caucasian, Negro, Mongoloid and a Malay race, and in turn, American people.[71]

Roth (1881: 13) followed, but also had a slightly different understanding: "Although they [peoples] originate from one and the same primordial couple [ur-par[72]], under the prolonged influence of different climates and ways of life they have become very different between themselves regarding figure [skapnad], language and level of culture" [bildningsgrad]. In such a way and similar to environmental determinism, Roth emphasized that under the influence of climate and ways of life, people had developed differently in terms of culture. From this, a division of races is established. First, the "Ethiopian" or "Negro race": "People of this race seem to be the ugliest and undoubtedly in other respects also the lowest standing of all humans", secondly the "Mongolian race", and thirdly the "[Eraniska] race": "People of this race…are the most beautiful and cultural [bildade] on earth…" (Roth, 1881: 16)[73]. Roth, then, explicitly connected 'race' to a certain level of culture. Concerning the level of culture [bildningsgraden], Roth (1881) contended – by echoing traces of environmental determinism – that:

> Some human tribes still live as the wild animals, searching for their food on a daily basis wherever they can find some…Finally, some people engage with *agriculture*...It is only among them that a higher level of culture [högre bildning] can be achieved, and especially among those that inhabit moderately warm and moderately fertile [fruktbara] zones, where the human is forced to work for its subsistence with its body, but not exclusively so that she does not

[70] Dahm (1877: 147) wrote that the "Australian Negroes" were on "the lowest step of human development".
[71] In Erslev (1879: 519), it was also mentioned that a division of five races is not satisfactory because of difficulties with establishing "any systematic division of the human race". Neither were seven races "satisfying". Furthermore, Erslev (1881b) referred to the "American Race" instead of "American people".
[72] This is a reference to Adam and Eve.
[73] Roth (1881: 16) put an emphasis on physical attributes, for example, based on skin-colour races are divided into the "black, "yellow" and "white" race. Yet, "races" were also separated concerning the shape of the brainpan. We will return to this in a moment.

> have the time[74] to cultivate her soul and become *civilized* (Roth, 1881: 16-17; original emphasis).[75]

Thus, ideas of environmental determinism become articulated with race in the sense that it is within the "moderately warm" and "fertile zones" that a higher level of culture could be developed. Furthermore, it is by producing and transforming nature – engaging with agriculture – rather than merely collecting food on a daily basis, that the 'cultured'/'civilized' and the 'uncultured' were separated. Thus, it was not merely about classifying different 'races' but placing people on a hierarchical scale ranging from 'nature' to 'culture' given that some peoples were equated with 'nature' in the sense that they "live as wild animals" and some had successfully learned to 'master', 'control' or 'manipulate' nature for certain purposes, and in turn, cultivated the mind (soul). Such an articulation – given that culture "can be achieved" – suggests an "idea of improvement" (Anderson, 2001: 78). Hence, as Anderson (2001: 77) argues, within the "assemblage of territories occupied by 'Europe', to be properly 'human' was assessed in the light of the capacity for *cultura*, conceived in terms of cultivating something". In turn, Anderson importantly argues that "the cultivated landscapes…have been read as a marker of human transcendence of nature by many generations of evolutionary thinkers" (Anderson, 2001: 78). That is to say, by actively and consciously 'producing' nature, some peoples were no longer within the constraints of nature.

In the textbook that became dominant for about 50 years, the idea of 'race' was of course not excluded. Carlson (1913) maintained that ever since humans appeared on earth, they have to a great extent developed differently:

> Among larger and smaller groups of people…certain body characteristics, so-called *racial marks*, have under the influence of similar external conditions such as climate and ways of life etc., remained common [förblivit gemensamma]. One calls such groups *races*…One usually separates between *three main races*: 1) *the Negro race* among negro-like [negroid] people; 2) *the Mongoloid race* along with Malays and Indians; 3) *the Caucasian race*, also called the [Mediterreanian race] (Carlson, 1913: 54; original emphasis).[76]

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[74] Men inte så uteslutande att hon icke äfven hinner odla sin själ

[75] See Dahm (1877: 17-18) and Dahm (1901: 40) for similar passages. In turn, similar understandings appeared much later. Carlson addressed what was referred to as "Culture stages", suggesting that "With respect to different levels of culture [odling] the peoples have achieved, one usually speaks about *nature peoples* and *culture peoples*" (original emphasis; see Carlson, 1913: 57; 1924: 62; 1941: 81). That is, it was possible to transcend the domain of nature and become 'cultured', or perhaps cultivated and civilized.

[76] The same passage is found in Carlsson (1924: 59-60). In 1941 (p. 76), most of this is reproduced but slightly rewritten. For example, before the description of the three main 'races', "Important racial marks" (physical attributes) were presented and "Although the difference in skin colour appears to be far from the biologically most important difference between different human races", "this racial mark" is nonetheless commonly used "as a principle of division" [indelningsgrund] to "distinguish three main racial groups" (1941: 79).

Similar to Roth, climate and culture were important for shaping common "racial marks", but Carlson – maintaining that different races have different physical characteristics – also evaluated each 'race' culturally. For example, regarding the 'Negro race', they "have not developed any higher culture [odling]…They have never showed tendency [benägenhet] to colonize foreign continents as conquerors; against their will they have been forced to leave home in great numbers [and] as slaves be transferred to other countries, especially America" (Carlson, 1913: 54-55).[77] Among the 'Caucasian or Mediterranean race', we find the

> …premier [förnämsta] culture peoples, among which both the highest forms of business and culture [bildning]…have developed. They speak languages which, in varying forms, are appropriate for expressing the most divergent thoughts. In many cases they have created lasting empires [bestående välden] beyond the boundaries from which originally were their home (Carlson, 1913: 56-57).[78]

In this sense, not only was 'race' implicated in the colonial/imperial drama but specifically tied to the level of culture of a specific 'race'.

What these textbooks articulate is a belief that human nature can be classified, divided and categorized hierarchically on the basis of physical (and mental) attributes; that is, that there are natural differences. While this appears to be "a natural division of humankind" (Jackson, 1987: 6), this is so because the "human-nature argument" constitutes "the jewel in the crown of universal nature" (Smith, 1990: 16). Thus, the idea of an external and universal conception of nature performs a powerful work (the latter draws its substance from the former), by which humans are fully 'natural'. Although humans are perceived to be fully natural, the textbooks also to a certain degree articulated that 'races' (racial marks) and (their level of) culture have developed under the influence of climatic conditions, something which implies an idea that external nature determines humans. While the universal conception of nature will continue to be of importance, such an understanding will, as we will see, evolve.

[77] The same passage is found in Carlson (1924: 60) and Carlson (1941: 77). Yet, the latter passage was slightly rewritten since it was emphasized that the "black races" "stand on a low level of culture" and that they "appear to barely be able to develop [any] higher culture".

[78] The same passage is found in Carlson (1924: 62). In Carlson (1941: 80), we find a similar passage, but it was emphasized that the 'white race' belong to "the premier culture peoples" and that the 'white race' through emigration (colonialization) has "populated such areas in foreign continents, which with regard to the climate are most similar to the homeland [som i klimatiskt avseende mest likna hemlandet]"

Shifting ideas of 'race'

In the 1930s, about a decade after the birth of the Institute, it becomes possible to discern a shift concerning the classification of 'races'. While Olsson (1931: 62) mentioned that there are three 'races' – the 'white', 'yellow' and 'black' (a division that remained common in other textbooks too), Olsson (1930) had more to say about the 'races' of Europe. Apparently, "higher developed races" emerged towards the end of the last Ice Age, and their physique was not totally different compared to contemporary Europeans. Although miscegenation has occurred, the population of Europe is "uniform" considering that 95 %

> …belong to the *white race*…One can distinguish between six main races in Europe. Areas north of a line drawn from the south of England, through the middle of Germany to the upper Weichsel and the inner part of the Gulf of Riga, constitutes the main area of *the Nordic race*. People living here usually have a considerable [ansenlig] body length, a long skull, light skin and blue or light-grey eyes (Olsson, 1930: 6-7; original emphasis).

The other 'races' of Europe included the Mediterranean, the Alpine, the Dinaric and the Eastern Baltic 'race' (see Swedberg, 1930: 41-45; Carlson, 1941: 79-80; Nelson & Stolpe, 1945: 60-61; Moberg & Näsmark, 1947: 109-110; Näsmark et al., 1956: 8-11; Nelson et al., 1955: 54-55). Carlson (1941: 79) proposed the same division and wrote that: "Sweden's people, which appears to be the most racially pure, is estimated to consist of 90 % of [the Nordic race]", while Moberg & Näsmark (1947: 109) suggested that there were areas in Sweden where the "Nordic race" was most "Purely educated".[79] Furthermore, although recognizing that Europe's population was a mix of different "people elements" [folkelement], Olsson (1937) suggested that the population had maintained a "uniform character" [enhetlig prägel] within certain areas, by which it is possible to determine or establish a number of 'races' – which, according to Olsson, constitute "the basic structure [grundstomme] of the European peoples". Olsson thereby wrote:

> By *race* we refer to a group of people which possess [äger] similar hereditary characteristics [ärftliga egenskaper] through which it differs from any other group of people. These characteristics indicate a common origin. Among these, one can notice body length, skin, hair, and eye colour, the shape of the face and skull etc. (Olsson, 1937: 41).

While Olsson provided a division of 'races' (The Nordic, Mediterranean race etc.) in a hierarchical order and their different physical characteristics, he also put an emphasis on and articulated that characteristics are 'inherited' – it is in our genes – rather than determined by 'climate'; a notion that suggests that racial characteristics are to a greater extent biologically (internally) rooted. In

[79] On the same page, Moberg & Näsmark presented two pictures from the Institute's archive.

a similar fashion, Näsmark et al. (1956: 8)[80] wrote that: "One has wanted to define the term [begreppet] *race* in the following way: A race is a group of people, which through a combination of hereditary [ärftliga] physical and mental characteristics [egenskaper], differ from any other group of humans".[81] Thus, not only was physical characteristics inherited, but mental characteristics too (cf. Ajagán-Lester, 2000: 143).

The emphasis on inheritance can be viewed in relation to the development of science (and the development of eugenics, something which we will return to). As noted earlier, Lundborg claimed that "inheritance is everything". Science was dominated by a "biological determinism", and as such, social questions were often "reduced to questions of inheritance". In turn, given that humans were viewed as fully determined by biology, the only way to change humans and society was with "biological means" (Ajagán-Lester, 2000: 139). In the early 1900s, Bengt Lidforss (a botanist) believed – as many others did – that "moral and intellectual aptitude is hereditary [medfödd]", and therefore, the "*Volksgeist*" could not merely be changed through reforms (Lindquist, 1997: 48; original emphasis). The "step from plant and animal breeding to human improvement [was] not far" (ibid: 47-48).

Besides perhaps putting a greater emphasis on inheritance, it is in the textbooks by Swedberg (1930) Carlson (1941), Moberg & Näsmark (1947), Nelson & Stolpe (1945), Näsmark et al. (1956) and Nelson et al. (1955) that certain ideas linked to scientific racism can be found: the importance of measuring the "brainpan" or the "skull". The measuring of skulls had been conducted around 1900 (based on 45000 people), the Institute, however, measured, classified and ranked about 100 000 people in the years following its establishment (Lindquist, 1997: 60). Regarding textbooks, while the form of skull had been emphasized prior to the 1930s and 1940s, the shift here entails the "first systematic [and mathematical] division of peoples based on the measuring of skulls" (Ajagán-Lester, 2000: 143[82]); that is, it was granted greater importance.

Carlson (1941) contended that the shape or form of the "brainpan" [hjärnskålen] – the so-called "long-headed" and "short-headed" skulls – was

[80] Regarding heredity, Nelson & Stolpe (1945: 130; original emphasis) similarly argued that: "*Race* is a biological concept [term] and refers to a group of humans which possesses [äger] certain hereditary physical [kroppsliga] and mental [andliga] characteristics, which separates it from another group".

[81] Moberg & Näsmark (1947: 105), for example, emphasized physical and mental characteristics as well, but not explicitly that they are inherited. Yet, it was also suggested that it is impossible to speak of "pure" races because the peoples of Europe have been mixed (a view common in other textbooks too) and that "In each case, it is wrong to represent any race as intellectually superior" (Näsmark et al., 1956: 8). While thus downplaying the intellectual superiority, a hierarchical division of races is provided: first the Nordic race, followed by the Mediterranean, Dinaric, Alpine and Eastern Baltic race.

[82] Ajagán-Lester (2000: 143) dates both the more systematic measuring of skulls and the emphasis on inheritance to the 1920s, and especially a textbook written by Swedberg & Teiling (1926).

one important "racial mark" or (physical) attribute among others (such as hair, the proportions of the face and the various parts of the face, and the colour of the skin, hair and eyes). In footnotes, Carlsson explained this: first, "dolichocephaly", by which "the measure of the width of the skull is less than 77 % of its length", and secondly, "brachycephaly", by which "the measure of the width of the skull constitutes at least 86 % of its length" (Carlson, 1941: 76). Similarly, Moberg & Näsmark (1947: 106) proposed that "The form of the brainpan can be determined mathematically by measuring its largest width, multiplying this value by 100 and dividing the number with the value of the [brainpan's] largest length (the ratio is called skull index)".[83] This obviously constituted a 'new' mathematical way of categorizing human nature and thus to distinguish between 'races'.

In Swedberg (1930) we find a section discussing the "Human races of Europe". Swedberg suggested that:

> "A race is a human group [människogrupp], which through the same compound composition of bodily characteristics and mental characteristics are different from every other human group and which still generates [alstrar] individuals of its own kind"…By methods to a large extent developed by the Swede Anders Retzius, one can *examine the measurable details* [particularities] *of the human body*, for example, body length and the shape of the head, determine skin-colour, hair-colour, eye-colour etc and thus establish the bodily characteristics that characterizes a race. It is far more difficult to find the mental characteristics which characterize a race and to separate them from others. **Head type and facial form constitute bodily characteristics, which are of great importance in the indication of racial properties.** One distinguishes from two fundamental head types: *long-headed* and *short-headed*. The length of the long-headed – viewed from above – shall significantly exceed the width, while the width of the short-headed more closely approaches the length. The relationship between length and width is expressed in percent.[84] The obtained percentage is called *cephalic index* [skull index] (Swedberg, 1930: 39; bold, emphasis and quotation marks in original).[85]

For Swedberg, head type and facial form was not merely one important "racial mark" among others, but "of great importance" concerning "the indication of racial properties", and as I recently noted, it is the practice of mathematically measuring 'human nature' that becomes emphasized here; that is, finding a

[83] This was followed by a formula and – as with Carlson – it was maintained that long-headed skulls have an index under 77, intermediate skulls an index between 77 and 86, and short-headed skulls an index above 86 (p. 106).

[84] Tvärmåttets förhållande till längdmåttet uttryckes i procent.

[85] This was also followed by a formula. Anders Retzius was discussed by Nelson & Stolpe (1945: 130; emphasis in original) as well: "One of the founders of modern racial biology [rasläran] (anthropology) is the Swede *Anders Retzius*. He based his division on the form of the skull [huvudskålen]. It is after him that one distinguishes between *long-*, *intermediate-* and *short-headed races*". Other characteristics were mentioned too, and that one had not yet reached a final classification.

valid, objective and scientific way to classify 'races'. Five European races were outlined in a hierarchical order: the Nordic race, the 'Western' (Mediterranian race), the Eastern (Alpine race), the Dinaric race, and the East Baltic race.[86]

Broadly speaking, the races had different physical characteristics, such as long-headed, short-headed, eye-colour, hair-colour, shape of the nose, body-type. These 'natural' characteristics were also accompanied with pictures illustrating the different races. However, despite emphasizing that it is difficult to determine the mental characteristics of a race, and in contrast to other textbooks which merely asserted that mental characteristics among different 'races' existed, this was in fact done in detail when the five European races were outlined.

Regarding the Nordic race, Swedberg (1930: 42) maintained that: "Among the mental characteristics that distinguishes the Nordic race, judgement [omdömesförmåga], love of truth [sanningskärlek], a distinct sense of duty [utpräglat pliktbegrepp] and the ability to take action [handlingskraft] are emphasized". This race was also "distinguished by a certain lack of knowledge of people [människokännedom], displaying a withdrawnness in company with others and does not spontaneously express feelings in words and gestures". Yet importantly, it has "*leadership qualities*", something which was demonstrated in military service, the state [statslivets område] and industry. These characteristics meant that this race also had "a distinct mind for nature, which has benefitted scientific research, by which this race has most strongly contributed to the area of natural science (Swedberg, 1930: 42; original emphasis).[87]

Among the Mediterreanian race, however, distinguishing mental dispositions [lynnesdrag] were mobility and passion. They had shown "little sense for law and order" and the "desire to enjoy life" was greater than diligence (p. 42-43). The Dinaric race was "known for" their rugged force [grovhuggen kraft], their directness [rättframhet], bravery and self-consciousness [självmedvetande]. Furthermore, 'they' are "good-natured" [godmodiga] and "companionable" [sällskapliga] but also known for "suddenly erupting with anger and a desire to fight". As with the Nordic race, the Dinaric race also had a "warm sense of nature" but was lacking in leadership qualities. (Swedberg, 1930: 43). Considering the 'Eastern' (Alpine race), it was suggested that 'they' were characterized by a "sense for acquisition" [förvärvssinne], frugality, patience, perseverance, and caution, through which "The saved money after a diligent life [strävsamt] is a true ideal of happiness [lyckoideal] within

[86] A "Racial map of Europe" also demonstrated the distribution of these 'races' (p. 41).

[87] It was also maintained that, over time, the different 'races' have been mixed (miscegenation). This especially applied to the 'Nordic race' "whose warlike disposition, desire for adventure and leadership qualities have enticed it to vast rambles. It has been a distinct *master race* [härskarras], which has subjugated other races and established realms far from its main distribution area" (Swedberg, 1930: 45-46; original emphasis).

this race". Furthermore, while 'they' lack significant leadership qualities and warlike inclinations [krigiska böjelser], 'they' are close to their family and "generally quiet servants" [i regel stillsamma] (Swedberg, 1930: 44).

Lastly, regarding the East Baltic race, 'they' "seem closed [slutna], ruminating, distrustful [misstrogna] and reticent, satisfied with the little and persist in a close-bitten diligence [framhärda i en sammanbiten arbetssamhet]". In turn, 'they' lacked

> greater success in work because of the inability to make decisions and lack of sense of reality [verklighetssinne]. He easily becomes a confused dreamer. The creative power [skaparkraft] of the Nordic race is missing. Reversal in the frame of mind [omkastning i sinnesstämning] is a distinguishing feature, the moment after unrestrained anger [the Eastern Baltic race] can show great eagerness for reconciliation and to revel in noble feelings [frossa i ädla känslor]. He is in need of leadership and can as a servant show the most complete subordination [fullständigaste underkastelse] (Swedberg, 1930: 45).

Accordingly, each race had various mental characteristics. These characteristics were internal characteristics (biologically determined); which is to say that it was 'in their nature' to be ruminating, reticent, have a distinct mind for nature or suddenly erupting with anger. The characteristics of each race were connected to, for example, either a civilized or uncivilized behaviour or understood in positive or negative terms, and the hierarchy of the 'races' made this even clearer. The mental characteristics of the Nordic race were, of course, civilized and positive, such as judgement [omdömesförmåga], love of truth [sanningskärlek], a distinct sense of duty [utpräglat pliktbegrepp], the ability to take action [handlingskraft], non-emotional, and possessed leadership qualities, as well as a sense of nature. These characteristics had been essential for military services, state affairs, business and natural science, and as such, this 'race' was scientifically, culturally and economically successful and developed. Other 'races', however, were emotional (erupting with anger, reversals in frame of mind), uncivilized (no sense for law and order), irrational (incapable of making decisions, confused dreamers), and in addition, when compared with the 'Nordic race', either lacking leadership qualities or were in need of leadership. Therefore, both the Eastern (Alpine) race and the Eastern Baltic race was understood as (subordinated) 'passive servants'. That is to say, within the hierarchical (natural) division of 'races', some were deemed fit to lead (superior) while other were led (inferior). What comes to mind is G. Retzius's notion of the "Nordic race" as a "natural aristocracy", while other European 'races' were "more suitable for repetitive industrial work" (Ripenberg, 2019: 41).

While it is sometimes argued that "The ability to label some social practice or behavior as natural – and just as important, the correlated ability to label other practices and behaviors unnatural – is a powerful centrepiece of contemporary social ideologies concerning class and gender, race and sexuality"

(Smith, 1998: 279), geography textbooks (and perhaps Swedberg in particular) operated according to a somewhat different logic; that is, textbook authors did not engage in the practice of labelling some behaviours as unnatural. Rather, by starting from an essentialist understanding and an apparent unalterable and fixed human nature, racial characteristics were separated on the basis of apparent differences in human nature. Hence, concerning the textbooks, what is considered 'natural' or 'unnatural' is not the critical concern. On the contrary, there are 'natural' differences. With the external and universal conception of nature at work – by which humans are fully 'part of nature' and reduced to biology (characteristics are inherent to or 'in our nature') – the textbooks attempt to articulate a "natural division" of humans.

In sum, there have been different articulations concerning the idea of 'race'. In some cases, 'race' is a product of the climate, in other cases is heredity emphasized. There are in turn differences whether the textbooks focused on 'describing' characteristics or 'measuring' characteristics (as well as what constituted important 'racial marks'). But, there is also the question of how many races there are given that they range from three to six, and within the context of scientific racism, the division is different. Although 'race' present itself as a given fact of nature and as a product of nature (biology), there is in fact no natural (or coherent) way to categorize human nature.

The deceitfulness of race

The existence of 'race', and that it was an indisputable fact of (human) nature, constituted a form of common sense. However, it was a distorted form of common sense precisely because of the workings of the ideology of nature, which in turn, make 'race' into something ahistorical. For Mitchell (2000: 235) – arguing that "there is no such biological thing as 'race'" – claims about 'race' and its biological roots "fail in two places"; first concerning phenotype, and secondly, concerning genotype. Although classifying 'races' on the basis of phenotype (physical attributes) is the most common way, the difficulty is "that phenotypic traits do not vary consistently together". On the one hand, concerning physical attributes, one cannot in a consistent manner "associate changes in one trait with changes in another", and on the other hand, this entails a "further divi[sion] [of] the human pie into smaller and smaller pieces, hoping thereby to create coherent and cohesive racial populations". The problem, of course, is that this is a cul de sac. "Phenotypic chaos is the rule since *each* phenotypic variation exists along continuum, and thus the classification of individuals into groups must find a way to slice coherently through variation in nearly infinite dimensions", and therefore, "the sheer abundance of difference cannot be classified into distinct groups at the level of phenotype" (Mitchell, 2000: 240; original emphasis).

By turning to genotype (heredity), it is similarly not possible to coherently establish a definite classification of different 'races'. For example, what gene or set of genes (or should we use blood types?) should one choose? The important point here is that by selecting a different gene or genetic code, "we end up with a completely different classification. The problem is exactly the same as with phenotype" (Mitchell, 2000: 240). Crucially, Mitchell stresses the arbitrariness of racial divisions; that is to say, dividing "one race from another at point *x* rather than at point *y*, *z*, or any other point in the total genetic endowment – or whether one divides races at all – is completely arbitrary".

Furthermore, Jackson (1987: 6; emphasis added) importantly argues that "the urge to classify people into a finite number of 'races' has been widespread", however, "*it should not be understood as having its roots in an unalterable 'human nature'*". Categorizing humans into different 'races' on the basis of physical (and mental) attributes, Jackson continues, "is even less 'natural', arising not from some innate human instinct but from specific historical circumstances". For example, the number of' 'races', whether the 'climate' or 'heredity' (genes) is the determining factor, and what attributes constitute the most important ones varies historically. By drawing on the work of Hall (1981b), Jackson contends that the 'naturalization' of racial difference is "one of the similarities between racism and sexism". In this sense, following Hall, "both ideologies attempt to ground themselves in *the evidence of nature*" (Jackson, 1987: 6; emphasis added), and therefore "It is this transposition from historically and culturally created differences to fixed natural or biological or genetic differences which gives those two ideologies their deep-seated structure" (Hall, 1981b: 64; cited in Jackson, 1987: 6). In other words, 'race' (racism) becomes naturalized because of the workings of the ideology of nature. Since there is no "universal 'human nature'" (Jackson, 1987: 6), race (and racism) cannot be understood as

> …a permanent human or social deposit which is simply waiting there to be triggered off when the circumstances are right. It has no natural and universal law of development. It does not always assume the same shape. There have been many significantly different *racisms*—each historically specific and articulated in a different way with the societies in which they appear. Racism is always historically specific in this way, whatever common features it may appear to share with similar social phenomena. (Hall 1978: 26; cited in Jackson, 1987: 6).[88]

[88] Anderson (2001: 72) has in a similar fashion argued: "Markers of difference, notably skin color, take their meaning not from anything natural or innately relevant – but from belief systems that are best understood as 'cultural'. In that sense…race is said to be an idea. It is a concept in which people invest in order to draw boundaries between themselves and 'others', between ingroups and outgroups. This practice has occurred at least since the fifteenth century in Western cultures when European empires began to extend their reach into the 'New World', encountering unfamiliar people and livelihoods. It follows that race

Accordingly, 'race' has little to do with nature, but must be understood as a product of society and historically changing. For example, European expansion depended on slavery, and slavery "solved a particular material problem – one of labor shortages". This, Mitchell (2000: 235; original emphasis) goes on, is not to suggest "that all manifestations of racism can be directly mapped onto economic necessity. It is to say, however, that a look at the material conditions of society goes a long way in *explaining* the need for racial distinction". While this is certainly not always made explicit, in one textbook we find: "For the earth's hot areas, the negroes have great significance as labour force, although their *independent* effort [insats] is not so great for the world's production, but their labour [has] mostly occurred under white leadership" (Nelson & Stolpe, 1945: 134-135; original emphasis).

Yet, much of what has been examined and discussed here – such as the emphasis on heredity/inheritance, the superiority of the Nordic race, or that the Swedish people appeared to be the most "racially pure" – needs to be viewed within the context of, and therefore articulated with, the developments in Sweden.

Eugenics, i.e., how to improve humans biologically – and thus a certain form of the production of nature – was presented as a solution to several social problems such as degeneration, uneven nativity, harmful environmental impacts due to industrialization and urbanization, and "a generally impoverished morality". Degeneration was understood as "biological degradation", something which might result in a "reduced resilience" against a range of diseases, and it could arise either because of miscegenation (immigration) or "inappropriate marriages" (Björkman, 2012: 37). In a similar fashion, Tydén (2002: 23) suggests that "eugenics was a way to interpret industrial society's rapid changes in biological terms". Proletarianization and degeneration were perceived as dangers of modern society, and "insanity", "mental deficiency" and the "inferior" (undermåliga) were perceived as becoming more common. Eugenics, then, was a way to solve these problems. Regarding degeneration, following Björkman (2012: 38), it was a way to "explain how more and more defects were inherited", and research about heredity was supposed to be used "preventively". Practical measures included both "negative" and "positive" eugenics. The former was about detention and sterilization, and the latter about taxation policies to encourage more children from those that were considered "biologically superior". Tydén (2002: 25) also discusses "negative eugenics" and "positive eugenics", by which the former entailed immigration restrictions and prohibition of marriage, while the latter entailed maternity care, health and school meals. Since the publication of his dissertation in 1911, Lundborg had warned about degeneration; that is, it was "intended to

is not just any social construction or a set of beliefs, but one that is intimately linked to the exercise of power".

enlighten the nation about the threats against its biological core, about ongoing degeneration, and eugenics as evangel", in other words, eugenics as salvation (Broberg, 1995: 9).

Prior to the establishment of the Institute, a network of scientists promoted its establishment. The Institute, they argued, was needed if the "insidious war…against a threatening inner enemy, [i.e.,] degeneration" was to be won. Doctors with knowledge in genetics (heredity) and racial biology should have greater influence over politics and they should use "the tools they have to protect society" from diseases. As these tools were used regarding plant breeding, they could also be used to "improve the Swedish people". The birth rate could be increased among some, and sterilization could be used to prevent reproduction among others (Hagerman, 2015: 174).

As Lindquist (1997: 52) notes, as the standards of living improved, Lundborg was worried about the increasing share of weak and sick people in the population; that is, people that formerly would have passed away would now survive. The message put forward by racial biology was that too many children were born to, for example, industrial workers, the "insane", "mentally deficient", and "criminals". Therefore, their reproductive capacity had to be limited (for Lundborg, the middle class was the "bearer of the best genes" [Lindquist, 1997: 50]). If nothing was done, as Lundborg saw it, "the nation is dissolved into general chaos which makes Sweden so weakened that it easily can be invaded". Through education about heredity and positive and negative eugenics, Björkman (2012: 38) argues, one thought that it was possible "to avert the threat of doom for both Sweden and other culture nations". The results of heredity research and racial biology were to provide knowledge to social engineers, and "the methods of eugenics" were a way to "improve the quality of the people" (Lindquist, 1997: 60).

A sterilization law was passed in 1934. The Institute, however, was not an explicit driving force behind sterilization. Rather, racial biology and eugenics played a great, although more implicit, role "by legitimating it for the wider public and [by] planting it in debates and politics. Since the turn of the century, racial biology had formulated the problem the sterilization question revolved around: the threat of a growing group of mentally deficient and otherwise 'inferior'" [undermåliga] (Tydén, 2002: 33).

The historical development of the idea of 'race' is indeed long, but it took a different turn after the curriculum reform of 1962. Therefore, before turning to conclusions, we will briefly examine the changes that occurred.

The continuity of race

In the post-war era, there was a shift from eugenics to medical genetics (in 1958, the Institute was disbanded, and research was moved to the Department of Medical Genetics) (Broberg & Tydén, 2005: 165). Similarly, the Statement

on Race by UNESCO in 1950 marked a shift away from the (biological) idea of 'race' as it was considered both "compromised" and "unscientific". Instead, there was an attempt to introduce the concept of "ethnic group" (ibid: 170; Ajagán-Lester, 2000: 187). Furthermore, Ajagán-Lester (2000: 217) argues that in the 1960s and 1970s, new "solidaristic voices" with the so-called "Third World" emerged, voices which were "anti-imperialistic" and anti-racist. The curriculum reform of 1962 (Lgr 62) entailed several changes. As Molin (2006: 193; see also, Ripenberg, 2019: 47-48; Ajagán-Lester, 2000: 203) writes, "European imperialism was over, the colonies became independent states and the experiences of fascism and nazism were some of the reasons racism was toned down from the 1960s and onwards". While the syllabuses of the 1950s emphasized that the question of 'race' should be part of geography education (Olsson, 1986: 119), articulations of the idea of 'race' were changing in the 1960s. The geography syllabus of 1962 underlined that:

> The depiction [of content] must…be objective and nuanced in order to effectively contribute to an increased understanding of other peoples, their problem and living conditions as well as clarify the importance of peace and international cooperation. *Thus when dealing with foreign countries and areas one should stress all peoples' equality regardless of race, language and religion and avoid unilaterally generalizing judgements* (Lgr 62: 265; emphasis added).

However, the syllabus also emphasized "Current racial political problems". In one of the first textbooks after the introduction of the compulsory school in 1962, we can read:

> One can track common physical similarities among large parts of the earth's population. Skin-colour, shape of skull, shape of face, physique and the like may correspond and according to these physical similarities, humans have been separated into races. The earth's three main races are the white (europida) race, the yellow (mongoloida) race and the black (negroida) race (Sellergren, 1963: 166).

This way of thinking about and separating humans into three main races on the basis of various physical characteristics follows a similar historical trajectory as before. In relation to this, Sellergren (1963) also discussed the territorialisation of races and their distribution on the earth's surface. The author explains how races have historically been separated into neat regions, but that now, races have spread across the world with a 'black population' in America and a 'yellow' population in Africa. But when racial characteristics are discussed, it is possible to discern that the curriculum reform of 1962 had an impact. Even though 'racial characteristics' were discussed, they were problematized:

> There are often deeply rooted opinions regarding characteristics among other people and races. These conceptions are usually less positive. It may involve

> characteristics such as low intelligence, unreliability, uncleanliness, greed, stinginess etc. Such generalizations are usually wrong and based on ignorance. It has often been emphasized for instance, that the black race on average would have lower intelligence than the white. There is no proof of that what so ever. One has instead found that variations within a race are much larger than differences between races (Sellergren, 1963: 166).

One change to notice here, of course, is an effort to be more 'nuanced' and an effort to avoid making generalizing statements when describing racial differences of the world. The strategy deployed here, therefore, is to move away from collective and homogenizing statements (differences *between* races) to instead propose that there are differences *within* races. However, although this passage attempts to 'correct' misconceived perceptions, it was still maintained that different races exist.

The textbook by Nordström (et al., 1966) followed a similar pattern and separated humanity into three main races (the 'white', 'yellow' and 'black') based on skin-colour, while also mentioning other racial characteristics (shape of skull and face, hair colour and body length). Yet, they added the following:

> But one has now discovered that these characteristics to a certain degree are affected by climate and access to nutrition. The modern division of races is therefore mainly based on blood types that are inherited according to determined laws and that are not affected by changes in climate, food or of sickness (Nordström et al., 1966: 158).

The authors, accordingly, move away from the climate by turning to 'blood types'.[89] Accordingly, blood types make it possible to disregard the factors of climate, food and sickness and thus reach a purer and perhaps more scientific categorization given that blood types are "inherited according to determined laws". Here, then, blood types and heredity were brought together and race therefore is not determined by external nature, such as climatic conditions, but by our (internal) biological nature. Racial constitution, then, is in this sense carried in the blood (following this, however, the textbook also underline that it is impossible to speak of "pure races" because of miscegenation [p. 158] and that "All races have the same human value" and that "racial antagonism should be counteracted" [p. 160]). Yet, Nordström et al. (1966) also attempted to explain spatial expansion:

> The white race is not only found in Europe but also in Northern Africa, the Orient and India. It has more recently spread to America and Australia and displaced the races previously living there. This does not mean that the white race is superior. The relocations [Förskjutningarna] depend on the technical

[89] "Blood group" and "blood type" had been mentioned as one racial characteristic Näsmark et.al (1956: 8).

> and cultural development among the different races (Nordström et al., 1966: 158).[90]

The spatial expansion of the white race – thereby displacing "races previously living there" – was not the result of white racial superiority; or more precisely, it does not entail that the white race is superior. That is to say, although different 'races' exist, the internal characteristics of the 'white race' was not a sufficient explanation. Rather, in contrast to other races, the white race was culturally and technologically more developed. Yet, by connecting 'race', 'technology' and 'culture' in such a way, the authors end up by reproducing and reinforcing 'superiority' from the standpoint of culture and technology by which 'race' serves as the natural basis.

In the textbook by Holdar & Rydefält (1970), we find the last passage reinforcing the division between three main races (the 'white', 'black' and 'yellow'). This was illustrated by a map depicting the spatial division of these races, followed by pictures exemplifying the races and their relationship to different 'peoples'. As such, they emphasized that "We are more or less different from each other. Certain groups of people are so different that we speak of different races. Generally one has emphasized physical attributes and thus divided people according to this" (Holdar & Rydefält, 1970: 164).

However, these attributes have changed due to miscegenation, by which physical dissimilarities have been evened out: "Two separate racial groups with different characteristics between themselves [sinsemellan] had become one" (Holdar & Rydefält, 1970: 166). Yet, the question of miscegenation did not merely centre on physical attributes. One important aspect is also the spiritual and/or mental attributes: "The more one learns to know foreign people the easier it is to realize that there are great differences between the physical and spiritual equipment [utrustning] of individuals but not between peoples" (Holdar & Rydefält, 1970: 166).

The syllabus of 1962 certainly had an impact since geography textbooks did not reproduce the same kind of racism they historically had been engaged with. Although 1970 mark the end of this division of 'races', Molin (2006) point out that cultural racism continued to be present in the geography curriculum.

Concluding remarks

As with environmental determinism, the idea of 'race' was in different forms (re)articulated in geography school textbooks for over a century. Important to recognize is not only that 'race' was conceived and presented as common sense, but how common sense was transformed from what we can call

[90] Ajagán-Lester (2000: 209-210) also discussed these passages from Nordström et al.

'external' to 'internal' nature. That is, while there was a continuous attempt to describe or account for 'human nature' – the universal conception of nature was thus continuously at work – there was also a shifting emphasis ranging from climate to heredity and the measuring of skulls, and to blood types that were "inherited according to determined laws". Accordingly, 'race' was differently determined in the sense that there was a shift from 'race' determined by climate to forms of biological determinism. However, no matter what, the external and universal conception of nature remains crucial but in different ways. Regarding the former, climate (external nature) determined 'race', which thus simultaneously make humans part of, and subject to nature (universal). Regarding the latter, the external and universal conception of nature takes a different form given that humans are not merely part of nature; humans *are* nature.

As I have noted previously, in terms of Swedish education, the period from 1946 to 1962 was a particularly transformative period. With the curriculum reform of 1962 and throughout the 1960s, a set of new articulations of ideologies of nature were starting to emerge. It is to those we will turn now.

PART IV

Historical articulations of nature

1962-1994
Chapter 7 – An environmental crisis, (dis)equilibrium and systems ecology – should nature be preserved?
Chapter 8 – The spectre of Malthus

Chapter 7 – An environmental crisis, (dis)equilibrium and systems ecology – should nature be preserved?

> *Environmentalist* and associated words became common from the 1950s to express concern with *conservation* ('preservation') and measures against pollution. **Ecology** and its associated words largely replaced the *environment* grouping from the late 1960s, continuing but also extending these positions. It is from this period that we find *ecocrisis*, *ecocatastrophe*, *ecopolitics* and *ecoactivist*, and the more deliberate formation of **ecology** groups and parties (Williams, 2015: 71; bold and emphasis in original).

> Environmentalism has become one of the most powerful social and political movements of late 20th-century Western world, attesting to a genuine and widespread concern about the increasingly deleterious impacts of humanity upon the natural world (Castree, 1995: 13).

> Nature changed in the 1970s…[C]apitalism [had] operated as if nature were given, a free good or source of wealth, an unlimited bounty awaiting only the 'hand of man' to turn it into a bundle of resources. With decolonialization and the environmental movements of the 1960s and 1970s coupled with the oil shock of 1973, the utilitarian presumptions that undergirded so much of the relationship to nature under capitalism hit their limits. Capitalist actors could no longer be sure that 'natural resources' would be everywhere and eternally available to them. The very grounds of capitalism's global ambition – environmental as much as spatial – had been altered (Katz, 1998: 46).

With those words, Katz initiated her chapter "Whose nature, Whose culture?". While the period of a globally expanding capitalism in absolute space reached its end by the end of the 19th century and instead shifted towards an internal differentiation of space (Smith, 1990, 1994), by the 1970s "Nature [was] no longer an 'open frontier' for capitalism in the sense of an absolute arena of economic expansion" (Katz, 1998: 46). What Katz was pointing to was that the context and conditions within which nature had operated was dramatically changing at the outset of the 1970s, and the social relation with nature under capitalism – as it had been configured for the past 100 years or so – encountered certain limits. That is to say, decolonialization, the environmental movement and the oil shock inflicted certain limits in such a way that the "contours

of nature *produced and conceived* under capitalism were reworked" in a similar way as space was by end of the 19th century (Katz, 1998: 47; emphasis added). Thus, Western capital no longer had absolute control over natural resources in former colonies or access to oil reserves, which made nature more difficult to exploit and, in turn, changed the way nature was produced and conceived. For a thesis focusing on the articulation and transformation of ideologies of nature, these events certainly established a changed context.[91]

In the 1960s, something of an environmental consciousness was growing. For example, various environmental laws were passed (Bolin et al., 1995), environmental movements were emerging, such as the Swedish section of Friends of the Earth and the World Wide Fund for Nature (WWF) – both were founded in 1971 – while Greenpeace Sweden came to light in 1983 (Boström, 2001: 68-73), and in 1972, the parliament decided that national physical planning should be permeated by "an ecological viewpoint" (Sörlin, 1991: 193). In turn, Rachael Carson's (2002 [1962]) *Silent Spring* drew urgent attention to the use of DDT and insecticides/pesticides (Heidenblad, 2021: 18; Worster, 1994: 347; Sörlin, 1991: 257). "The specter haunting scientists like Carson", Worster (1994: 353) writes, "was death – the death of birds, of ecosystems, of nature itself", and therefore also of humans. Regarding the impact of *Silent Spring*, Jamison et al. (1990: 19-20; cited in Thörn & Svenberg, 2017: 194) even claims that the reception of Carson's book was greater in Sweden than in the US.[92] Yet, a rising environmental consciousness was also expressed through battles such as the Elm Conflict/The Battle of the Elms in 1971 (people demonstrated – and were meet by police violence – against the city council's decision to chop down 100-year-old elm trees in Kungsträdgården, a public park at the centre of Stockholm, to construct a new subway station), activism against highway constructions and the opposition against nuclear power (which culminated in a referendum in 1980) (Sörlin, 1991: 232).

While it surely may be an exaggeration to suggest that Sweden took the lead with regard to the environmental crisis, "the breakthrough of environmental issues…occurred strikingly early". In 1967, a group of Swedish researchers "publicly warned of a global environmental crisis" (Heidenblad, 2021: 3), and Sweden early on implemented "the new environmental ethic in legislation and political programmes" (Sörlin, 1991: 192). The acceptance of such "environmental standards", Sörlin (1991: 191) argues, can partly be explained by the long tradition of outdoor life, and by extension, the "aesthetic and symbolic values of nature", which had been central since the late 1800s. Furthermore, as environmental problems became "visible", there was not only a solid foundation of "nature interest", but influential environmental

[91] It should be clear that I'm not suggesting that colonial powers entirely *lost* control since "corporate control over resource extraction" certainly continued (Smith, 2007: 28).
[92] This, of course, is not to suggest that environmental problems had not been recognized prior to the 1960s (see Söderqvist, 1986: 271; Sörlin, 1991: 121).

organizations such as the Swedish Environmental Protection Agency which was equipped with both activists and rhetoric (and to some extent, influence) (Sörlin, 1991: 193).

In the 1960s, ecology became a significant and independent discipline with more and more funding (Sörlin, 1991: 257)[93] and "the ecological rhetoric" was appropriated by "increasingly more powerful institutions" (the tradition of outdoor life was important for the development of ecology. For example, in the 1950s and 1960s, field-biologists and ornithologists enrolled in undergraduate courses in ecology) (Sörlin, 1991: 193). However, "the rapid rise of ecology" in the post-war era, Söderqvist (1986: 271) argues, "was [not] a consequence of the environmental crisis". Rather, the rise of ecology was "a consequence of a naturalist mass movement in the universities". Yet, this does not exclude that

> …a sufficient number of articulate ecologists on the national science policy scene made it possible to translate the concern for the environment and the deterioration of the nation's natural resources into the language of ecology. The expanding social order of ecology promised a specific scientific solution to the ghost of general pollution and poisoning threatening the basis of society; the ecologists succeeded in defining the environmental crisis as an ecological problem (Söderqvist, 1986: 271).

In other words, ecology did not develop as a response to the environmental crisis, but it became enmeshed with and offered tools for grasping and dealing with the environmental crisis. In this vein, Sörlin (1991: 119) suggests that "The keyword in the post-war environmental discussion has been ecology; it is the sensitive biological connections in nature that have been in focus", and that it was "Through an interplay between external social forces and the inner organization of ecological research that the environmental crisis could have such a powerful impact" (Sörlin, 1991: 193).[94]

Two years after the first Earth Day event – the "birth moment of the American environmental movement" by which approximately 20 million people participated (Heidenblad, 2021: 18) – The United Nation's International Environmental Conference took place in Stockholm in 1972. The conference assembled politicians, researchers, and activists, and the discussions that lasted for two weeks "were based on a growing realization that humanity was threatened. Humans themselves were on the verge of destroying their own living environment" (Heidenblad, 2021: 1). That the environment, and therefore also humanity, was threatened did not come as a shock to people living in Sweden: newspapers, radio, and television had reported about "the global

[93] For a history of ecology in Sweden, see Söderqvist (1986). For histories of ecology and/or ecological thought outside Sweden, see e.g., Bramwell (1989) and Worster (1994).
[94] In short, ecology "deals with interrelationships". Although ecology has a long history, it was, as was mentioned earlier, first defined by Ernst Haeckel in 1866 "for his study of the patterns of relations between organisms and their environment" (Worster, 1994: 471).

environmental crisis", pupils had become aware of the crisis through various educational days and documentaries, and the five parties of the parliament debated the issue intensively (Heidenblad, 2021: 1). While the conference demonstrated the "Swedish Social Democratic government's commitment to environmentalism" (Thörn & Svenberg, 2017: 193) it sought to address "global problems of nuclear proliferation, overpopulation, overconsumption, industrial pollution, and resource exhaustion" (Worster, 1994: 358). Although the Conference addressed the ticking bomb recognized by Carson, it certainly also – by discussing "overpopulation" – addressed "yet another bomb ticking" recognized by Paul Ehrlich and others, a bomb "ready to usher in chaos and mass death" (Worster, 1994: 353). That is, the so-called "population bomb" or "population explosion", which would outstrip the resources available needed to secure means of subsistence. The population had exceeded three billion and increased at a rate of 2 % annually (in poorer countries, the rate was about 3 % or even higher). Therefore, "human biology…had become a factor in the rush to Armageddon. Once more the wraith of Thomas Malthus materialized, warning of approaching limits to human population and human consumption" (Worster, 1994: 354). Perhaps regardless of the problem that was formulated, "scientific evidence show[ed] that humanity itself was endangered, since the order of nature was violated by societies' utilization of nature", and therefore, "a political change toward an ecological society was needed to avoid catastrophe" (Linnér, 1998: 147).

The Conference was also an important source for the Swedish environmental education movement. Environmental education was not a new phenomenon to the 1960s as outdoor education had been an integral part of the curriculum since the early 1900s, in which a "care for nature and environmental concern have been recurring themes in these activities" (Öhman, 2011: 4). Nonetheless, in the 1960s the tradition of outdoor education merged with "the new wave of environmentalism", and this, Öhman (2011: 4) argues, created a foundation for environmental education in Sweden. "At this conference", Öhman (2011: 4) further writes, "education was emphasized as a key issue in environmental protection".

Although valuable and important advances (political, intellectual, pedagogical) were made to address pressing and absolutely pivotal questions, what is at stake here is how certain debates about the environment and population were embedded in, and framed by ideology; the latter, for example, by being framed within (neo-)Malthusianism logic. The following two chapters investigate two areas of geographical content – i.e., environmental questions and the population explosion – which not only have gone relatively unnoticed by scholars of Swedish geographic curriculum theory (Molin, 2006; Wennberg, 1990; Holmén & Anderberg, 1993), but are indispensable for appreciating the

historical (re)articulation of ideologies of nature within the geography textbooks, and therefore, they deserve greater scrutiny.[95]

In this chapter, we will focus on environmental questions, while the next chapter will focus on the population question. Although separated here, they nonetheless need to be understood as deeply intertwined. They share common ground in the sense that both were concerned with the human impact on the environment, and ultimately the survival of humanity. However, although interwoven, their analyses, perspectives and arguments diverged to a lesser or greater extent. Given that their analyses, perspectives, and arguments diverged, I would argue that it is worthwhile to examine them independently.

By narrating the development of ideologies of nature, the present chapter is structured into two larger sections; pre-1968-1969 and post-1968-1969. The former investigates the emergence of important ideologies of nature. The latter follows this lead by specifically examining the recognition of an 'environmental crisis' and three different but related responses and/or reactions to the crisis. In the final part, I bring together the insights of the various ideologies of nature that have been at work and consider their significance and implications.

Valuing nature on its own terms

Although regional geography still dominated after the curriculum reform of 1962 (Molin, 2006) the geography syllabus also put an emphasis on nature (and culture) conservation (Lgr62: 263). Within a different historical context and an entirely new generation of textbook authors, a whole new set of important and fascinating ideas emerged. To set the stage, I will offer a few textbook passages:

> Human enterprise has since long utilized the soil, water, plants and animals. Later on the forest, the resources in the mountains (metals, coal, petroleum) and waterpower have gained increased significance for business. Rapid population growth and the rapid transformation of business have forced humans to utilize natural resources to a greater degree. *Nature can be pictured* [liknas vid] *as a capital that humans collect interest from*. If the capital decreases through overexploitation, the interest, i.e., return [yield, revenue] will decrease. A forest that is chopped down does not provide any return in the future, exploited soil provides smaller harvests etc. *Also untouched nature is through its beauty a capital that needs protection. Humans living now do not have the right to*

[95] As was noted in chapter two, in the 1960s geography as an independent and coherent subject was abolished at upper secondary level (gymnasiet). However, this did not entail that geography entirely disappeared as human geography was incorporated into civics and physical geography was incorporated into natural science. At secondary level (högstadiet), not only did geography continue to exist as an independent and coherent subject – as argued earlier, this thesis seeks to make an argument about *geography*) – but geography addressed and discussed in sophisticated ways both environmental problems and the population explosion. Therefore, this and the next chapter focuses on textbooks used at secondary level.

> *make rash interventions there. Humans in the future should also have the right to enjoy the beauty of the land*. Natural resources have been managed badly by humans. Foolishness, ignorance and the desire for economic profit together with a too extensive population have contributed to destroying large parts of our land through overexploitation (Sellergren, 1963: 172, emphasis added).

> Every year, many people from other countries come to the Nordic countries as tourists to experience the beauty of the Nordic landscape. For these tourists…[the Nordic landscape] appears to a large degree as wilderness where the distance between human settlement is vast (p. 50)…[I]n southern Sweden and Denmark the *beautiful beech forests can be found*…We have all sometime hiked in the forest and enjoyed the tranquillity and the changing nature. These forests also constitute a very important *natural resource that generates large revenues*. *A meticulous maintenance of the forest is necessary however for it to become a permanent value* (Sellergren & Skoglund, 1963: 52, emphasis added).

> The need for energy is massive in modern society and the water found in larger watercourses that can provide electricity is tamed by dams and water-tunnels. Unfortunately the supply of fish is restricted. The aesthetic values [skönhetsvärden] rapids and waterfalls constitute are also lost. However, some particularly beautiful waterfalls have been preserved. An example is Niagara Falls in North America (Sellergren, 1963: 174).

> Our lakes are of inestimable value for our country. We like to visit the shore, whether it involves bathing, fishing or hiking. The beauty of the Nordic landscape depends to a large degree on the many lakes. Unfortunately many of these are heavily polluted by emissions from cities and industries (Sellergren & Skoglund, 1963: 54).

> In all times, the lake has attracted humans. The lake provides fish to eat. The view is open and free. The lake also has an aesthetic value…Modern technology has enabled very rapid changes in the landscape, and generally it goes faster to destroy than to improve (Holdar & Rydefält, 1968: 26).

Clearly, early on environmental questions were addressed and an "environmental consciousness" was reflected in the textbooks. Regarding these passages, it is quite fascinating how two different vantage-points – or perhaps conceptions of nature – were pieced together, at work, and articulated. On the one hand, nature is objectified; it is a 'raw material' and an external 'thing' for humans to utilize or exploit (and turn into a commodity). As such, nature operates merely as economic value. This is of course best illustrated by the idea that nature can be "pictured as a capital" we "collect interest from" or the way in which natural resources "generate large revenues". However, nature as

economic capital – as well as the interest we may collect – can be 'devalued' if the soil or the forest is overexploited.

But on the other hand, the 'beauty' and 'aesthetic value' of nature is continuously emphasized. For example, nature as an untouched and pristine domain is also a capital because of its beauty. Certainly, the importance of aesthetic values should not be denied – indisputably most of us are not inclined to live in a world without aesthetics – but by 'valuing' nature in such a way, nature has intrinsic value, and because of nature's intrinsic value, it must be *protected* from overexploitation and destructive human interference. Thus, humans do not have the right to make "rash interventions" *in* (external) nature because its value must be preserved for future enjoyment.

However, in other passages, protecting nature is not the explicit concern; rather, the concern revolves around the fact that the aesthetic value of lakes and waterfalls was lost or is threatened due to the human impact on the environment, such as modern technology and pollution. As we see, 'water' was of particular importance. While the lakes were an "inestimable value for our country", it was with 'water' that the aesthetic value of nature, the human experience of nature, and nature as a place for recreation coalesces (universal nature). Accordingly, there is a form of romanticism at work and a concern about losing the pristineness of nature, or put differently, an authentic and pure nature.

It is not entirely easy to reconcile these two articulations of nature. That is because there is on the one hand, a strand of technocentrism and anthropocentrism at work by which "the control and manipulation of nature" serves human ends, and on the other hand, a strand of ecocentrism at work which emphasizes nature's (and humanity's) "inherent rights to existence" on existential and moral grounds (Castree, 2000a: 11). On these grounds, it is often suggested that nature must be 'saved' and 'preserved' (see Castree, 2000b: 277), for example in the case that nature needs protection because of its beauty. Yet, economically, by both maintaining that a "meticulous maintenance" is needed for nature to become a "permanent value" and that an exploited forest does not generate future returns at least indicates a need to conserve and 'save' nature for future use.

It is also worthwhile to address the attempt to explain 'overexploitation', by which the desire for economic profit, foolishness, ignorance and a too numerous population are all part of the equation.[96] Reverting to those factors is, of course, not entirely wrong, but it appears – at least in part – as if 'human nature' is made responsible. On the contrary, if the profit motive of capitalism (Smith, 1990) generates 'overexploitation', then the explanatory power of desire, foolishness and ignorance would be stripped. That is, the capitalist production of nature with its exchange value relation with nature will produce

[96] Here we see how the population – or population growth – was understood to put pressure on the environment. I will not deal with this here since this is the topic of the next chapter.

nature no matter what and that may even require the opposite to ignorance and foolishness. The making of a particular nature – utilizing natural resources, building dams and water-tunnels or using technology to (re)shape the landscape – thus occurs according to a specific logic.

Although these passages have valued a primordial and pristine nature, there was simultaneously in the textbook by Holdar & Rydefält (1968) a view that deflated the pristineness of nature:

> These days we cannot speak about the forests as wilderness. Nearly all forests are cared for [vårdas]. Large areas are sprayed against pests, commercial fertilizers supply the woodlands and ditches are dug (draining) in woodlands with too much water [vattensjuk], as if it was a cropland. Therefore we call our Nordic forests 'cultural forests' (Holdar & Rydefält, 1968: 19).

Surely, the notion of wilderness is deeply problematic since it is a 'cultural construction' itself (cf. Cronon, 1996), yet what we find here is a recognition that nature is not as natural as it appears. Rather, there is a particular social production of nature by which the forest is a product of human labour, a labour that alters the very form of nature and actively shapes the conditions under which it operates. Despite acknowledging the social production of forests, the forest also appears to have some intrinsic qualities. Hence, by discussing nature conservation, the same textbook suggested that:

> The forest is an environment where different plants and animals, both small and large, for thousands of years have adapted themselves in accordance to each other. If one disturbs something in this unity, it can react harmfully [återverka skadligt] on everything else in the forest environment. Therefore it is natural that among forest officials and workers we find many of our country's leading conservationists (Holdar & Rydefält, 1968: 80).

Articulated here are ideas of interplay and equilibrium, and in turn, more broadly an 'ecology' approach to nature. Such conceptions of nature signal that there are certain intrinsic properties (nature as essence) within nature. In focusing on the natural environment of a forest, it was suggested that delicate relations between non-human species have developed throughout the long haul of natural history – different parts of nature have 'adapted' to and exists in an interplay with each other – and if 'one' (the human I assume) interferes with this external and fragile natural 'unity', it may harm these delicate relations between non-human species.[97] However, besides the fact that nature is operating according to its own laws, it is simultaneously the work of a specific kind of labour that makes nature natural; that is, labour produces a supposedly prehistorical and pristine nature (Smith, 1990). The work of conservationists, then, is to conserve and preserve these delicate natural relations. Quite

[97] Ideas of nature such as these – as will be demonstrated further on – were further developed during the 1970-1980s.

notably, nature cannot only be nature and left on its own, but it necessarily involves labour to keep nature natural.

In sum, in the textbooks published between 1963 and 1968 there was an unequivocal concern about a threatened pure nature and the human impact on the environment, but also a sense that it takes a lot of work to keep nature 'natural'. With that, there was in some respects a drive to 'save' and 'preserve' nature. By the end of the decade, environmental questions were taken to a different level with, for example, the publication of the textbook by Modie & Moen (1968) and the curriculum reform of 1969. Yet, by reading the geography syllabus (Lgr 69) it is not entirely clear why there was an increased focus on environmental questions. The curriculum, however, offers a few insights:

> In the curriculum the concept of environmental protection [Miljövård] is superior to the concept of nature conservation [naturvård]…[Regarding] the total living environment of humans, teaching must include the elementary study of natural resources and the biological connections in nature…Environmental protection is one of the most pressing problems for modern society. Urbanization, the industrial development and changes regarding the way the soil and forest is cultivated have entailed serious disturbances in the living environment. The utilization of natural resources, which cannot be renewed, as well as a too hard and biologically inadequate utilization of natural capital gives rise to legitimate concerns for the future (Lgr 69: 51).

By stressing the need for environmental protection and the human/societal impact on the (living) environment, the curriculum made it especially clear that an environmental crisis was evolving. While this passage was written for education more broadly, geography provided in various ways a response. Let us therefore turn to how textbooks addressed the environmental crisis.

1968 – an environmental crisis

In what follows, we will focus on the scope and content of the environmental crisis.[98] This will be done by first investigating what can be referred to as the 'matter of nature'; how the textbooks described the realities of the environmental crises, and secondly, what can be viewed as three diverse – albeit

[98] Environmental questions became explicit in geography textbooks by the late 1960s, especially with the textbook by Modie & Moen (1968) and after the curricular reform of 1969 (Lgr 69). As such, environmental questions became either an entire chapter or a section as part of a chapter. These chapters/sections were, to take some examples, titled "Environmental destruction and environmental protection" (Forsström et al., 1976 & Forsström et al., 1980), "The threatened living environment" (Nordström et al., 1975 and Thorstensson et al., 1978), "Our threatened environment" (Barrefors et al., 1977), "The human and the environment" (Thorstensson, 1985). Although it is sometimes difficult to draw definite lines between what is and what is not considered to be environmental problems, approximately these sections/chapters range from 5 to 14 pages each.

similar – responses and/or reactions to the environmental crises. While ideologies of nature are embedded and articulated within both the former and latter, it is especially within the latter that our ideas, conceptions, understandings and beliefs about nature becomes explicitly articulated. That is to say, these three responses and/or reactions offer important insights concerning how ideologies of nature were (re)articulated as well as concerning the workings of ideology.

Producing nature by producing nature

In the textbooks, the matter of nature was clearly on the agenda and ranged from waste, nuclear waste, resource depletion, smog, oil spills, mercury poisoning, pollution, soil erosion, irrigation and acidification. As such, there was a concern and commitment to address the environmental crisis. I will here use some examples to illustrate how the transformation of nature was depicted. Some textbooks explicitly adopted the strategy of describing the human and societal impacts on air, water and land. In one of the first textbooks – Modie & Moen (1968) – a picture illustrated an industry with smoke pouring out from the chimneys. The reader learns that the air in urban areas is heavily polluted by industries, heating-facilities and exhaust from automobiles: "Industries pollute the air with e.g., coal, sulphur and soot. Over Stockholm falls 25 000 tons of sulphur every year – over Sweden in total falls about 250 000 tons of sulphur" (Modie & Moen, 1968: 193).

In terms of water, Modie & Moen point out that the largest consumer is the industry. As "society develops" with increasing water consumption as a result, deeper wells have to be drilled while lakes and watercourses have to be exploited even harder. But as society exploits more water, large quantities of water are also released back into the watercourses. This has "transformed the originally quite clean water to a polluted and often harmful sludge [sörja]…Industry has also contributed to the filthy water by releasing waste…These days farmers use large amounts of fertilizers… [which] deteriorates the water even further" (Modie & Moen, 1968: 195). With a heightened level of cultural eutrophication, bacteria thrive in these anaerobic environments. Thereby "The lake is slowly transformed into a stinking, muddy, life-less soup with a slimy bottom and the surface is covered with a green mass of algae" (Modie & Moen, 1968: 195-196).

The last problem addressed by Modie & Moen (1968) is the "dangerous biocides" such as pesticides (DDT) and the use of mordants (containing mercury). Not only are birds affected by biocide poisoning, but humans may experience balance disorders, dizziness and impaired vision, while DDT in particular may cause cancer or even changes to human genes [arvsanlag]. In their discussion of dangerous biocides, Modie & Moen (1968) suggested:

> [The use of mordants is]…a cautionary [avskräckande] example of what can happen when the human tries to intervene in nature and affect it. Large changes are occurring on earth, in the air and in the water – and behind these changes stand the human as the manufacturer and disseminator of chemical substances. Substances that never appear in nature by themselves have more profound effects than one could possibly dream of (Modie & Moen, 1968: 198).

As such, Modie & Moen placed an emphasis on 'human' impact and the ways humans were responsible for causing changes in nature.

Similarly, concerning environmental destruction and natural conservation, Forsström et al. (1976) also discussed the impact on air, land and water. Regarding air, the authors wrote that "Above all it is the development of automobiles [bilismen], urban areas and industry that have raised questions concerning air conservation [luftvård]. The emissions of pollutants [förorenade ämnen] have reached such a scale that the situation is becoming critical" (Forsström et al., 1973: 104). But industry is hugely responsible for emitting one particular substance, namely sulphur. The problem with such emissions is the large-scale environmental problems they generate; that is "…the emission of sulphur…is the largest problem concerning air pollution [since] it also entails an acidification of land and water…Pollution is transferred from the air to the land with rain and snow…The land receives too many unfamiliar [främmande] substances and becomes poisoned" (Forsström et al., 1973: 107).

By discussing the impact on water, Forsström et al. (1973) acknowledge that the deposition of "foreign substances" of 'modern society' is greater than the water can withstand. For instance, phosphate-rich substances travel with sewage into the watercourses, which leads to eutrophication. Above all, urban areas and industry were responsible for water pollution.

By the 1970s, in other words, the environmental crisis was not only clearly acknowledged, but the textbooks did a great job of detailing the scope of the crisis. Within this context, we see certain articulations by which modern society, humans, industry, urban areas, automobiles and the like are responsible for causing environmental degradation. For example, Thorstensson et al. (1978) noted that "Increasing affluence in industrial countries has meant several interventions [ingrepp] into nature" (Thorstensson et al., 1978: 114). What they had in mind was emissions from industries and houses which deteriorate watercourses, the use of fuel-oils which pollute the air, and "interventions" into rivers in order to generate electricity. However, despite recognizing the massive environmental impact humans have had, understanding the environmental crisis in such a way poses a problem; that is, their understanding was limited through the workings of ideology.

This in many ways derives from how these textbook authors *conceive* of 'nature' and the environmental crisis. Specifically, the notion that humans (in general) are responsible for environmental degradation is one aspect (nature as universal), and the way in which nature is 'impacted' or 'intervened in' is

another aspect (nature as external). To develop this point, we can – which might appear as strange – turn to Smith's (1990) critique of the "domination of nature thesis". The "domination of nature thesis" was plagued by a similar problem in the sense that the focus was on the relation or conflict between humans and nature generally. Therefore, "the political struggle is not aimed at the capitalist use and the production of nature, but at the general misuse…by the human species. The 'human condition' not capitalism becomes the historic villain and political target" (Smith, 1990: 29). By contrast, again in Smith's (1990: 63-64) words, "Like pollution, much of the production of nature is the indeliberate, uncontrolled result of the production process". While for example mordants, fertilizers and DDT are commodities, a polluted and/or deteriorated environment is certainly a produced first nature, but not consciously made or entirely controlled. The crucial point is that production is not geared towards generating pollution, but nonetheless, pollution needs to be understood as internal – and not external – to production in the sense that a new first nature (a polluted nature), is produced out of and from within, a second nature (industry, society).

In what follows, we will turn to the three responses and/or reactions to the environmental crisis that were developed in the late 1960s, 1970s and 1980s: namely equilibrium, restoration and an ecosystem approach. While there is considerable overlap between these, they have been separated in order to evaluate them on their own terms.

Nature's delicate equilibrium

The textbook by Modie & Moen (1968) took the example of a lake, a lake that has suffered from eutrophication: that is, the creation of high levels of anaerobic bacteria and malodorous hydrogen sulphide, by which some animals would be killed while some bacteria would thrive. As such:

> The lake is slowly transformed into a stinking, turbid, lifeless soup with a slimy bottom and a surface covered with a green mass of algae. Despite plenty of lakes and watercourses with a good ability to clean themselves, water pollution is becoming so widespread that we need to take measures. We have so far not done enough to manage this problem and many watercourses have therefore *suffered almost irreparable damage*. The governments of cities and societies are becoming more aware of the improvements necessary for our *beautiful* lakes and watercourses (Modie & Moen, 1968: 195-196, emphasis added).

Obviously, what this passage describes is a serious environmental problem; there is no need to diminish that. However, what warrants attention and is crucial here is the articulation that nature can suffer "irreparable damage". Within the context it was formulated, such a notion – which may seem unquestionable – suggests that the lake was natural, that it has become less

natural, but through various measures it could become natural again. Yet, in addition to the concern about losing an authentic nature, nature itself appears to have certain internal boundaries and/or tipping points. If nature is damaged enough, nature and its internal qualities (nature as essence) may reach an end-point by which nature is no longer nature. Hence the way forward – if we want to preserve our beautiful lakes – is to 'improve' and restore nature to its natural condition rather than alter the processes that went into its making. This is not to dismiss deep and real environmental problems; rather it is to testify to the power of an external nature (Smith, 1990). Thus, the point here is that with a belief of an autonomous nature separated from society, the concern, focus and emphasis is put on nature itself and, in turn, the need and urgency to save (protect) a pristine and an external nature. The production of nature generating environmental degradation (in the first place) may continue since the effort is to improve the quality of external nature.

Following this, Modie & Moen (1968) discuss the use of toxins within agriculture and the problems this has caused around the world. Yet, various actors such as state agencies [myndigheter], chemical industries and nature conservation agencies have realized the problems and started to take countermeasures:

> The worst danger might be over in a few years and *nature can start to recover itself* [börjar återhämta sig] *from the hard impacts*. But we shall not forget what we have learned from what has happened. It is extremely *risky for humans to intervene in nature.* The *prevailing equilibrium* [den jämvikt som råder] can easily become disrupted and the *consequences might be impossible to repair* (Modie & Moen, 1968: 201, emphasis added).

Obviously, what is articulated here is the notion of equilibrium. Equilibrium is certainly deeply important if we wish to have saner environments; there is no need to dismiss the idea. At the same time, it reveals quite a lot about the ambiguity of nature. According to the notion of equilibrium, there is an 'order of nature', and nature has an essence – which is to say that equilibrium constitutes nature's 'natural' condition. Equilibrium attempts not only to capture the 'realness' of nature, but account for how the non-human (external) works on its own terms; that is, there seems to be a particular moment when nature is in its most natural condition, and this moment is when there is a harmonious equilibrium. Since there must be an equilibrium between 'something', there are within nature interrelations and connections between different parts (organisms), which, in turn, forms a system. Accordingly, equilibrium can be viewed as something stable. As Bramwell (1989: 31) notes, though discussing the meaning of balance in nature, "Balance implies symmetry. It implies two or more symmetrical parts, in equilibrium. It also implies stasis; some element of to and fro movement to keep the system balanced".

Furthermore, it was articulated that not only is nature an external autonomous realm which humans *intervene* in, but that humans potentially are a destructive force. At a particular time and place, humans unsuccessfully and disastrously *intervened* in nature by which nature's fragile equilibrium (its order) was disrupted. Simultaneously, since human interference may disrupt the equilibrium – causing disequilibrium – nature must be carefully dealt with or perhaps even entirely abandoned. In other words, the power of external nature dictates the terms (Smith, 1990). That is to say, nature will recover from the 'hard impacts' either when humans no longer (or less) forcefully intervene in nature or perhaps, on the contrary, when human activity works to restore ('repair') nature.

However, although equilibrium is necessary for the existence of nature, it need not necessarily to imply a pre-historic, eternal and purely *stable* nature. As Pepper (1989: 104-105; original emphasis) argues, equilibrium "does not imply [an] *unchanging* existence, for natural equilibrium is rarely static. Systems change and evolve while maintaining equilibrium; thus they display *dynamic equilibrium*". "Once thresholds are crossed then stability occurs around a new equilibrium" Pepper (1989: 105) continues, and in this sense, not only did Pepper shed light on the difference between equilibrium/old ecology and non-equilibrium/new ecology (something we will return to), but that there is a tension between (dis)equilibria. This means that it makes little sense to conceive of equilibria as either stable *or* dynamic, rather equilibria are just as important as disequilibria, by which natural equilibria flow from one state to another (stable *and* dynamic). To use Bramwell's (1989: 32) words again: "there is change in nature, sometimes exogenous, sometimes endogenous…nature moves from one state of equilibrium to another via a state of change or excitation". Whether equilibria are interpreted as stable or dynamic (or both), there is a certain 'order of nature', i.e., 'order' may imply both stasis and change. Accordingly, while we are here referring to an autonomous nature, humans, then, have unsuccessfully and disastrously *intervened* in nature, disrupting the stable *and* dynamic equilibrium.

If natural equilibrium is interpreted as stable or dynamic, and if humans and nature are placed in different corners, then one problem is that it conceals the importance of history. While this will be discussed more later on, for now we can say that it conceals the fact that "everything we know about environmental history suggests that people have been manipulating the natural world on various scales for as long as we have a record of their passing" (Cronon, 1996: 19). If equilibrium is interpreted as dynamic and changing, and, in turn, if there is an internal relation between humans and nature, then, humans have always produced whatever nature we have encountered. As such, humans have always 'intervened in nature' and 'disturbed the prevailing equilibrium' from the outset (Castree, 2000b; Smith, 1990) – there is a tension between (dis)equilibria here too – thereby creating what we might call historical equilibria or perhaps historically produced equilibria.

However, the idea of equilibrium was not always explicitly articulated in the textbooks of the era:

> Environmental problems concern all people. It is not just a question that we must learn not to throw plastic bags and beer cans in nature. It is much more. We must be prepared to pay for cleaner water and clean air. We must learn to understand that *without balance in nature nothing alive can exist on earth* (Forsström et al., 1976: 115, emphasis added).

> Generally one has in recent years realized the importance of conserving [vårdas] nature. A high living standard also include the benefits of breathing clean air, having access to fresh water and a *nature where plants, animals and people can live in balance and harmony* (Thorstensson et al., 1978: 114, emphasis added).

Although deploying different concepts, balance and harmony are closely connected to the idea of an equilibrium since they harbour a similar logic and point in the same direction. And as with equilibrium, balance is crucial for saner environments, and balance can, but need not necessarily to imply stability; that is, balance can be conceived as dynamic and changing too. However, let us examine the two excerpts in order. First, it is argued that 'life' ceases to exist if there is no balance in nature. Yet, if balance within nature is necessary for life to exist – the precondition for 'life' (human and biotic non-human life in any shape or form) – are humans then part of this balance or merely dependent on this balance? In the second excerpt, the situation is somewhat different. Even though the potential balance and harmony within nature was emphasized, i.e., *can* live, the implications of such an understanding are quite clear. Without underplaying the evident significance of clean air and water and balance, the intertwining of human and non-human nature – although we may be different and distinguishable from plants and animals – reduces the human into an integral 'part' of nature, which is equivalent to other parts of nature. Hence, it places us within a harmonious and balanced nature. In such a way – with the universal conception of nature at work – humans become 'part of' and merely cogs 'within' nature. (Smith, 1990).

Thus, one response and/or reaction was to articulate a concern about (dis)equilibrium and the need for (a 'natural') equilibrium – something which might be achieved without human interference – and an equilibrium between humans and nature. In what follows, we will turn restoration.

Restoring a recreational nature, or, becoming internally part of nature?

As we saw previously, it was during the 1960s that nature was connected to hiking, relaxation and enjoying 'tranquillity'. Yet, recreation was also connected to practices of restoring nature. In the form of a case study, the textbook by Modie & Moen (1968) described the small community of Kvarntorp in Sweden which had the objective of "restoring destroyed nature" and "healing the extensive wounds in nature" because of the damaging effects of mining activities. Once on the brink of devastation, efforts were made to fertilize the soil to increase vegetation and eventually cultivate trees. Areas once used for open-pit mining were to be filled with water for the purpose of planting fish, and hence allowing "for everyone to buy a fishing permit and fish" (Modie & Moen, 1968: 203). In such a way, restoring nature was connected to recreational purposes:

> The nature one thought to be destroyed will in the future become a *recreational paradise with leafy deciduous forests, meadows and beautiful bathing- and fishing lakes*. With good will one can recreate what an industry destroys. If the experiments at Kvarntorp are successful other industries will probably try to *recreate nature* in similar ways. In the future, then, we can avoid seeing *dreadful landscapes* (Modie & Moen, 1968: 203: emphasis added).

> Among the larger lakes – one is called Nordsjön – places for bathing will be organized. There will be beaches, diving towers, bathing cabins and racetracks. The water will be very good. Piles of waste will be >>processed>> [sic]. Though the industry was shut down, there is even after a long time ashes burning in the mountain and a malodorous smoke spreads across the plain. Once the fire goes out, a slalom track will be constructed on the mountain. Eventually, perhaps even other winter sport facilities may be constructed (Modie & Moen, 1968: 203).

As pointed to earlier – that many of us are perhaps not inclined to live a world without aesthetics – many of us would certainly prefer a paradise and a beautiful landscape rather than 'dreadful landscapes'. In order to create such a landscape and healthy places for recreation, nature requires careful attention and maintenance; that is, the nature that was almost destroyed can be fixed and managed properly and thus restored. Thus, in an optimistic light, it is possible to revert or 'recreate' nature back into a more pristine nature that was disappearing or even had disappeared. What Modie & Moen (1968) were describing, of course, is the production of nature in two different stages. First, the (mining) industry produced nature in a particular way, it created – willingly or unwillingly – 'dreadful landscapes', and secondly, people and/or industries will eventually produce a different kind nature, one which can be used for recreational purposes. Although without explicitly stating it, human labour

remains at the centre of this production in the sense that humans mix their labour with the land and by doing so, they alter the form of nature. Human labour was essential to 'destroying nature' and it will be essential for restoring nature.

Restoring nature for recreational purposes means that nature can be transformed into something to enjoy and experience, but the idea also nurtures the possibility to modify nature towards human ends; nature may accordingly be 'used' in a less harmful way. Furthermore, the practice of restoring nature for recreational purposes works according to a similar logic as, for example, national parks; this reinvigorated new (external) nature becomes a 'thing' to visit, and thus, we enter into and become part of nature (universal) (Smith, 1990).

However, there were different opinions as to whether restoration was possible or not. In Forsström et al. (1976) the picture was somewhat different:

> Already now several of our lakes are so destroyed through recklessness and ignorance that they hardly can be restored in a natural condition [naturligt skick]. Humanity cannot any longer continue with its principle of dilution [utspädningsprincip]. The human must also adhere [gå över] to nature's principle of recycling [naturens återvinningsprincip] (Forsström et al., 1976: 111).[99]

As such, by discussing the impact on water Forsström et al. expressed, in a more pessimistic light, a concern that nature is beyond saving, and therefore, reverting nature back into a natural condition seemed impossible. Forsström et al. argued that human practices applied the principle of dilution, which is to say that we, for example, dilute pollution by providing the industry with high chimneys, or that we attempt to dilute our polluted sewage water by releasing it into lakes and watercourses. However, they maintained that "…there are limits for how strong [tåliga] the complicated biological systems are which make the land and water to function as a living environment" (Forsström et al., 1976: 111)[100]. Thus, by operating with the notion of natural limits, the principle of recycling referred to the need to recycle substances that were lost (from for example sewage water) so that these can be used again.

But there is of course something more at stake here. Through the principle of dilution, human society 'impacts' (external) nature, but nature – biological systems, lakes – cannot withstand the impact since it has certain internal limits. Because of these limits and the severely impacted (external) nature, not only should substances be re-used but humans should submit to these limits and adopt to 'nature's principle of recycling'. Hence, we were outside nature, but we should somehow move 'inside' it. This implies that we should immerse ourselves within nature and thus not only respect the laws of nature but

[99] The same passage was reproduced in Forsström et al. (1980: 369).
[100] The same passage was reproduced in Forsström et al. (1980: 369).

entirely embrace and live according to them. Although writing within a different context – namely about environmental protection – Forsström et al. (1976) made it clear that adapting to nature's principle of recycling was not only used as a metaphor:

> Finally the human has started to realize that she [sic] is not the master of nature that can deal with nature however one wants [hur som helst] without the risk for setbacks. Instead, the human itself is part of nature and subject [underkastad] to the same laws as everything else that is alive [som allt annat levande] (Forsström et al., 1976: 116).[101]

Although there are valuable insights to be derived here, such as – given the environmental crisis – the need to turn away from the mastery of nature (and the form of technocentrism it implies) to what we might call, an ecological approach. And surely, humans cannot entirely escape from or separate themselves from the laws of nature. Yet, while clearly recognizing what the textbook was intending, such an ecological approach remains limited since it is pushed too far; that is, the ideology of nature is at work in a powerful way, and in some respects, it cannot be articulated more clearly. It is important to pay attention to the (historical) shifts here. Apparently, humans *have been* the 'masters of nature', a conception which echoes the idea of the domination of nature. Mastering nature – or the domination of nature – implies an external conception of nature since the "idea begins with nature and society as two separate realms" (Smith, 1990: 30).

However, moving away from 'mastery' does not in any way dissolve the ideology of nature, rather it becomes amplified. While the idea of the revenge of nature only plays a minor part here, it was quite forcefully explicated that we are 'internally' part of nature and 'internally' subject to the laws (processes and logic) of nature, and thus shaped by the structuring force of nature. Within this context, the point is that humans are reduced to and conflated with other species and organisms within nature. But, in order for us to be part of nature, an external nature must exist for us to be part of (Smith, 1990). Here it might be important to be reminded of the political implications of the ideology of nature; humans become powerless, politics and history are erased and, in particular, "nature [as] universal makes social relations as intractable and immutable as natural processes themselves" (Castree, 1995: 17).

In other words, the social relationship with nature – and the metabolism between humans and nature – is obscured since we are just another natural organism within nature. However, since humans have the capacity to produce

[101] The same passage was reproduced in Forsström et al. (1980: 378) but only half of the passage: "The human is part of nature and subjected to the same laws as everything else that is alive". Yet, in a similar fashion it is also interesting to note that in the introduction to the textbook (no page numbers), the authors wrote: "The human itself is a part of its environment and must live with it and not against it. An ecological approach to [humans, resources and resource utilization] therefore becomes natural…Nature sets the frames for human existence".

nature, it is worthwhile to question the idea that we are subject to the same laws as everything else that is alive and thus to distinguish between humans and other species and organisms (cf. Katz, 1994). As Marx & Engels (1970: 42; original emphasis; cited in Smith, 1990: 37) famously noted, humans "can be distinguished from animals by consciousness, by religion or anything else you like", but importantly, humans "*produce* their means of subsistence, a step which is conditioned by their physical organisation".

Regarding recreational environments, since Forsström et.al (1976) argued that restoration was not possible, one of the solutions proposed is instead connected to the drive for preservation:

> It has become particularly urgent to preserve large coherent untouched areas. Such areas, for example, in our archipelagos, forests and mountains can be said to be special for our country and thereby need protection. Therefore, large areas are set aside as nature-reserves to enable outdoor-hiking in as an untouched nature as possible (Forsström et.al, 1976: 114).[102]

While both restoration and preservation – as well as the idea of equilibrium – will be more thoroughly and critically assessed later on, I raise this point here because Forsström et al. explicitly connected preservation to purposes of recreation. Hence, in order to save and preserve a pristine nature that has national significance, it must be closed off in time and space (Katz, 1998). Consequently, preserving nature entails the making of an external nature for us to immerse ourselves within, which therefore simultaneously makes it a universal nature (Smith, 1990). With that said, we will turn to the third response and/or reaction; namely the concept of an ecosystem.

Understanding nature as an ecosystem

Many, if not all of us, are familiar with the concept of an ecosystem. The ecosystem – and the "web of life" that it draws on – finds its origin in Lamarck and Darwin, who by focusing on struggle and adaptation, proposed a nature defined by interrelationships. What followed from this was the idea of biotic communities, and later on, the ecosystem concept itself (Glacken, 1967). Originally, a plant ecologist – A. G. Tansley – coined the term ecosystem in 1935 to describe both the "biome", which included the wide-ranging complex of non-human organisms living together naturally as a "sociological unit" and secondly its "habitat". Tansley later wrote that "All parts of such an ecosystem – organic and inorganic, biome and habitat – may be regarded as interacting factors which, in a mature ecosystem, are in approximate equilibrium: it is through their interaction that the whole system is maintained". (Tansley, 1946: 207; cited in Stoddart, 1985: 248). Nonetheless, it was during the 1970s that

[102] The same passage was reproduced in Forsström et al. (1980: 375).

the ecosystem became an integrated concept within geography textbooks. But it is also a concept that has escaped critical scrutiny to a large extent, since as Malanson (2011: 2) explicates, the ecosystem concept has engendered no controversy in geography "despite" – or perhaps because of – "its broader appeal".

In what follows, we will survey how the idea of an ecosystem appeared in the textbooks by Forsström et al. (1976), Thorstensson et al. (1978) and Thorstensson et al. (1985). First then, Forsström et al. (1976) approached the ecosystem within the context of how the land is polluted, by which the authors maintained that through pollution "The cycle of nature is disturbed" (p. 107). This was further illustrated by a picture (Figure 1).

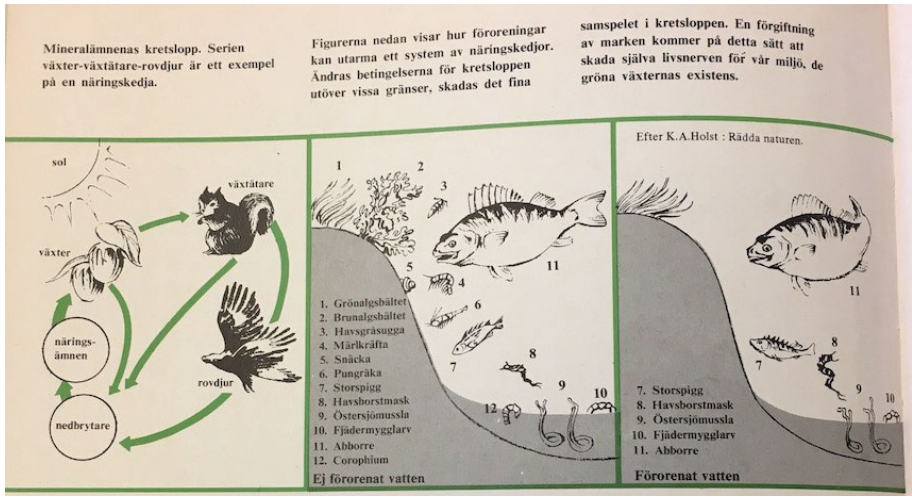

Figure 1. The caption states: "The cycle of the minerals. The series plants-herbivores-carnivores is one example of a nutritional chain. These figures below show how pollution can impoverish [utarma] a system of food chains. If the conditions for the cycle [of nature] are changed beyond certain limits[103], the delicate interplay in the cycle [of nature] will be damaged. In this way, poisoning the land will damage the essential life-nerve for our environment, the existence of green plants" (Forsström et al. 1976: 108).[104] To the left we find a nutritional chain and the interrelations between nutrients, plants, herbivores, carnivores, decomposers and, of course, the sun. In the middle, there is non-polluted water and a high biodiversity and to the right polluted water and thus less biodiversity.

Although not explicitly using the term ecosystem but instead the cycle of nature (and nutritional chain), there are some important ideas which deserve attention here. By introducing the cycle of nature [kretslopp] (rather than

[103] Ändras betingelserna för kretsloppen utöver vissa gränser
[104] Parts of this was reproduced in Forsström et al. (1980), for example by emphasizing that "Nature works in a cycle [kretslopp] according to the principle of recycling". "The cycle of nature" was demonstrated by a nutritional chain (humans excluded).

'nature's principle of recycling' [återvinning]), Forsström et al. develop a quite complex argument. Specifically, what this testifies to is that nature is conceived of as a 'system' consisting of different – yet related – parts, which is to say that nature works according to a (natural) logic. Apparently, for or within the cycle of nature there seems to be certain *natural* "conditions" and if these "are changed beyond certain *limits*" – a notion suggesting that there are certain limits residing 'in nature' (ecological limits, or a certain carrying capacity) – the cycle of nature "will be damaged". In such a way, *natural* conditions determine the cycle of nature. Operating within an autonomous and law-bound external nature, the cycle of nature and these three ideas (conditions, limits, interplay) not only suggest that nature is a structuring force, but that there are specific intrinsic and universal qualities – nature as essence – within nature, qualities which make nature 'natural', or perhaps constitute the 'naturalness' of nature. That is to say, Forsström et al. attempt to capture nature in its 'natural state'. Since there are certain *natural* conditions, limits, and a delicate interplay which might be damaged considering that humans are understood as polluters impacting biodiversity, it follows from such an account that these intrinsic qualities should be respected and maintained; that is, they are essential for preserving the cycle of nature in a natural state.

The textbooks by Thorstensson et al. (1978) and Thorstensson et al. (1985), respectively, more explicitly developed the idea of an ecosystem and related it to the cycle of nature:

> All green plants and the important microscopic plankton-algae are dependent on the life-supporting solar radiation for their existence and development. These organisms constitute food for herbivores…*These herbivores may in turn become eaten by carnivores or possibly by humans*…Waste products and dead organisms are decomposed [bryts ner] by different bacteria and funguses, which also play an important role in the cycle of nature [naturens kretslopp]…*A mountain creek is an ecological system where many species of plants and animals are dependent on each other for their existence. The system can easily become unbalanced and cease to function* (Thorstensson et al., 1978: 115; emphasis added).

Through the lens of an ecosystem, nature was conceived as a larger system whereby a part (organism, plant, species) within nature played a specific and crucial role. This is seen both through the example of a nutritional chain and the 'mountain creek'. Importantly, the idea of interdependency is at work. In order for the larger (eco)system to function and survive, the relations between the parts must be maintained and there must be equilibrium between different parts. Accordingly, the parts (of nature) constitute the system (of nature). This is perhaps best illustrated with the mountain creek by which various interdependent parts create a system, but that the system might become disturbed and cease to function if there is a disequilibrium between the parts. By understanding nature through such a lens, nature is both 'part' and 'system'. Additionally,

humans – as this excerpt reads – are only part of the nutritional chain. The question arises whether humans may become part of the mountain creek if visited, and are we then external to nature or perhaps part of some other ecosystem? Furthermore:

> All parts that participate in the cycle [of nature] are equally important. The interplay risks coming into unbalance if any of the species disappear. The cycle does not work [emphasis added]. The number of species participating in the cycle of nature, the so-called ecological system [original emphasis], is very extensive. Every place, for instance a bay, a glade, a meadow, or a creek, forms an ecosystem in itself, in which perhaps hundreds of different species can be dependent on each other for their existence…Since we don't know all the details in the ecosystem, there is a risk that humans interfere with the essential interplay through their encroachment in nature. It is not enough to conserve [vårda] a part of nature, we must conserve and preserve every little part included in the larger cycle [of nature]…Nature's own cycle, the ecological system, works best without human encroachments (Thorstensson et al., 1978: 116; emphasis added).

Concerning this excerpt, first, we learn that all parts within nature are equally valuable and that there might be disequilibrium if any species disappears; thus, the "cycle does not work". Again, there is an interdependency within nature since various species (parts) are dependent on each other for their survival. Secondly, humans are not part of the ecosystem. Rather, humans may interfere with nature's intrinsic qualities (the "essential interplay") and therefore, human interference is conceived as destructive given that nature "works best without human encroachment". Thirdly, we should conserve and preserve every little part of nature since these parts constitute the larger whole. Through and through, nature is fundamentally external to human society – yet simultaneously – since humans should not interfere with nature, humans are subdued to the logic of external nature. As such, nature set the terms and functions therefore as a determinant. Articulating the ideology of nature in such a way – humans as separated from nature and that nature is best left on its own – at least raises the question of the human necessity to produce nature for our survival. We will return to this momentarily.

Lastly, in a similar fashion, Thorstensson et al. (1985) – illustrating the "web of life" with a picture (Figure 2) – maintained that:

> All parts of nature – a bay, clearing [skogsglänta], a meadow or a creek creates a *system*, where all plant and animal species are dependent on each other…One calls such an interplay in nature a *food web* (nutritional chain) [humans are part of the food web] or an *ecological system*. All links in the chain are equally important. If one [link] ceases to function the entire chain is broken and the interplay ceases …Many of the earth's ecological system are *natural*, i.e. unaffected by the human. They are highly significant for life on earth as long as

they function. One sometimes calls these natural systems *life-supporting* ecosystems (Thorstensson, 1985: 74; original emphasis).[105]

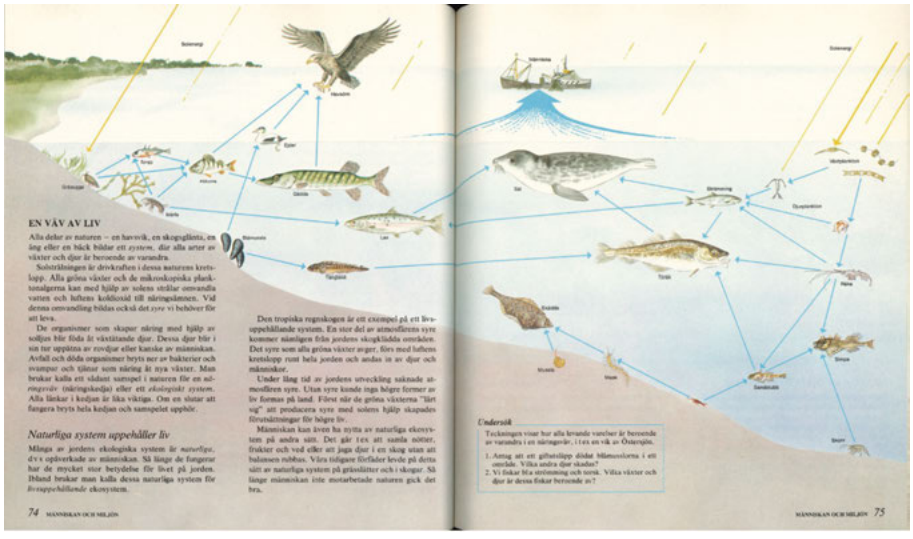

Figure 2. The picture demonstrates "A web of life". The box on the bottom of page 75 translates: "**Investigate**…The picture shows how all living species are dependent on each other in a food web, for instance a bay in the Baltic Sea. 1. Assume that toxins have killed the blue mussels in an area. What other animals are hurt? 2. We fish Baltic herring and cod among other things. What plants and animals are these fish dependent on?" (Thorstensson, 1985: 74-75). In this picture, humans are not entirely 'part of' the ecosystem. Rather, it seems as if humans – at the top of the food web – exploit, interfere and impact nature.

Again we see certain central notions regarding the ecosystem: the idea of interdependency within an ecological system, that all parts (or links) within nature are "equally important" – i.e. if any part (or link) ceases to exist the system or interplay will not function – and that humans are separated from nature. It is also important to acknowledge that – as with equilibrium – nature within the ecosystem may be conceived as something static. Thus, although the ecosystem certainly is constituted by movement and interrelations, for example through the notion of a 'cycle of nature', it also describes a closed 'state of nature'. Within this state of nature, there are certain necessary conditions and features such as interdependency and interplay between equally important

[105] The idea of the ecosystem was articulated in Sellergren & Östman (1991: 288) as well: "More and more people live in the city. The sense that also humanity is dependent on nature's ecosystem has thereby decreased. Although the technical development has been advantageous, it has led to a harsh and reckless treatment of what we are ultimately dependent on, such as water, air, plants and animals. But we are now starting to learn that there is a limit for what nature's ecosystem can tolerate of deforestation and poisoning. We live dangerously close to that limit". In other words, the idea of the ecosystem continued was continuously articulated.

parts and/or links. That is, for nature to continuously be nature, these must be maintained.

In that sense, there are similarities between the ecosystem approach articulated in the textbooks and "equilibrium ecology", which emphasized harmony, balance, stability, predictability and permanence (Neumann, 2005: 60-63) as well as the "old ecology" approach (Castree, 2005: 234). The latter maintained a belief that human and non-human species exist in stable and predictable interrelationships both with each other and with the external biophysical nature. Furthermore, humans are both a disturbing force not appreciating or respecting the fragility of the ecosystem and integrated and adapting parts of ecosystems (Castree, 2005: 234).

However, nature within the ecosystem may be conceived as dynamic and changing in the sense that as they become unbalanced, one link/chain is broken, or the interplay ceases, new ecosystems are formed. Accordingly, as mentioned earlier, there is a tension between (dis)equilibria, and there is movement and change between systems rather than within them. This line of thinking is more closely connected with "non-equilibrium ecology", which emphasized "instability, disequilibria, chaotic fluctuation and dynamism" (Neumann, 2005: 63), or the so-called "new ecology" approach. The latter draws "attention to instability, disequilibria, and chaotic fluctuations that characterize many environmental systems…it challenges the primordial assumption of systems ecology, namely that nature tends towards equilibrium and homeostasis" (Zimmerer, 1994: 109-110). Yet, as with equilibria, we are here talking about natural ecosystems rather than historically produced ecosystems.

Nonetheless, within this ecosystem approach, humans were not consistently a disturbing force. There was an understanding that our way of life before the Neolithic revolution and before the formation of societies was in equilibrium with nature:

> The human can also take advantage of natural ecosystems…It is possible for example to collect nuts, fruits and wood or to hunt animals in a forest without disturbing the balance [in nature]. In this way, our ancestors lived off natural systems on plains and in forests. As long as the human did not counteract nature it worked well (Thorstensson, 1985: 74).

Accordingly, within a somewhat romanticist view, if humans were to live as our ancestors did, the 'balance' would not be disturbed, and nature thus not counteracted. However, by contrast – and with great importance – Thorstensson et al. (1985) also suggested that "The human creates ecosystems":

> Thousands of years ago in the great river valleys, humans learned to create their own ecosystems that produced food. A field is a nutritional system [näringssystem] which provides a large amount of a certain crop, for instance wheat…Fish farming in ponds and plantation of forests are other examples of ecosystems that the human creates and utilizes…Even a factory and a city are

> a kind of an ecosystem. These artificial systems are often complicated and can easily become disordered [råka i olag] or disturb natural systems. For example, in such a way can waste from a factory poison or destroy water, air and vegetation (Thorstensson, 1985: 76).

Although the conception of an external nature was articulated by separating artificial systems and natural systems, by which the former may 'disturb' the latter, the conception of an external nature was simultaneously dissolved by acknowledging that humans do in fact create and produce nature in historically specific ways. In some ways, and quite fascinatingly, the textbook seemed to embrace Harvey's (1993: 28; original emphasis) challenging claim that "there is…nothing *unnatural* about New York City" since a factory or city (urbanization) is viewed as a produced ecosystem by which society and nature are intertwined and co-constituted. Thus, here is one crucial place where a way to understand how nature and society are co-constituted, and in turn, how ecosystems are historically produced is provided.

In sum, the ecosystem approach as it appears in geography textbooks maintains that there is a 'state of nature', which may be static and/or dynamic, by which humanity is understood not only as separated from nature, but as a destructive force. Therefore, we should separate ourselves from nature and conserve nature (care for it) given that nature (and its naturalness) otherwise might cease to exist. The ecosystem approach absorbs and internalizes many ideas that have been discussed previously, such as interplay, (un)balance, equilibrium, and that there is an 'order of nature'. But there are also other ideas of nature articulated here, such as the cycle of nature, the food web (nutritional chain), interdependency and parts/system of nature. These ideas indicate that there are certain intrinsic properties within a socially autonomous nature, properties which are part of the 'natural' condition of nature and/or a dynamic and changing nature. In turn, these constitute an ideology. This, of course, is not to argue that textbooks were wrong or bad (quite the opposite). The textbooks provided and developed a series of complex and compelling arguments rooted in ecology to address and grasp the environmental crisis. However, it is to argue that, by reverting to ecology, they were impeded or limited by the workings of ideology. In other words, ideology places certain constrains on the problem they were trying to solve. If we were to return to the question Williams (1980) posed: "Nature is…what?", we might say that nature is an "interlocking system of mutual advantage…[and] a paradigm of interdependence and cooperation" (1980: 70). But Williams (1980: 84) also maintained that – though it might not appear so – "Even the idea of the balance of nature has its social implications". In what follows, such social implications will be discussed, particularly in relation to the workings of ideology as a distortion. By using the ecosystem as a touchstone, I will return to many concepts and ideas of nature that have been reviewed in this chapter, such as restoration, preservation and the beauty of nature.

A limited ideology

Regarding the ecosystem approach and the various ideas which have been discussed so far such as conflating humans with other species and organisms – and thus how ideology works as distortion given the workings of the external and universal conception of nature – the important point is that nature appears unproduced, and consequently, our capacity and necessity to produce nature is denied. Even more so, the ecosystem (whether static or dynamic) becomes deeply ahistorical since *historical* productions of nature are concealed; that is, the ecosystem operates as a universal outside history, which, in turn, makes it eternal and grants it an existence outside time. Thus, the historically specific labour process at the centre of the production of nature and the "metabolism between human beings and nature" (Smith, 1990: 36) necessary for our survival is denied. Hence, by conceptualizing the ecosystem from the production of nature thesis in order to build on and extend the insights it offers, it would suggest that we cannot be separated from nature (or fully subjected to nature); rather we have always been part of and actively shaped ecosystems in various ways. In that sense, the ecosystem is historically dynamic. Harvey (1993) captures this in a precise way by arguing that:

> Human beings…are 'active subjects transforming nature according to its laws' and are always in the course of adapting to the ecosystems they themselves construct. It is fundamentally mistaken…to speak of the impact of society on the ecosystem…[The division between society and nature] not only makes little intuitive sense…but it also has just as little fundamental theoretical and historical justification (Harvey, 1993: 28).

As Harvey points out, humans are not subject to the forces of nature, but internally part of nature from the very beginning, and therefore shaping, constructing and adapting to nature, and in this sense, it makes sense to speak of historically produced ecosystems (or equilibria). Thus, rather than conceiving nature as something external and universal, and turning nature into something ahistorical (naturalizing and eternalizing nature), the notion of historically produced ecosystems puts an emphasis on the internal human-nature relation, and the history and the transformative capacity and necessity of humans to alter the form nature. This, it should be noted, is not to say that everything there is about the ecosystem is fully ideological. Rather, the way the idea of an ecosystem operates with an external and universal conception of nature – thereby *naturalizing* nature and social relations – proves the point.

The way in which ideology works as distortion is also important and useful in connection to conservation and preservation. Therefore, as a related point, we should consider how textbooks articulate the need to conserve and preserve an external nature (whether stable or dynamic). In some textbook passages, this is explicitly articulated. For example, nature needs protection because of its beauty (Sellergren, 1963); we must preserve untouched areas (Forsström et

al., 1976); or we must conserve and preserve every part within the larger cycle of nature (Thorstensson et al., 1978). But the drive towards conservation and preservation can be derived from the logic of the ecosystem as well; that is, through the way in which specific ideas of nature such as parts, links, balance, equilibrium, interplay and interdependency become articulated. These articulations constitute the intrinsic properties necessary for the survival of nature and these must therefore be 'saved' given that all parts and links are 'equally important' and are best 'saved' without destructive human interference and/or encroachment. As these articulated ideas "expresses a conservative exhortation to 'save' a nature that is no longer recognizable" (Smith, 1996: 39), or at least is threatened, they are not just a set of ideas rooted in ecology. As Bramwell (1989: 4) argues, "ecology is widely used…in a normative sense", i.e., "the belief that severe or drastic change within [the] system, or indeed any change which can damage any specie within it, or that disturbs the system, is seen as wrong".

In fact, this turn to conservation and preservation can be understood as articulated with and useful to the shifting contours of the capitalist production of nature. As nature was no longer an open frontier, Katz (1998: 56) put forward that "preservation…facilitate[s] the privatization of nature and…[this has] become the hallmark of global neo-liberalism". Between 1985 and 1995, which constitutes "the global rise, expansion and deepening of neoliberalism", there was a rapid increase of "protected areas" (Brockington et al., 2008: 175). Yet, while this period constitutes the most rapid rise, the curve began to climb in the 1950s (ibid: 2). [106] Katz addressed conservation and preservation from the perspective of "nature as an accumulation strategy" and "biodiversity prospecting" in the sense that, as Castree (2003: 285) phrased it with reference to Katz, "External nature has…become an 'accumulation strategy for capital" (clearly, the term biodiversity was not used in the textbooks, but biodiversity conservation and/or protection was nonetheless implied). Although Katz's emphasis is slightly different, there are, I think, parallels between Katz's argument and what I have been detailing. She wrote that:

> …much of the rhetoric advocating the salvation of particular habitats or restoration of ecological 'balance' stresses the potential uses of 'as yet unknown' species and organisms. This logic pushes instrumentalism to the vanishing point; apparently *nothing* should be allowed to become extinct, let alone

[106] It can be noted that in Sweden, 14,5 % of the surface (land and freshwater) was 'protected' in 2020 through, for example, national parks, nature reserves, nature conservation areas, or biotope protection areas (Swedish Environmental Protection Agency, 2021). While the amount of protected nature had been relatively stable from the early 1900 until the 1960s (circa 300-400 000 hectares of Sweden's surface), it is fascinating to notice that there has been a steep increase since the 1970s (SCB, 2020), now amounting to 6 498 101 hectares (Swedish Environmental Protection Agency [Naturvårdsverket], 2021).

> destroyed, because it might one day prove useful (and profitable) to humankind. Darwin be damned (Katz, 1998: 48; original emphasis).

Despite the obvious differences, predominantly that textbooks were not concerned with the usefulness (or the profitability) of the "yet unknown" nature, Katz pointed to something crucial. By operating more closely from the perspective of ecology, textbooks stressed the need for 'ecological balance', but specifically it was made clear that nature (species and organisms) needs to be preserved *on its own terms*. In other words, nothing should become extinct or destroyed because it would be against nature – its intrinsic properties – and thus 'unnatural'. That is, parts, links, chains, systems, balance and so forth must be maintained and carefully dealt with, otherwise nature might cease to exist/function. Without the different parts supporting the existence of each other, there will not be a functioning ecosystem. Such arguments, however, might carry the same implications and work towards the same consequences as Katz was arguing. Ideologically, it is not necessary to revert to the potential usefulness (or profitability) of the yet unknown in order to preserve, rather the powerful ideology of an autonomous external nature could similarly fulfil the task of preserving nature. Useful or not, nature must be *natural*; the result will still be the same, and Darwin would still be damned. However, Darwin would, of course, be less damned if the concern was to protect and preserve a dynamic and changing nature.

Accordingly, such an ideology might prove beneficial for the capitalist production of nature by facilitating a useful (use-values) and profitable nature in the future (nature then continually exists as a thing and an object to be exploited, appropriated, and shaped). Protected areas or nature reserves "invite and encourage scientific documentation and analysis of endemic flora and fauna with the explicit intent of facilitating future expropriation", thereby becoming "'a biodiversity bank'". Money is expected to be generated in the future, and as an investment, "the biodiversity bank exists for its investors" (Katz, 1998: 47-48). The links between capitalism and conservation have been firmly documented, both in a historical and contemporary perspective (Brockington et al., 2008; Brockington & Duffy, 2010; Brockington & Scholfield, 2010; Igoe et al., 2010), Brockington et al. (2008) argues not only that "Conservation and capitalism are shaping nature and society, and often in partnership" (p. 5), but that it has become "increasingly difficult to determine if we are describing conservation with capitalism as its instrument or capitalism with conservation as its instrument" (p. 6). Corson (2010: 579) similarly argues that "the international biodiversity conservation agenda has created new symbolic and material spaces for global capital expansion…[by] carv[ing] out new physical territories for capitalist accumulation". In addition, there is a "the growing capitalist enterprise…forming around the concept of biodiversity conservation".

That ideology might be useful is not to argue for a mechanistic functionalism or a direct correspondence between ideology and the capitalist production of nature; that is, as if ideology merely is an epiphenomenon of production. Neither is it about denying the importance of the ideas and arguments developed by the textbooks – a protected nature might subvert capitalist production and we might enjoy and appreciate it (see Katz, 1998; Brockington et al., 2008), and given the environmental crisis, saner environments were (and are) needed – or to suggest that such ideas and arguments were deliberately fashioned to serve the capitalist production of nature. Rather, ideology is articulated with production in the sense that, under the right conditions, the former might serve the interests of the latter, or perhaps, the latter may benefit from the former.

The ideas that are at work here are not reducible to, but they cannot, at the same time, be entirely distinguished from the "deep ecology" movement (Naess, 1973, 1984, 1986). The philosophy of deep-ecology is broad and complex but Naess (1986: 4), for example, claimed that "The well-being and flourishing of human and nonhuman life on Earth have value in themselves" and that "These values are independent of the usefulness of the nonhuman world for human purposes". Additionally, the "Richness and diversity of life-forms contribute to the relation of these values and are also values in themselves" and, in turn, human interference "is excessive"; that is, humans should only interfere with nature to "satisfy vital needs".

In other words, nature has intrinsic value, and as part of that, there is a preservationist impulse within deep-ecology. This corresponds in many ways to the ecosystem approach, for example, that all parts within nature are equally valuable, that all parts must be conserved and preserved, and that nature should be restricted from human interference. While I cannot address deep-ecology in any greater length, Soper (1996: 27) – although discussing other aspects of Naess's work – raises the important question whether we really can assert that all life forms have equal intrinsic value. For example, should the AIDS virus or streptococcus be valued in the same way as other parts within the ecosystem? Although it is perhaps not the intention by textbooks or deep-ecologists to argue for the intrinsic value of 'all life forms' – all links in the chain – of nature, it is still difficult to escape such questions.

As I said earlier, the drive towards preserving nature draws on a contradiction, something which Katz (1998) rightly and importantly identifies:

> It requires that a particular patch of nature – ecological niche, biome, or park – be cordoned off as an island in space and time. Preservation represents an attempt both to delineate and maintain a boundary in space and to arrest time in the interests of a supposedly pristine nature which, of course, is neither bounded nor static. As such, preservation is quite unecological, defying natural history and the vibrancy of the borders – physical, temporal, spatial – where evolution, change, and challenge are negotiated and worked out in nature…(Katz, 1998: 53).

In a contradictory fashion, preservation is about socially creating an apparently non-social and external nature, or following Katz (1998), to locate, fix, and preserve nature outside of culture. Since preservation requires a spatial-temporal suspension of nature, one central question is what happens outside the preserved area: "preservation of certain sites often legitimates and mystifies the continued or even heightened destructive use of all that is outside the preserve's borders" (Katz, 1998: 53; see also, Brockington et al., 2008). The very destructive process of capitalist production of nature may continue outside the preserved area while the necessary production of nature for human survival may be halted within a particular area. But while preservation offers little more than a reactionary politics, it must at least be distinguished from the politics of restoration.

Katz (1998: 55) argues that while preservation enshrines nature, restoration works nature: "rather than ignoring, eclipsing, defacing, or erasing environmental knowledge, restoration is premised on its ongoing production and exchange". Since restoration brings nature and culture together, it offers a more vital politics of nature than the politics embedded within preservation. As such, restoration could possibly "undermine preservationists'…exclusion of people from the environment, and make impossible the narrow gauge, anti-social politics of…[preservation]" (ibid).

Nonetheless, the politics of restoration, Katz (1998) maintains, is not without limits. One limitation is that it often "operates at a smaller scale than that in which many environmental problems are generated" (p. 55). Operating at a 'local scale' – such as described in the passage from the textbook about Kvarntorp – is not sufficient to create a broader transnational politics of nature (which is not to suggest that restoration at a grassroot level is unimportant).[107] Thus, since preservationists are in favour of 'saving' a static external nature outside history, the ongoing and dynamic production of nature is denied. Restoration, however, recognizes the production of nature, but from a limited point of view.

By way of working towards a conclusion, the production of nature thesis is, I think, pivotal. As Braun (2009) notes, the production of nature thesis poses

[107] On a broader note restoration should be viewed with scepticism because – as Katz (1998) argues – restoration often harbours and feeds off romantic conceptions of nature and often favours some landscapes and natures over others. Furthermore, the question is always who determines what constitutes a 'good nature'; that is, when and during which period was nature most natural? To what historical epoch should nature be restored to? The paradox of the politics of restoration, which I think Katz captures is how "Restoration ecologists appeal to 'nature' for the answers, and inevitably advocate, valorize, and fix a specific historical landscape as idealized and ahistorical, somewhat antithetical to the living, socialized ecology they set out to remake…[R]estoration ecology…tends to *naturalize the produced and produce the natural*" (Katz, 1998: 56; emphasis added).

> …an explicit challenge to the 'deep green' and 'preservationist' impulse…For many deep green environmentalists [and preservationists] nature was taken to be a realm entirely separate from, and threatened by, humans…[N]ature was that place where humans were not, and thus the presence of humans…was taken to signal the imminent *destruction* of nature…[T]his introduced a contradiction into ecological thought, for if humans signalled the 'end' of nature, then the only way to save nature would be to remove humans entirely (Braun, 2009: 25; original emphasis).

As Braun (2009: 25; original emphasis; see also Braun, 2002) continues, "such a perspective provided no basis on which to determine *how* to live in the world". For the production of nature thesis, nature does not in any sense need to be 'saved' or 'preserved' given that humans and nature are conceived as internally related. Therefore, instead of offering "an anti-social…politics of nature" (Smith, 2007: 24), the fundamental analytical and political question "becomes *how* and *why* it is that…natures are produced in the forms they are in any particular historical moment" (Braun, 2009: 25; original emphasis). In other words, rather than adhering to a mysterious 'natural' nature and a distorted view by which the contradictory relationship between external and universal nature becomes reproduced, we must find a different way of producing nature. And here, although this too is a normative claim and perhaps extends beyond the purpose of textbooks, the geography textbooks from the 1960-1980s offered precious little guidance.

Chapter 8 – The spectre of Malthus

A finite world can support only a finite population (Hardin, Garrett)

In intimate connection to the environmental crisis and the drive towards preservation, the spectre of Malthus arose within, and as part of, the rising tide of neo-Malthusianism during the 1960s and 1970s. *Neo*-Malthusianism – as the term suggests – is a historically specific form of the argument developed by the English priest, demographer and economist Tomas Malthus (1793). Malthus proposed two claims; first that food is an absolute necessity for life while 'passion between sexes' remains constant and, secondly, a mathematical principle stipulating that resources can only increase arithmetically while the population can grow exponentially. In other words, what Malthus formulated were universal natural laws. According to such 'natural laws' population growth will inevitably outstrip the amount of resources produced and available at a particular time. Thus, Malthus pessimistic argument was rather simple; there was (will be) an absolute contradiction between population growth and availability of resources (Pepper, 1989; Castree, 2005. As Sabin (2013: 6) writes, Malthus announced that "the 'power of population' exceeded 'the power in earth to produce subsistence for man [sic]'…This inherent tension…doomed humanity to harsh suffering". Accordingly, population could only be limited by increasing rates of mortality, the so-called 'positive checks' (war, starvation, disease) or by reducing the number of births through 'preventive checks' (birth control, abortion). For Malthus, misery was the inevitable result of the laws of nature, and in turn, nature was impermeable to any form of change (Pepper, 1989; Castree, 2005).

During the 1960s and 1970s, Malthus's argument was revitalized and reconfigured in various publications such as Ehrlich's (1978 [1968]) *The Population Bomb*[108], Meadows et al. (1972) *The Limits to Growth* and Hardin's *The Tragedy of the Commons* (1968) and *The Ethics of a Lifeboat* (1974). Within these works, the relationship between population and resources was understood in a particular way, a way that was then – to a lesser or greater extent – adopted by Swedish geography textbooks. In *The Limits to Growth*, which was "commissioned by the Club of Rome, an international think tank composed of industrialists and intellectuals with close links to various

[108] This book became a bestseller in the 1960s and "it even surpassed *Silent Spring,* making it the most widely spread environmentalist book in the 1960s" (Linnér, 1998: 206).

governments" (Warde et al., 2018: 48), it was "feared that complex industrial civilization as a whole might be breaking down". An ever expanding economy using more and more energy, land, minerals and water "must eventually run up against the limits of the earth" (Worster, 1994: 354; see also, Linnér, 1998: 206).[109] Although neo-Malthusian arguments had been made since the 19th century (Linnér, 1998: 205), we can at least point to two contributions prior to the 1960s. In *Road to Survival* (1948), Vogt warned for the "grave consequences" stemming from resource destruction and rapid population growth, while Osborn's (1948) *Our Plundered Planet* addressed problems of overpopulation, starvation, erosion, and desertification. In order to solve the problems humanity were facing, both saw the need for society to come "into balance with nature" and "become reconciled with the rules of nature" (Linnér, 1998: 76 & 77).

However, it is difficult not to mention the "Swedish 'glamour boy' of international food issues" Georg Borgström here (Linnér, 1998: 227). Borgström met both Osborn and Vogt, and while he created a debate about "coming disasters due to overpopulation and resource shortages" in Scandinavia, he also became "a renowned intermediary between the American and the European scenes" and "a well-known debater in the United States" (Linnér, 1998: 14). In 1953, he not only delivered a set of radio lectures – by which newspapers gave him the name "'the alarm clock from Gothenburg'" – but also published *The Earth – our Destiny* (1953). Here he distanced himself from Malthus. Among other things, Borgström maintained that the population explosion was a question that extended beyond poorer countries: for example, Europe was more densely populated, its wealth an "illusion", "protein deficit" was a fundamental problem, and one crucial reason as to why parts of Europe were producing some of the highest yields in world was the import of bone manure (Linnér, 1998: 114-115). Later on – especially after the publication of *The Limitations to Our Existence* (1964) – Borgström nonetheless drew more intellectual support from, and accepted, the views of Malthus. For Borgström – who now agreed with Malthus's law where resources only increased arithmetically and the population grew exponentially (life had always reproduced, and would continue to do so, above the levels of subsistence) – "Hunger was not only a social problem…it was utmost a biological one. Humanity cannot escape Malthus's biological law". This law could potentially lead to a catastrophe unless, for example, family planning/birth control was implemented. Yet, in contrast to Malthus's "rather dim view of the poor", Borgström argued for both "nutritional redistribution and [a] fairer world order" (Linnér, 1998: 207).

[109] A "few lines of [computer] code provided the core of one of the most politically explosive academic interventions of the era". While the *Limits to Growth* made it perfectly clear that economy was untenable, it was innovative by using a "computer that could build a simulacrum of the world and generate scenarios and predictions that would provide a lodestar for political debate" (Warde et al., 2018: 47).

How Malthus's argument was revitalized, reconfigured and, in turn, articulated in geography school textbooks from the early 1960s to the early 1990s is the focus of this chapter. Specifically, by investigating the appearance of neo-Malthusianism in geography textbooks, the chapter not only pays attention to the articulation and workings of certain ideologies of nature which are embedded within such a logic, but it also provides a critique of the neo-Malthusian logic as it appeared in geography textbooks. The chapter is structured as follows: first, it unpacks the logic and investigates the specific ideas (of nature) of neo-Malthusianism as they were developed and articulated in geography school textbooks between the early 1960s and the early to mid 1980s. Secondly, a critique of such ideas (of nature) is provided while furthermore considering the political implications of the neo-Malthusian logic. And thirdly, I consider whether the late 1980s and early 1990s constituted a moment of rupture concerning how the relationship between population and resources was understood.

Neo-Malthusianism enters the stage

The geography syllabus of 1962 emphasized that geography should provide a "Synoptic representation of the earth's demographic situation" and more precisely, an understanding concerning the relationship between "Population growth – overpopulation – standard of living – migration patterns" (Lgr 62: 264).[110] While this is actually quite revealing for an analysis of (neo-)Malthusianism, a more elaborated account was offered by the textbooks. Consider, for example, the following excerpt from Sellergren (1963):

> In strongly industrialized countries with a high living standard, population growth is low. Sweden belongs to those countries that demonstrate the lowest population growth. In Monsoon-Asia and in Africa, millions of people live on the edge of starvation. The rapid population growth aggravates the situation quickly. If population growth continues at the same pace the global population, now at circa 3 billion, will be doubled before the year 2000. *The earth's natural resources cannot provide food and energy for such a large population. These natural resources are already now utilized too heavily. In many areas, people*

[110] A concern for overpopulation – or at least the possible overpopulation – had been briefly raised before the 1960s. For example, Nelson et al. (1955: 192) maintained that since the earth's population is growing rapidly, there are "strong qualms [farhågor]" that "[the population] should not receive sufficient nutrition…one billion people or 40 % of the earth's population do not receive a sufficient [amount of] food but are starving". Furthermore, the rapid population growth "do not correspond to sufficient areas of cultivable soil, which can be claimed or provide higher yields. The industrialized countries of Europe are partly overpopulated". Näsmark et al. (1956: 80) reasoned whether increased production would cover consumption needs, and added that "In order for the situation to not become untenable, measures must therefore also be taken parallelly for birth control [child reduction]". However, towards the mid 1960s, such ideas were becoming more common. The curriculum of 1969 (Lgr69: 186) merely mentioned "population problems".

> *need to expose nature to overexploitation to ensure survival*. One considers voluntary *birth control as the best cure against overpopulation*…While certain developed industrial countries – including our own – reach higher prosperity and a stronger economy, many people in the world are fighting against starvation. In Asia's communities, there is for instance permanent starvation. *To get food for the rapidly increasing population in the world is a seemingly* [till synes] *insolvable problem*. These weakened and starving people have a difficult situation to achieve a higher standard of living on their own (Sellergren, 1963: 170-171, added emphasis).[111]

In this passage, nature – in terms of natural resources – is articulated and understood as external and finite, thus there are absolute and universal natural limits. Although it might be possible to increase resources by overexploiting nature at the cost of deteriorating the environment – i.e., population puts pressure on nature – there is only a certain amount of natural resources on earth and there will not be enough for everyone. In other words, population growth will outstrip the resources available 'in nature', the earth's carrying capacity will be exceeded which will generate overpopulation and a situation where adequate levels of subsistence cannot be ensured. But, we also see that the problem was isolated to and located in the poorer countries rather than the wealthy Western countries. Since 'we' have a low population growth, we do not exceed any natural limits. 'They', however, breed too rapidly and exceed natural limits. Starvation, therefore, results from a too rapid population growth in relation to the resources available.

Even though birth control was framed vaguely – writing "One considers" makes the sentence general since one may wonder 'who' that 'many' is – birth control was still framed or considered as the "best cure against overpopulation".[112] In such a way, within this excerpt we find many central (neo-) Malthusian ideas: there are natural limits; because of these natural limits population growth will create overpopulation and resource scarcity; levels of subsistence are threatened; and preventive checks are if not fully advocated, then are at least considered (cf. Harvey, 1974; Castree, 2005). The important point here is that it is all naturalized; that is, limits reside 'in nature'; resources are given 'by nature'; and scarcity is a result 'of nature'. Thus, since the amount of natural resources available is given 'by nature', when the population increases above a certain (natural) level, there will be overpopulation and scarcity. The contradiction between resources and population therefore seems 'insolvable'. Nature, then, is something external and understood as a definite 'pool of resources', but external nature is simultaneously a universal outside history. As part of that universal, humans are at least partly determined by nature in the sense that the population must conform to these limits; that is, since nature

[111] A similar passage was reproduced in Sellergren (1970: 56-57).
[112] The chapter also contained a summary by which it was briefly suggested that: "The earth's population growth is worryingly large. A cure against overpopulation is birth-control. Today many people live at the edge of starvation" (Sellergren, 1963: 176).

'determines' the population, population growth must be restricted to the limits residing in nature.

During the 1960s, some of these concerns were amplified in geography textbooks. Nordström et al. (1966) maintained that since developing countries had benefitted from, for example, DDT, medical achievements, and lower rates of mortality

> [There] has been a rapid population growth. The large problem now is to increase food supply and job opportunities in the same pace. Many countries have seen a growth that constitute the reduplication of the population in less than 25 years…*One hopes that population growth in developing countries should be able to be reduced*…Western Europe managed its population crisis during the 1800s by slowly decreasing the mortality rate and [making it possible] that many could emigrate to trans-ocean countries. But the millions living in India and China cannot hope to migrate to richer parts of the world…The help [from rich countries] must predominantly be used to achieve higher efficiency within business so that these countries can manage themselves after a transitional period. *But population growth must also be stopped if a lasting improvement shall be achieved. The propaganda for child reduction must be given all the support* (Nordström et al., 1966: 156-157; emphasis added).

During the late 1800s, the contradiction between population and resources was resolved by appropriating a presumably untouched or unexploited first nature; that is, by either colonizing parts of the world or through imperialist expansion. Yet, during the 1960s, there was no longer possible to discover such a nature, which is to say that we had hit the absolute limits of nature (migration from poorer to richer parts of the world was apparently impossible). In contrast to the vague formulation regarding preventive checks in the previous passage, preventive checks were here not only considered but turned into a matter of urgency. As such, it was evidently clear that 'people' constitutes the main problem. Although an increased efficiency with the help from 'rich countries' was possible, it was only possible if population growth was halted. Preventive checks, then, were necessary, otherwise population growth would outstrip available resources.

Before moving further, we should briefly consider – yet, in some greater detail – how the textbooks addressed child reduction, family planning and birth control, or perhaps the degree to which they advocated such measures. While religious, cultural, social, educational and political difficulties and obstacles were discussed and recognized, it was, for example, maintainted that: "Given today's situation the best solution appears to be to slow down the rapid population growth" (Holdar & Rydefält, 1970: 170); "family planning is a very urgent task", a task which Sweden contributed to (Barrefors et al., 1977: 82); "A voluntary limitation of the number of children, so-called family planning, can lower the birth rates and alleviate the population pressure"

(Forsström et al., 1980: 282[113]); and as part of a bullet list of different solutions, one was "to limit population growth through birth control" (Thorstensson, 1978: 96[114]). Thus, although birth control was not always perhaps as fiercely advocated as in the case of Nordström et al. (1966), it was – with shifting emphasis – understood and perceived as a legitimate solution to combat population growth.

That it was perceived as legitimate is not entirely surprising given that – as Barrefors et al. noted (see also, Forsström et al., 1976: 20-21[115]) – Swedish aid and aid workers, through the state agencies NIB (The Board for International Aid), founded in 1962, and SIDA (Swedish International Development Authority), founded in 1965, was engaged and worked with family planning. In the late 1950s and early 1960s Sweden initiated, for example, two pilot projects in Ceylon and Pakistan, which lasted until the mid 1960s (and continued in other forms more permanently) (Berg et al., 2021). Swedish aid to Ceylon/Sri Lanka was "incorporated in the national family planning programme, which set the goal of reducing 'the crude birth rate' by a third until 1976". In the late 1970s, SIDA opposed Sri Lanka's more coercive strategy of sterilization operations, and in 1983 Sweden ended or withdrew the aid for family planning (Berg et al., 2021: 200).

To move the analysis further, consider the following excerpts by Forsström et al. (1976):

> *The earth's areas for cultivation are limited. Fishing waters are polluted.* [Natural resources such as] coal, oil, ores etc. are depleted [förbrukas]. At the same time the earth's population is increasing at a rapid pace. *To support it, resources must be utilized more heavily* [allt hårdare]. In addition, specifically in the industrialized countries, is the threat to the living environment of polluting the air we breathe, the soil we cultivate and the water we use…Today we know what a human being needs to get adequate and properly composed food [föda].[116] *But we also know that the best agricultural areas' have been used.*

[113] The phrasing was slightly different in Forsström et al. (1976: 20; original emphasis): "Only a voluntary limitation of the number of children, so-called *family planning*, can in the sufficiently short term [kan på tillräckligt kort sikt] lower the birth rates and alleviate the population pressure".

[114] Ten years later, Thorstensson et al. (1988: 397) wrote: "A lot can be done to reduce the population pressure in these areas [Monsoon-Asia]. In the long run, measures for family planning can of course give an effect".

[115] The textbook talked about how "Swedish experts" have worked in Pakistan, India and Sri Lanka, and in relation to a picture, the caption stated: "Family planning. Through SIDA, Sweden has created family planning clinics, for instance, in West Pakistan".

[116] Within the context of starvation and malnutrition, several textbooks addressed the need for a rightly balanced and/or composed diet, for example by stressing the need for calories, energy, nutrients, carbohydrates, fat, vitamins, minerals, and in particular, proteins/albumen (see Nordström et al., 1966: 166; Forsström et al., 1976: 20; Nordström et al., 1975: 229; Barrefors et al., 1977: 100-102; Thorstensson et al., 1978: 84-86). On the one hand, given Borgström's idea of "nutritional redistribution" it makes some sense to discuss the need for a balanced diet within the context of starvation and malnutrition – that is, if people are suffering from starvation and malnutrition in some parts of the world, a part of the problem is the lack of nutrients. On

> *Nor are there any new continents to discover and emigrate to.* Already now a large part of the earth's population is starving. We also know that the earth's natural resources are unevenly [ojämt] distributed and utilized [utnyttjas] very differently (p. 13)…Currently the global population is increasing very rapidly. One has calculated that it now takes 35 years for it to double. Each and every one realizes that the problems must be enormous…[The concern is] to enable such a large population to subsist here on earth, where the circumstances are as such that large parts of the population are starving (Forsström et al., 1976: 16; emphasis added). [117]

> All would be good and well if we could get the earth's population in balance [komma i takt] with the production of food and other goods. *But unfortunately, the population grows much faster. It is therefore important to try to limit population growth in countries where this [growth] is great* [i.e., through education and family planning] (Forsström et al., 1976: 18; emphasis added).

> In too many countries the population increases more rapidly than resources. The progress that is made within agriculture and other businesses are 'eaten up' by the rapid population increase. Therefore in these [developing] countries the living standard increases not at all or only very slowly…At the same time, one knows that the earth's natural resources are limited. In addition, there is the threat of environmental degradation. Therefore, in the long term, the question whether the earth can feed us is present for all countries, not only developing countries…(p. 19) But the most important reason for today's food crisis is the too rapid population growth in relation to the possibilities of providing it with food (Forsström et al., 1976: 20; emphasis added).[118]

Similar to what we have seen so far, Forsström et al. (1976) outlined that there are certain natural limits. Nature is scarce in the sense that we cannot emigrate to new continents, that natural resources are 'limited', and that agricultural areas are either 'limited' or 'have been used', which is to say that we have

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the other hand, the focus on a balanced diet reduces subsistence into purely a dietary and biological question (which is not to say that it is entirely wrong). As such, we are 'part of nature' (Smith, 1990), and humans become biological entities requiring a quantified amount of, for example, energy and nutrients per day.

[117] See also: "The number of people on earth is growing rapidly. One can speak of a population bomb. At the same time the assets (resources) on earth are exploited more heavily…All this means pressure [påfrestningar] on the environment we live in…The increasing leisure time entails a more deteriorated nature and that it is more littered" (Forsström et al., 1976: 102).

[118] Much of this was reproduced in Forsström et al. (1980). For example, there were no longer any empty continents to discover; the best agricultural districts were already cultivated; the population increases more rapidly than resources; progress made within agriculture and business are 'eaten up' by rapid population growth; the living standard increase slowly or not at all in developing countries. What was perhaps emphasized to a greater extent in 1980 was the differences between industrialized countries and developing countries: food had increased faster than the population in industrialized countries, but in developing countries, food production and population growth had increased in about the same pace (see Forsström et al., 1980: 281).

reached the external limits set by nature. Although the amount of resources can be increased within certain constraints, population grows faster than resources and therefore 'eats up' the progress within agriculture. Since population grows faster than resources, it will not only outstrip the resources available, but will inevitably create overpopulation, resource scarcity and starvation as a result. There were simply not enough resources to go around. The 'food crisis', for example, was explained by an apparent overpopulation. Even though it was acknowledged that an uneven distribution of natural resources was present (something which will be discussed more later on), the natural laws put forward by Malthus were clearly articulated, and so was the need to limit population growth.

Yet, the environmental crisis was an integral part of the situation given that pollution, resource depletion and environmental degradation either shaped the amount of resources available in nature or impacted the environment we are dependent on. As such, the environmental crisis added an additional layer since with a deteriorated environment – in combination with a too rapid population growth – 'nature' could not sustain the growing population and provide the necessary levels needed for subsistence.

From the early to the mid 1970s, this neo-Malthusian logic reigned uninterrupted. Nordström et al. (1975) noted that the global population increased on an annual basis by 75 million people so that by the year 2000, there would be 7 billion people on earth and thus little space left for each person – we will need to "stand up". Certainly, this was a different way of saying that the world would be overpopulated and therefore "The current population growth cannot become for any sustained time" (1975: 219). Towards the end of the 1970s, Barrefors et al. (1977) maintained that a rapid population growth had entailed problems. On the one hand, some consider that it might be possible to feed a growing population if resources were better utilized and more equally distributed but on the other hand:

> There are others who think that we have become too many. It is also unthinkable that the entire earth's population ever could achieve our [Swedish] standards of living. The world's food production, raw material- and energy resources are not enough for that. *Unfortunately from an **ecological** standpoint one must admit that the earth is already overpopulated and that a large part of the resources is already depleted* (Barrefors et al., 1977: 75; bold in original, emphasis added).[119]

[119] By asking "What will happen in the future?", and by suggesting that "Most likely there is an upper limit for how many people the earth can feed", Barrefors et al. (1977: 85) also presented two scenarios: first, the population continues to increase in largely the same rate, but "Through war and famines the increase suddenly ceases and is replaced by a sharp decrease", and secondly, "Population growth stops successively to eventually reach an equilibrium". That is, there are as many births as there are deceased. This would entail that there are enough resources for everyone to have "tolerable living conditions".

That there was a contradiction between population and resources becomes even clearer in this passage. While also using a vague language – "There are others who think" – Barrefors et al. (1977) made it evidently clear that there were not enough resources 'in nature' for everyone to achieve Sweden's standards of living; i.e. it is 'naturally' impossible. Even more so, according to 'ecology' – an external objective natural condition – the earth was indeed overpopulated, and resources were indeed running out. In such a way, overpopulation and resource scarcity was understood, evaluated and legitimated from the perspective of ecology.

Thus, population growth had exceeded not only the limits embedded within an external nature but consequently the earth's carrying capacity too. The crucial point here is that conclusions were drawn on the basis of definite external nature. With external nature functioning as a determinant – given and unchangeable – these conditions were the inevitable result of nature. In a similar excerpt, albeit one that mirrors the former passage, Barrefors et al. (1977) discussed the role of the biosphere:

> All life on our earth is concentrated in a thin membrane [hinna] around earth – the biosphere. It is our life space. Here every living species can breathe, find food and reproduce [breed]. But the space for each individual is shrinking because the earth constantly has more and more mouths to feed (Barrefors et al., 1977: 98).

Surely, it is not wrong to maintain that 'life' is dependent on – and that we are internal to – the biosphere, but the problem is that the biosphere is here understood in absolute terms. That is, it is articulated that the biosphere harbours a certain endowment of resources and as the population grows, this endowment will be overtaxed, and eventually, there will not be enough for everyone.[120] Humans, then, were conceived as a species defined by these natural limits – which certainly implies a universal conception of nature – but it also follows that resource scarcity and overpopulation were an inevitable result of human nature. By conceiving resources and the biosphere in such absolute terms, nature (and human nature within it) once again becomes a universal outside history, and as such, static and timeless. This can, of course, be said about other articulations as well. For example, that the world is overpopulated from the perspective of ecology or that natural resources are 'limited' testifies to a rather static nature.

Barrefors et al. (1977) also contended that "There is only one planet" and that "Our planet can be compared to a spaceship" and that "…human passengers have refurnished the spaceship Tellus more than all other species together" (p. 124). However, one million years ago "The first humans had appeared on the stage…we know that they were gatherers and lived in a complete

[120] This comes close to Hardin's Lifeboat Ethics. His ideas will be discussed later on: see section "Critiquing the neo-Malthusian logic".

harmony [samspel] with nature" (p. 124). By building a timeline spanning across a 1 million years, it was demonstrated how more and more humans have occupied the "spaceship Tellus". By 1977, it was suggested that:

> For 75 years, the earth's population has increased by 2350 million. We have become numerous and far from everyone has a satisfying standard of living…We have gained even better control of death…However, we have little control over births. The passengers of Tellus continue to produce children at about the same pace as before…During this century, technological development has provided humanity with such tools that in a short period of time, large changes have emerged in several ecosystems that so far have functioned fairly autonomously [ostört]. With the help of excavators, bulldozers and chemical pesticides, the living space for many species have become strongly limited. Several species have disappeared from earth for good (Barrefors et al., 1977: 126).

On one level, what was demonstrated here is the human impact on nature. There used to be an independent, pristine and external nature, but the technology deployed by an undifferentiated humanity has inflicted large changes on the (external) ecosystem. This passage could have been part of the previous chapter. However, on a different level, the human impact on the environment needs to be understood in relation to the metaphor "spaceship Tellus" and within the context that more and more people have come to occupy "spaceship Tellus" and with more people, the impact on the environment has become greater.

As Sabin (2013: 28) maintains, among prominent neo-Malthusians such as Hardin and Ehrlich, "Spaceship Earth" became a powerful metaphor. Pictures of the earth from space led to new ways of viewing life since it was made crystal clear that "People were alone in the universe, entirely dependent on the limited, shared, and fragile resources of the planet". As such, we cannot afford to deteriorate our environment. The limited and shared natural resources – or more precisely, the limited space – was exactly the concern in Wennberg et al. (1983):

> If every human gets one square metre to stand on, the entire humanity would fit [rymmas] in an area which is barely as large as Vänern [Sweden's largest lake]. But the human must have more space to get food. With current yields about one hectare of field is needed…to feed one human. There are only circa 15 million km2 of cultivated soil in the world – or 1/3 hectare/inhabitant. The conclusion becomes that many must starve, and that is the case (Wennberg et al., 1983: 126).

If humans need an absolute amount of 'nature' – one hectare – in order to ensure subsistence, then there just is not enough to go around given the total volume of cultivated soil. Consequently, the world was overpopulated since the population had exceeded certain natural limits, and, in turn, starvation was

thus a result of nature. Given the way the argument is presented based on the crude 'facts of nature', it is easy to accept the argument. As will be argued later on, however, such an argument should not be accepted since it constitutes only a powerful *partial* and not a full truth, i.e., ideology works as a distortion.

Last but not least, we should consider Thorstensson et al. (1978) and Thorstensson (1988), respectively. The former argued that: "The land and oceans do not provide enough food to eat ourselves full. About 2/3 of the earth's 4 billion people suffer already today from starvation, malnutrition or from a wrong composition of nutrition" [felnäring] (Thorstensson et al., 1978: 84). The latter maintained that:

> A country or an area is overpopulated when the people living there cannot live at a decent standard given the things being produced. Almost 1/4 of the earth's population lives in absolute poverty, that is, the people barely have enough to survive. They live a life in constant misery [nöd], malnutrition and ignorance. If we consider how large parts of humanity are forced to live, the conclusion must be that the earth has a too large population (Thorstensson, 1988: 396).

Accordingly, nature did not provide enough resources and the world was overpopulated since a country's or area's carrying capacity (natural limits) had been exceeded; there were not enough resources.

In sum, there seemed to be a contradiction between resources and population since the population – by breeding to rapidly (universal nature), which, in turn, suggests that it is in our nature (human nature) to breed to rapidly – inevitably outstrips the resources available. This contradiction was underpinned and powered by the articulation of central ideas such as overpopulation, natural limits, resource scarcity, and subsistence (or more accurately, the idea of overpopulation entails and necessitates a particular understanding of the others). With a finite external nature at work – by which natural limits seemed to be understood as absolute – there was also a particular form of determinism at work (cf. Harvey, 1974; Pepper, 1989; Abrahamsson et al., 1992). Nature determined the endowment resources available, and therefore, the mass of the population and the rate of population growth, respectively, could not exceed this nature. In other words, external nature functions as an intractable barrier we must submit to or become subject to. As Abrahamsson et al. (1992: 252) contends, nature sets "determinate [definite] and unchangeable limits for the population and resource exploitation", and as such, there is a certain "carrying capacity" and little or no "ductility". Apparently, however, population exceeded this natural endowment, which is why preventive checks were crucial. The important point to address here, then, is how ideology works as distortion given how "[external and universal] nature…becomes the transhistorical and universalized explanation of poverty and suffering" (Fitzsimmons & Goodman, 1998: 203). In other words, because the population breed to rapidly and because there were not enough resources 'in nature' or provided 'by nature',

starvation and poverty seemed inevitable. By 'naturalizing' resources in this sense, the production of nature seemed to be static rather than dynamic. But it also either implicitly or explicitly generated apocalyptic prophecies about how "the limits of the earth's carrying capacity…predict[ed] demographic disaster" (Robbins, 2004: 181; cf. Katz, 1994). Fortunately, however, even the neo-Malthusian logic acknowledged its own limits. In other words, there were ways out of this.

Was the contradiction absolute?

So far, I have payed attention to the core logic of neo-Malthusianism as it appeared in geography textbooks by demonstrating how specific ideas were articulated and therefore shaped the way in which the relationship between population and resources was understood. The following two sections, however, seek to demonstrate that the contradiction was not entirely unequivocal. First, it was, for example, made clear that overpopulation is not about a specific population figure or population density. Rather, overpopulation entails that the population exceeds "the resources the country currently has" (Forsström et al., 1980: 278). Or as Nordström et al. (1966: 152) phrased it: "It depends on what claims one has [vilka anspråk man har]…and how one utilizes its opportunities [hur man utnyttjar sina möjligheter]". Thus, as it was about *how* one utilizes, and the resources a particular country *currently* has, the endowment of resources might be increased. We will return to this in a moment. Secondly, and more importantly, most textbooks acknowledged, to a lesser or greater extent, that inequalities – or the unequal distribution of and access to resources – were a central part of the problem. Here I will illustrate this through a few textbook passages. For example, Nordström et al. (1975) proposed that:

> [The production of food has] increased by roughly 31 % since the beginning of the 1960s. Simultaneously the population has increased by 20 %. Divided per person this entails that production has increased by roughly 1 % each year. *But the distribution is not equal. There are large inequalities both between countries and within countries. These inequalities concerning the access to food have become larger in recent years.* Currently the production of food has decreased. Many developing countries have been affected by bad harvests and famine…In developing countries the population increases faster than the access to food…The result becomes overpopulation which entails poor living standards (Nordström et al., 1975: 229; emphasis added).

Although the Malthusian idea that the population increases faster than the access to food is articulated – with overpopulation as a result – the unequal distribution of resources and (rising) inequalities within and between countries

was recognized as part of the problem. In a similar fashion, Barrefors et al. (1977) put emphasis on global inequalities:

> The industrialized countries have in different ways used the industrial lead to increase the living standard of their own population. But rising levels of affluence also demand [that] one utilizes more of the earth's resources. The largest part of energy, raw material and food etc ends up in the rich countries…A more equal distribution of the earth's resources can also come to entail that the rich countries have to decrease their demand concerning the resources that stand available (Barrefors et al., 1977: 88).

> [Since there are more and more people] we constantly deplete more of our natural resources. The high living standard in the rich world demands an even larger part of the raw materials and the energy. *To quickly find a solution which leads to a more equal distribution of the earth's resources appears as the most pressing task humanity currently faces*. It is necessary that the world's countries together plan for how to use the earth's resources so that natural resources are not plundered but also can be utilized for coming generations (Barrefors et al., 1977: 99; emphasis added).

Again, neo-Malthusian ideas were at work, such as the relationship between "rising levels of affluence" and the utilization of resources, or that more and more 'people' leads to resource depletion (Sabin, 2013). But Barrefors et al. (1977) also contended that resources are distributed unequally, and consequently, that an *equal* distribution is the "most pressing task". Thorstensson et al. (1978: 83) even wrote that "Others suggest that the population explosion can only be reversed by a new economic world order which equalizes economic injustices in the world". Although perhaps not fully advocating a "new economic order" since it was someone else who 'suggests', "economic injustices" were at least taken into account and articulated.

Acknowledging inequality and the need for equality was thus a key – and indeed crucial – ingredient in textbooks, and with this, the contradiction between resources and population did not seem quite so absolute. Moreover, inequalities stemming from the ownership of land mattered too. Since the main part of the labour force in developing countries works within agriculture and since the land is used by renters [arrendatorer], these renters have to pay a high percentage of the yield to the landowner. Therefore "If one achieves larger harvests and better yields, then it is the landowners that profit the most" (Nordström et al., 1966: 230). Accordingly, renters may find it difficult to ensure their own subsistence. Additionally, Thorstensson (et al., 1978: 89), while recognizing similar problems, contended that the ownership of land often entails that renters have to live in serfdom. Hence the need for land reforms. About land reforms, Barrefors et al. (1977: 107) went on to argue not only that "The land must be distributed among those who cultivate it", but significantly that "In most countries with a shortage of food it is not the natural resources

that sets limits, but it is the unequal distribution of land and the unfavourable economic and social developments that are the largest obstacles". Accordingly, as natural resources do not set limits, it is not about nature as such. Rather, resources are integral to social and economic developments, and if these developments would have different, there would have been enough resources to go around.

That the contradiction was not absolute was further made clear in the following way by Barrefors et al. (1977). While some countries (USA, Canada, Australia, France) had a surplus of food, the land in poorer countries was used to export food and resources (cash crops such as coffee, tea, cotton, cacao, rubber) to supply the

> …rich world's demand for stimulants [njutningsmedel] and raw materials instead of covering their own needs of food [basfödoämnen] (p. 102)…These conditions are essentially unacceptable and one of the reasons why these [conditions] have arisen is the market economy governing world trade. Those owning land and capital and have access to labour power produce things which generate the largest profits and sell to the one that can afford to pay. Despite a surplus of food on the world market, people starving have not had money to buy the [surplus] that has existed. However, in the rich countries one can live as well as always even during bad years of harvest. One needs to accept a different economic world order in order to deal with current abuses [missförhållanden] (Barrefors et al., 1977: 104).

In other words, Barrefors et al. (1977) did not merely point to inequalities but also to the social and economic dynamics of resource inequality; that is, resources cannot be understood in isolation from how they are produced and to what ends. It is worthwhile to notice that, as I recently demonstrated, Barrefors et al. (1977) argued that the earth was overpopulated from the standpoint of 'ecology' and that resources were depleted. By contrast, then, the same textbook contended that resources must be conceived in relation to – and mediated by – the unequal distribution of land, social and economic developments, exploitation, the market economy, the ownership of capital and land, the capital-labour relation, capital's profit motive and resources that are (bought and sold as) commodities.

As such, the dynamics and features of capitalism were granted importance and by conceptualizing resources through such a lens, it became difficult to claim that there was resource scarcity and overpopulation per se. This might appear incongruous; on the one hand, the population had exceeded certain natural limits, and on the other hand, natural resources do not set limits and we need to take the workings of capitalism into account. While it may appear so, this is not necessarily a contradiction; i.e., resources are rooted in (therefore relative to) the social and economic structure of society *and* in nature. However, even though such a critical stance was developed, and without denying the unequivocal importance of addressing inequalities and distribution, the

concern here, if you like, revolves around distributing external and finite natural resources more equally. Thus, in the next section we will examine more precisely how the notion of (external) natural limits was challenged.

Yet, while inequalities were viewed as a central problem[121], Thorstensson et al. (1978: 93) still argued that:

> Even if one could distribute the available food in an equal way among the earth's population, it would not solve all problems concerning provision [försörjningsproblem]. *Such a distribution would namely mean that everyone received too little to eat. Today the earth cannot feed us* (Thorstensson et al., 1978: 93; emphasis added).

The conclusion drawn here reflects and nourishes ideas of overpopulation, resource scarcity and an external nature with certain limits; thus, despite a more equal distribution of resources, there will not be enough food to go around. There might, however, be more resources considering that the earth cannot feed us 'today'. Yet, we can also notice that ten years later on, the beliefs had changed: "If the will to distribute fairly becomes so strong that we pass from words to action, we shall find that the earth's resources are more than well enough for everyone" (Thorstensson, 1988: 397).[122] There was, then, enough food to go around; the problem, however, was the unequal distribution and the fact that industrialized countries consume too much of the earth's resources.

What I briefly attempted to illustrate in this section is that textbooks argued and articulated that inequalities constituted a crucial problem. This is important since it to a certain extent 'denaturalizes' the relationship between population and resources; consequently, there are – or might be – enough resources for everyone if they were equally distributed. Therefore, overpopulation and resource scarcity were not as given as they appeared. But, there is also a need to understand the roots of, or how, inequality arises – which Barrefors et al. (1977) to a certain extent did – and why a capitalist mode of production depends on and generates inequality. As Katz (1994) argues, even neo-Malthusian scholars "acknowledge that inequalities in social and economic distribution are key to environmental resource problems", while the

[121] Forsström et al. (1980: 283), for example, illustrated the unequal relation between industrialized countries and developing countries through pictures. One picture - which represented a dog surrounded with food – was an advertisement for "dog burgers". The other picture represented a starving man from India. The caption stated: "At the same time as large parts of the earth's population does not even have food for the day, in industrialized countries one is advertising about nutritious and good food for dogs", i.e., "dog-burgers".

[122] When discussing problems in the industrialized countries Thorstensson et al. (1988: 402) also interestingly wrote that the "prime problems are the waste of the earth's exhaustive resources and the disturbance of nature, something which disturbs the fragile interplay in the living world [i det levandes värld]. About the "Third World", "In some areas, the population increased faster than the access to food and other necessities…While the people in the Third World have too little to eat, the people in the industrialized countries consume 30 percent more nutrition than they need".

"the *social sources* of resource inequality" (Katz, 1994: 276; emphasis added) often are either obscured or underplayed. Put differently, a more equal distribution remains limited insofar as the roots of resource inequality are not fully grasped, or, unless such "social sources" are fully accounted for, the strategy of a more equal distribution cannot entirely solve the particular problem it sought to solve. The dynamics and features of capitalism (capital-labour, resources as commodities) and inequalities stemming from the ownership of land (landowners-renters) are about such "social sources". However, the discussion of "unemployment" by Barrefors et al. (1977) and Thorstensson (1988) provides an even better understanding of these "social sources".

Historically, Barrefors et al. (1977: 90) argues, people in poorer countries have managed to "regulate their division of labour and employment". Yet, the industrialized countries' technology and industrial development "have put developing countries in front of serious employment problems". Many people move to the cities as they "cannot get work or provision [försörjning] in agriculture", but, given rapid urbanization, "unemployment is increasing day by day" in the cities. Similarly, Thorstensson (1988: 397) argued for the need to create new jobs in rural areas, otherwise there is a risk that "continued population growth in rural areas leads to even greater unemployment and increased urbanization". Due to increased urbanization, there are not – "In the crowded [myllrande] megacities" – enough housing or jobs. As a result, slum areas were emerging which are "filled by unemployed people". Crucially, what follows from their discussion of unemployment, or even what they were emphasizing here, are the conditions and processes which create what Marx defined as a "relative surplus population". There is an important distinction to be made between "overpopulation", on the one hand, and a "relative surplus population", on the other hand.

These "social sources", and thus the distinction between overpopulation and a relative surplus population, will be further discussed in a moment by providing a critique of the neo-Malthusian logic that drives the textbook analysis. However, before that, we will survey how the endowment of resources could be increased. This, in turn, problematizes more seriously the notion of (external) natural limits.

The way forward – producing more resources?

Thorstensson et al. (1978), for example, argued that "A world-wide program with a set of measures must quickly be implemented in order to save humanity from starvation and semi-starvation [halvsvält]". As already indicated, preventive checks (child reduction) were perceived as a solution to the contradiction between resources and population and there were often fiercely advocated by neo-Malthusians (Sabin, 2013). Yet, in the textbooks it was one among several solutions. Besides such a solution, the textbooks suggested an entire

battery of solutions which included the need to increase the yields through fertilizers, pesticides, irrigation, better (and resilient) seeds, new crops (e.g., hybrid corn, soya beans) – i.e., plant breeding – new tools/machinery, cultivating new areas, creating new kinds of food, measures against soil degradation (erosion), and preventing waste through better storage facilities (to counteract mould and pests). To this we might add the need for rich countries to contribute, for example, capital and education. We will here focus on a few of these solutions.

Regarding land reclamation, Thorstensson et al. (1978: 94) maintained: "If one could with the help of technology and at high costs cultivate all conceivable land, agricultural areas could possibly increase by circa 30 % of the earth's surface". By such measures, deserts could become "verdant crop fields" through the extensive use of irrigation, lochs might become agricultural areas by draining [torrläggning] and formerly used agricultural areas might be reopened. Echoing and extending such a proposal, Forsström et al. (1980) was argued that:

> There are still areas on earth which can be used for agriculture. The reserve areas are mainly certain steppe- and savanna areas in Africa, North- and South America. But utilizing them would require extensive and expensive measures, for example, irrigation. Therefore, one usually considers that more can be gained by raising the yield in areas already cultivated. If one could increase the yield all over Asia to the same level as has been successfully done in Japan, this would entail something of a revolution in the means of existence [försörjningsläget] in many countries. For example, India's harvest could then be tripled. But this also requires extensive and costly measures in the form of better education, tools, irrigation, seeds, commercial fertilizers, storing the harvest and distribution (Forsström et al., 1980: 283).

A more intensive and 'productive' production of nature, then, was understood as the way forward, but that required changing 'how' nature is produced; that is, better seeds, fertilizers and so forth were needed. But, increasing agricultural productivity through such measures – or through the green revolution's genetically modified crops (Thorstensson et al., 1978)[123] – were only part of the solution, also on the agenda was the effort to produce "new kinds of food" [födoämnen] such as proteins derived from oilseeds and algae and other forms of artificial food "produced out of…coal and oil through bio-technical processes" (Thorstensson et al., 1978: 96-97).

In a similar fashion, Forsström et al. (1980) contended that "It is possible to produce adequate protein from fish in laboratories…Scientists have also

[123] Yet, Thorstensson et al. (1978: 97; see also, Forsström et al., 1980: 283-284) were not entirely positive about the green revolution. First, there might a lack of water and fertilizers which impedes progress; secondly it is unclear how the new crops handle parasites and insects; and thirdly, it might increase the inequalities between landlords and farmers, which is to say that an increased food production might not get rid of social inequality.

successfully produced protein from petroleum. But to make these products into acceptable commodities for consumption in developing countries…is an even more difficult task" (Forsström et al., 1980: 284). In other words, with scientific labour at the centre, the production of a new first nature out of, and from within, a second nature was necessary in order to not only enable a more 'productive' production of nature, but for producing new kinds of food.

Neo-Malthusian solutions, Katz (1994) argues, often centred on "limiting population and technology". For someone like Paul Ehrlich, however, technology and an equal distribution was not satisfactory. Developing the earth's carrying capacity by cultivating the sea and tropics, irrigating deserts or using nuclear power did not deal with the main problem: population growth (Sabin, 2013: 30). For Ehrlich, "increasing food production" or a "more equitable distribution" constituted merely a "stay of execution" (Ehrlich, 1978 [1968]: xi. The only way forward was effective population control; or in Ehrlich's (1978 [1968]: xii) words, "We can no longer afford merely to treat the symptoms of the cancer of population growth; the cancer itself must be cut out".

Certainly, geography textbooks did not go that far, and they did not only focus on limiting population and technology. To me, it seems like textbooks articulated and oscillated between three different positions. First, a pessimistic position that considered birth control, family planning and child reduction to avoid overpopulation, resource scarcity and ultimately potential catastrophe. Secondly, the need for a more equal distribution, which included a critique of the commodification of resources, the profit motive and the ownership of land and capital. And thirdly, a form of Cornucopian optimism which emphasized, for example, the possibility of technological innovation and of exploiting new resources (i.e., land reclamation, fertilizers, new crops and seeds or laboratory produced food and protein) (Castree, 2000a; 2000b). Concerning the latter, such measures are by all means important since they renegotiate – or perhaps even circumvent – the notion of external natural limits; that is, the production of nature seems dynamic rather than static. Natural limits, then, are not viewed as absolute but relative, i.e., dependent on changing technologies. However, we still need to consider in some greater detail "the social sources of resource inequality" (Katz, 1994: 276).

Critiquing the neo-Malthusian logic

The relationship between resources and population was dealt with in complex, multifaceted and critical ways in geography textbooks. And yet their analyses were still limited since the they remained rooted in the overpopulation argument rather than the relative surplus population argument. This section extends and builds on the "social sources" we have been referring to, and argues that insofar as a clear understanding of these social sources are provided, the particular ideas (of nature) that are articulated within the neo-Malthusian logic

of the textbooks – natural limits, overpopulation, resources, scarcity and subsistence – functions as a powerful distortion.

Harvey (1974) was one of the first to tackle the question of social nature. According to Loftus (2013), Harvey launched a powerful critique against framing the population-resources relationship within the Malthusian (methodological) perspective, in which he sought to elucidate that the "claim to be ideology-free is of necessity an ideological claim" (1974: 256). By working from a Marxist methodology, Harvey provided a radical reinterpretation of the resources-population relationship (Loftus, 2013: 186). Yet, before moving further, it is important to consider why (neo-)Malthusianism was appealing.

Castree (2005) rightly acknowledges that neo-Malthusianism did make some sense; that is, the world as it appeared in the 1960s and 1970s in some respects 'verified' the arguments neo-Malthusians were making. There were, Castree (2005) argues, both "logical truths" and "empirical truths". Regarding the former, if resources are finite or only grow arithmetically and population growth progresses geometrically, overpopulation will by all logical standards be the result. Regarding the latter, there were in fact escalating birth rates, malnutrition, starvation, and famine in many developing countries. "If the latter seem to correspond to former" – as it did to many in the early 1970s – Castree (2005: 114) writes then "it's no surprise that neo-Malthusianism appears to be a plausible explanation of the population-resources relationship". However, although neo-Malthusianism seemed to make sense, the impetus behind the rising tide of neo-Malthusianism was not because of its objectivity – it was not 'ideology-free' – but rather "because it served the interests of Western elites to *claim that it was objectively true*" (Castree, 2005: 114; original emphasis). For Castree, Harvey's critique was not directed either against a flawed logic (though in some ways it was flawed) or empirics that were erroneous. What was at stake was the powerful ideas (or beliefs) of nature sustaining the neo-Malthusian claim, ideas which made this claim appear neutral, objective, universal and, in turn, true.

It is precisely when the idea of natural limits seizes hold of resources, scarcity, and subsistence that the neo-Malthusian argument becomes particularly forceful. These limits, in turn, 'cause' overpopulation. For Harvey (1974), subsistence levels are 'relative' to historical and cultural contexts, and natural resources are socially, economically and culturally specific; that is, a resource is not the same over time and space but is dependent on the social relationships (and mode of production) through which it unfolds. To illustrate this, Harvey (1974: 272) problematized the three concepts subsistence, resources and scarcity.

While Malthus understood subsistence as 'absolute', Marx saw it as 'relative'. Needs, according to Marx, "are not purely biological; they are also socially and culturally determined". That is to say, subsistence cannot be understood independently of the historical and cultural context since needs are produced rather than determined by some Malthusian law of population.

"Subsistence", Harvey writes, "is defined internally to a mode of production and changes over time". About resources, Harvey maintains that they can only be defined "with respect to a particular technical, cultural, and historical stage of development" (Harvey, 1974: 272). While resources are natural materials which could be transformed into things useful for people, society must have the *means* to utilize resources (Castree, 2005). Therefore:

> …'resources' can be defined only in relationship to the mode of production which seeks to make use of them and which simultaneously 'produces' them through both the physical and mental activity of the users. There is, therefore, no such thing as a resource in abstract or a resource which exists as a 'thing in itself' (Harvey, 1974: 265).

In other words, resources are not given by nature. Scarcity, in turn, is socially and culturally determined from the very start. "Scarcity presupposes certain social ends", Harvey writes, "and it is these that define scarcity just as much as the lack of natural means to accomplish these ends". As such, scarcity is produced by "human activity" and "managed by social organization" (Harvey, 1974: 272).

By reworking these categories, Harvey (1974; see also Castree, 1995, 2000a, 2000b, 2005) rejected the commonsensical idea that "Over-population arises because of the scarcity of resources available for meeting the subsistence needs of the mass of the population" to instead propose:

> There are too many people in the world because the particular ends we have in view (together with the form of social organization we have) and the materials available in nature, that we have the will and the way to use, are not sufficient to provide us with those things to which we are accustomed (Harvey, 1974: 272).

Although we will return the idea of overpopulation momentarily, by starting from such an understanding of the resource-population problematic, Castree (2000b: 278-279; original emphasis) claims that "Harvey sought to draw attention away from the 'limits' supposedly dictated by an intransigent, external nature to suggest, instead, that ecological limits were *relative* to the specific socioeconomic systems in place at any one time and place". Thus, as Castree (2000b) maintains, scarcity cannot be understood as absolute or given.[124] The production of nature thesis offers a similar critique, but from a different vantage point.

The production of nature thesis does not view nature as a thing-in-itself, which entails that, although recognizing 'the matter of nature' and Benton's notion of natural limits as historically contingent (see chapter four), the thesis

[124] That scarcity is not the product of 'nature' was powerfully illustrated in the non-fictional book "The Famine" by the popular historian Västerbro (2018).

does not accept the (neo-)Malthusian idea of limits. By focusing on the social relationship with nature, the production of nature (resources, food) is historically specific and dependent on particular relations of production and technologies, which is to say that 'limits' can be overcome when (or if) technology and relations of production are changed (Eaton, 2011). If the production of a first nature is "guided by the needs, the logic, the quirks of the second nature" (Smith, 1990: 56), then we cannot accept overpopulation or a resource scarcity as somehow a result of nature.

As Braun (2009: 25) makes clear, the production of nature thesis sees limits as problematic because society and nature are understood as an internal relation. Therefore, external nature cannot function "as a source of authority" or as an unalterable force "humans must submit" to; rather, human labour actively transforms nature. Harvey (1996) made an important argument that has bearing on the production of nature thesis:

> What exists 'in nature' is in a constant state of transformation. To declare a state of ecoscarcity is in effect to say that we have not the will, wit, or capacity to change our state of knowledge, our social goals, cultural modes, and technological mixes, or our form of economy, and that we are powerless to modify either our material practices or 'nature' according to human requirements. To say that scarcity resides in nature and that natural limits exists is to ignore how scarcity is socially produced and how 'limits' are a social relation within nature (including human society) rather than some externally imposed necessity (Harvey, 1996: 147).

As Fitzsimmons & Goodman (1998: 203) argue, "Harvey's sense of ecological nature returns us to a sense of possibilism, rather than determinism". Since the key question always is *how* nature is produced and to what ends (Smith, 1990, 1996), we can always change the way nature is produced, the forces and logic that drive and shape the production of nature, and the specific ends we have in view. The textbooks importantly recognized much of this. But as mentioned, although there was an understanding of the "social sources of resource inequality" too, there is a need to unpack these "social sources" more closely.

At the centre of Harvey's (1974) argument is a critique against the idea of 'overpopulation'. By turning to Marx's concept of "relative surplus population", Harvey reworked the apparent contradiction between resources and population. Let's first consider the terms overpopulation and surplus population, respectively. Overpopulation entails that – as Harvey pointed to – there are too many people in relation to the resources produced and available at a particular time and place. The population has exceeded certain natural limits or the land's carrying capacity, there are not enough resources, scarcity has arisen, and subsistence cannot be guaranteed. Starvation, for example, is understood as "produced by 'natural shortages' i.e. an *absolute* inability of the earth to produce more food" (Pepper, 1989: 167). Surplus population, however, suggests that there are a certain number of people unnecessary or

superfluous to the requirements of the mode of production. Thus, the so-called 'laws of population' must be understood in the contemporary world as internally related to the dynamics of capitalism; that is, capitalism creates a surplus population (an industrial reserve army).

A surplus population can be created in several ways. Here we should remember Barrefors et al. and Thorstensson's discussion of unemployment (as well as the former's discussion of the dynamics of capitalism) Under capitalism, people are divorced from their means of production. What Marx called "primitive accumulation" – basically capitalists robbing people of their land – entailed on the one hand "the forced separation of workers from their means of production" (Mels, 2014: 1113) so that they could no longer produce their means of subsistence, and thus on the other hand, the formation of a pool of 'free workers' (an industrial proletariat). But people are also divorced from the means of production and the products of their labour in the production process. The capitalist class owns the means of production and buys labour power as a commodity. Since people are divorced from their means of production, the only way for people to survive is to sell their labour power and in turn receive a wage. To ensure subsistence, people are dependent on the commodities they produce, but these commodities can only be purchased with money, which is accessed through wages. Under capitalism, parts of the working class and the unemployed "are denied the monetary wealth to purchase the means of subsistence" (Castree, 2005: 115). Thus, if the capitalist don't need to buy your labour power, you cannot purchase the commodities necessary for subsistence; that is, you cannot "buy food simply as a result of the inability (or unwillingness) of an economic system to create enough jobs or to pay enough to those who work" (Pepper, 1989: 167).

To develop the argument of a surplus population, Harvey (1974, 1996, 2018) demonstrated "that *what appear to be naturally caused problems…are, in fact, socially caused problems*" (Castree, 2005: 119; original emphasis). Harvey (2018) maintains that "Capitalism produces poverty by creating a relative surplus of laborers through the use of technologies that throw laborers out of work. A permanent pool of unemployed laborers is socially necessary for accumulation to continue to expand". Technology is not by "itself…the main lever of accumulation", rather it is "the pool of surplus laborers to which it gives rise" (Harvey, 2018: 276). Technological change, and thus "the increasing social productivity of labor" works as a lever as it "permits an expansion of surplus value through a growing substitution of capital for labor in the production process" (Harvey, 1974: 268). Contrary to Malthus who saw the "law of population" as natural and universal, Marx argued that technology and machinery replaces labour, and this shapes a "law of population" which is specific to capitalism. With technological change, people are thrown out of work because they are not necessary to capital anymore; or more accurately, "the reserve army is drawn into production and then thrown out in alternating bursts, creating a cyclical motion in the labor market" (Harvey, 2018: 276).

While a relative surplus population is necessary for accumulation, it also functional in the sense that it "prevents wages rising and thereby cutting into profits" (Harvey, 1974: 269).

In sum, through the concept of a 'relative surplus population', Harvey (1996: 145) contends that Marx was able to provide an "explanation of the production of impoverishment, of unemployment, of misery and disease among the lower classes as a necessary outcome of how…capitalism works, no matter what the rate of population growth" (Harvey, 1996: 145). Therefore, in a capitalist society, despite a more 'productive' production of nature (e.g., higher yields) or new kinds of food, there will still be misery, poverty, starvation and scarcity for 'someone' since poverty and so forth is "an endemic condition internal to the capitalist mode of production" (Harvey, 1974: 269). In other words, it is within the workings of capitalism that the "social sources" must be located. By conceptualizing the relationship between resources and population from such a perspective, neo-Malthusian ideas such as overpopulation, resource scarcity and natural limits make little sense. While such ideas often appear to be 'true' because they are based on the 'facts' of nature, it is precisely because these ideas both conceal and are severed from the dynamics of a capitalism that they become ideological.

According to Castree (2005: 116), Harvey understood ideology as "a set of ideas that appear to be true but which in fact conceal the truth in order to further a certain groups' interests" and thus neo-Malthusianism worked as an ideology since it "concealed the truth about the relationship between resources and population" (2005: 115). According to Loftus (2013: 186), ideology for Harvey meant a distorted position of specific classes within the economic conditions of production. To me, Harvey did not expose the *truth* in the simple sense of the word. Rather by reconceptualizing certain ideas through a Marxist lens and by grounding the population-resources relation within the dynamics of capitalism, he demonstrated the distortedness of neo-Malthusian ideas. This commonsensical distortedness of neo-Malthusian ideas which Harvey draws attention to are – as we have seen – common in the textbooks since they articulate notions of natural limits and overpopulation rather than address the resources-population relation within the dynamics of capitalism (surplus population).

The politics of neo-Malthusianism

As I mentioned in the beginning of the chapter, we should also consider the politics of neo-Malthusianism. The politics are important because, first, as Castree (2005: 112) puts it, neo-Malthusian scholars "predicted a dire future where a finite natural-resource base would limit the numbers of people who can live on the planet", and secondly, it draws attention to how the idea of overpopulation is useful to capitalism and the political order that supports it.

These politics are not explicitly articulated or well-displayed in the textbooks, and by extension, they did not support or advocate such politics; rather the politics must be derived from the logic of their presentation. Harvey (1974) made an important remark in which he argued that:

> The trouble with focusing exclusively on the control of population numbers is that it has certain political implications. Ideas about environment, population and resources are not neutral. They are political in origin and have political effects…Once connotations of absolute limits come to surround the concepts of resource, scarcity, and subsistence, then an absolute limit is set for population. And what are the political implications…of saying there is 'overpopulation' or a 'scarcity of resources'? The meaning can all too quickly be established. Somebody, somewhere, is redundant, and there is not enough to go around. Am *I* redundant? Of course not. Are *you* redundant? Of course not. So who is redundant? Of course, it must be *them*. And if there is not enough to go around, then it is only right and proper that *they*, who contribute so little to society, ought to bear the brunt of the burden (Harvey, 1974: 272: original emphasis).

Although geography textbooks did not explicitly say anything about whether anyone was redundant, the point is that such a politics follows or flows from the argument. As Harvey says, if ideas of overpopulation and resource scarcity are viewed as common sense at the same time as the capitalist mode of production remains dominant, "then the inevitable results are policies directed toward class or ethnic repression at home and policies of imperialism and neo-imperialism abroad". In a similar fashion, "If…an elite group requires an argument to support policies of repression, then the overpopulation argument is most beautifully tailored to fit this purpose" While a whole range of policies can thus be justified by using the idea of overpopulation, more importantly perhaps, "If a poverty class [i.e., a relative surplus population] is necessary to the processes of capitalist accumulation…then what better way to explain it away than to appeal to a universal and supposedly 'natural' law of population?" (Harvey, 1974: 274; see also, Harvey, 1996: 149). In other words, considering how the idea of overpopulation is useful to, and articulated with a capitalist society, it obscures the way in which capitalism, through primitive accumulation and rising productivity (technology), produces and is dependent on a pool of workers. This relatively superfluous class, and their living conditions, appears to be an inevitable result of external and universal nature.

With Harvey's remark in mind, let us therefore consider not only the extremely problematic politics, but the ideas of nature implicated in Hardin's (1974) essay *Lifeboat Ethics: the Case Against Helping the Poor* (notice the title 'against'). Hardin began from a Malthusian logic and compared rich nations with lifeboats. Outside swimming in the ocean, we find the poor people. Should the rich countries save the poor people? In Hardin's (1974) words, "we must first recognize the limited capacity of any lifeboat…a nation's land has a limited capacity to support a population…in some ways we have already

exceeded the carrying capacity of our land". In other words, there was absolute natural limits and a finite amount of resources.

Each boat has 50 passengers, but room for 10 more. There are, however, 100 poor people swimming in the ocean. If they are granted permission to board the lifeboat, the carrying capacity would be exceeded, and thus, "The boat swamps, everyone drowns. Complete justice, complete catastrophe" (Hardin, 1974). Yet it would be possible to admit 10 people, but how should those 10 people be selected? What about the other 90? Even if only 10 people are admitted on board, the "safety factor" is lost. Therefore Hardin's conclusion was to admit no one to the lifeboat because it saves at least 'someone' (i.e. the rich 50 people):

> While this last solution clearly offers the only means of our survival, it is morally abhorrent to many people. Some say they feel guilty about their good luck. My reply is simply: 'Get out and yield your place to others.'. This may solve the problem of the guilt-ridden person's conscience, but it does not change the ethics of the lifeboat. The needy person to whom the guilt-ridden person yields his place will not himself feel guilty about his good luck. If he did, he would not climb onboard. The net result of conscience-stricken people giving up their unjustly held seats is the elimination of that sort of conscience from the lifeboat (Hardin, 1974).

For Hardin, the metaphor of a lifeboat was not only a metaphor, but a struggle between life and death; hence, morality or conscience had no place in this Darwinian 'struggle for existence'. To make sure that the 'rich' survived, the only way forward was to get rid of the 'poor' and 'guilt-ridden' people, otherwise 'they' would bring ruin to us all.

According to Pepper (1989), Hardin argued that the West should only provide aid to those Third-World countries which are making progress (controlling their population), while abandoning those countries that "are 'hopelessly' overpopulated". Consequently, sending aid to India, Egypt and Haiti was perceived as "throw[ing] sand in the ocean" (Pepper, 1989: 209). Ehrlich, the author of the *Population Bomb* similarly argued that aid should be stopped. As Pepper (1989: 210) writes, "Ehrlich, a biologist making social judgements…concludes that 'too many people' are at the root of social and environmental problems, and for him people become a 'pollutant'…The denigration of people in this way…is…[an] element in ecofascism".

For Hardin and Ehrlich, needless to say, the politics flows from, and is derived from particular ideas of nature. Hardin clearly emphasized the definite carrying capacity of the land. So did Ehrlich, but in addition, he also made parallels between humans and animals. For Ehrlich, humans were understood as any other species and his concern about overpopulation "reflected his conclusions about the dynamics of butterflies. Butterflies existed in tenuous balance with available resources and external threats from predators and disease". Hence there was no equilibrium in nature shaping butterfly populations;

instead, "booming and crashing population cycles characterized all animal species. Populations that grew beyond a certain *threshold* were brought down by resource shortages, diseases, and other population-dependent factors" (Sabin, 2013: 26; emphasis added).

In such a way, the human species was subjected and reducible to same laws of nature which governed the life of butterflies. In his essay *Eco-Catastrophe* (1969; cited in Sabin, 2013: 26-27), Ehrlich maintained that "The shape of the population-growth curve is one familiar to the biologist…A population grows rapidly in the presence of abundant resources, finally runs out of food or some other necessity, and crashes to a low level or extinction" (Sabin, 2013: 27). With the workings of the external and universal conception of nature, this constitutes an ideology, an ideology because the argument of a relative surplus population (and the production of nature thesis) certainly proves otherwise.

The point here is that a crude and ugly politics can be derived from a particular understanding of nature. While textbooks did not explicitly advocate or articulate such a politics, we should always be careful and critical when neo-Malthusian ideas arises because they (might) have such implications. Furthermore, by recognizing inequalities together with a turn to a more equal redistribution of resources (including the critique of the commodification of resources, the ownership of land, the profit motive and unemployment) and a more 'productive' production of nature within these textbooks – which is to say that textbooks did not only focus on "the control of population" or "natural limits" – such political implications are certainly ameliorated. Yet, as they remain rooted in the overpopulation argument rather than the surplus population argument they cannot at the same time entirely escape these implications.

Did the spectre of Malthus come to an end?

To work towards a conclusion, I wish to briefly consider a period that so far has been omitted; the period in the early 1990s. This has been a conscious choice.

In the early 1990s, Sellergren & Östman (1991: 332) reasoned that overpopulation might entail that there are not enough resources to secure subsistence, i.e., that the population has exceeded certain limits, or that there is an unequal distribution of resources. Bangladesh – which might be considered overpopulated given the circumstances – in fact has enough arable land to provide far beyond levels of subsistence:

> But why are so many starving in the country? It depends on that large farmers and landlords own most of the soil and the best arable land. Most farmers are poor farmers with too little soil to grow the food they need. Other landless farmers earn too little money to buy enough food (Sellergren & Östman, 1991: 332).

Levels of subsistence were not determined 'by nature' but – as we saw earlier – internal to and dependent on the ownership of the land. Furthermore, the authors contended that there is enough food for everyone. For Sellergren & Östman (1991), the problem is that too little food is produced in developing countries and that this food is unequally (and unevenly) distributed, by which an important cause is the unequal ownership of land. The dynamics of capitalism were important to take into account, since on the one hand, "Food is a commodity which has a price. It goes to those who have money, not to those who most need it" (i.e., the poor do not have money to buy food), and on the other hand, transnational companies are in charge of the production of 'luxury crops' in developing countries and the interest of these companies is "to make as much money as possible"; that is, they do not care whether people have enough food (Sellergren & Östman, 1991: 334).

However, even though such a critique was formulated against the profit motive and the commodification of resources, it was still claimed that in developing countries population growth is too rapid in relation to the production of food. Therefore, even though the production of food has increased, there is less food for each person. Consequently, the production of food must increase, and the population must be limited (Sellergren & Östman, 1991: 334). Similarly, Andersson & Joelsson (1993: 232) suggested that "Every week, 1 200 000 children are born. All these children are born into a world where one billion people already live without adequate food and where a couple hundred million live on the edge of starvation". Although differences between rich and poor countries were recognized, it certainly follows from this that the world was overpopulated. Overpopulation occurs when "a country no longer can support its own population" and as "overpopulated countries also have a rapid population growth, the population problems become great" (Andersson & Joelsson, 1993: 233). Furthermore, they maintained that about 80 % of the population in developing countries work in agriculture, but as these peasants have difficulties to secure subsistence, "They move to the city [slum areas more specifically]. It is in situations like these that we can speak about overpopulation". In fact, one might argue that what they were describing were the processes and conditions which create a "relative surplus population".

The contradiction, then, was still present. Despite the retention of such arguments, there was nonetheless a shifting emphasis in the beginning of the 1990s. That is to say, even though it was present, the neo-Malthusian logic lost ground and was given less attention. And in 1994, neo-Malthusianism was contrasted to, for example, the work of Ester Boserup and neo-Marxist theories (see e.g., Holmén et al., 1994; Östman et al., 1994). Nonetheless, as we will see further on, the spectre of Malthus will enter the scene again.

Concluding remarks

From the early 1960s to the early 1990s, geography textbook – as they were imbricated in the (re)production of ideologies of nature – adopted, diffused and articulated a set of powerful ideologies of nature. These two chapters have not only demonstrated that geography textbooks reproduced and articulated a set of distorted ideas of nature, but in fact that there were quite substantial *ideological* transformations (re-articulations) within the geography curriculum: from various ideas of nature rooted in ecology (equilibrium, interdependency, limits, a potential destructive human impact, the 'naturalness' of nature) and thus the drive to preserve a (external) stable and/or dynamic nature, to the idea of (external) natural limits, resource scarcity, and overpopulation. Although it might not directly appear so, what have been surveyed in these chapters – especially the idea of preservation and the neo-Malthusian notion of natural limits – can (and should) be understood as interrelated. As Katz (1998) notes, "the whole notion of preservation is pregnant with [neo-]Malthusian assumption" (1998: 55); that is "Part of what drives the impulse to 'preserve' is the notion that resources are running out, that people are destroying the environment, and that these problems exacerbated by unchecked population growth" (1998: 56).

Let us first consider the workings of ideology as distortion before turning our focus to the question of continuity and change. By positing humans as any other organisms and species and by conceiving nature as an ecosystem (other conceptions closely associated with the ecosystem were important too, such as equilibrium and balance) to a large degree *necessarily* separated from humans – thereby making an argument for the need of a 'natural' nature, and for preservation – nature appears unproduced, and thus, historical productions of nature become concealed. In this sense, humans are not actively transforming or shaping nature. In turn, not only do preservationist arguments create a contradiction – a contradiction because it is about socially creating an apparently non-social nature – but such arguments can, under right conditions, serve the interests of capital as they have the effect of banking a useful and profitable nature (use-values) for future exploitation.

Regarding the logic of neo-Malthusianism, there seemed to be a contradiction between resources and population, i.e., the population breeds to rapidly (universal nature) and inevitably outstrips a finite and external nature. Accordingly, as the world was overpopulated, natural limits had been exceeded, resource scarcity had arisen, and subsistence could not be secured. While this contradiction was far from absolute, what remains central here is how the idea of overpopulation 'naturalizes' the relationship between resources and population; that is, it is given by nature (a law of nature). The argument of a relative surplus population 'denaturalizes' the relationship between resources and population by grounding the population within the dynamics of capitalism. Through primitive accumulation and/or technological change, capitalism

creates a surplus population (a pool of 'free' workers or people unnecessary or superfluous to capital accumulation). As such, it addresses the "social sources of resource inequality".

Just as the idea of an ecosystem (and the various ideas closely associated with it) could be useful to capital, the idea of overpopulation could play a similar role. As was asserted earlier, it is functional in the sense that if a relative surplus is necessary for capital accumulation, "then what better way to explain it away than to appeal to a universal and supposedly 'natural' law of population?" (Harvey, 1974: 274; see also, Harvey, 1996: 149). Put succinctly, the idea of overpopulation obscures how capitalism produces and is dependent on a surplus population. In addition, this makes poverty, misery and inadequate means of sustenance a result of nature.

By paying close attention to content and by analysing content (and ideology) in a "field of force" (Englund, 1986, 1997) and thus the way in which curriculum content was rearticulated, I want to return to argument that there were few or any substantial changes in the geography curriculum during the 1960s and 1970s (Wennberg, 1990; Molin, 2006). Despite key re-articulations of ideology, there were not only transformations of ideology, there was also continuity. Or perhaps, in a seemingly contradictory fashion, within change, there is continuity. From the 1960s, there was – as we identified – a form of determinism at work, by which nature functions as a determinant and thus set the terms and limits for human existence. More specifically, what remains constant is the external and universal conception of nature; that is, our understanding was continually structured by these conceptions. But even here, although the meaning of these conceptions remains the same, the idea of continuity should not be pushed too far since these conceptions became (re)articulated with a new set of ideas, and a different historical context. Within such a context, i.e., under certain historical conditions, they worked and functioned according to a different logic. Nonetheless, what this testifies to is that Molin's (2006) argument that "strong selective traditions" have shaped the geography curriculum historically must be revised and set within a different light since they have not been as 'strong' as have been claimed. Rather, the content of the geography curriculum was reworked in relation to changing historical conditions, something which of course is not particularly strange, but still largely overlooked.

In the next (and final empirical) chapter, we will examine a phenomenon that started to emerge in the textbooks during the 1980s and early 1990s; namely climate change (see Wennberg et al., 1983: 280[125]; Sellergren & Östman, 1991). Yet, we will also more closely examine the now widespread

[125] For example Wennberg et al. maintained that there are "changes which can affect the entire globe and cause irreparable damage…In the industrial countries, carbon dioxide is created in an ever faster pace…The balance in nature has been disturbed, and therefore is the amount of CO2 increasing in the atmosphere".

and accepted concept emerging from “Our Common Future” (1987) (the Brundtland report); that is, the notion of sustainable development.

PART V

Historical articulations of nature

1994-2012
Chapter 9 – Global nature and sustaining nature

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> A further century of capitalist development whipped on by the inexorable pursuit of relative surplus value should have made the idea of the production of nature into a dreadful cliché. That it has not, that far from being a cliché it is a novel still almost quixotic idea, is testimony to *the power of the ideology of nature* (Smith, 1990: 62, emphasis added).

> With so much green, I start to see red (Katz, 1998: 51).

In the 1980s, not only was global environmental change on the agenda within human geography, but "Sweden assumed an important role in research on natural resources, climate change, energy and sustainability; themes which crystallized in the Brundtland Commission Report *Our Common Future* in 1987" (Buttimer & Mels, 2006: 82; see also, Hemfrid, 1999). With *Our Common Future* (1987) the term sustainable development became "famous" (Warde et al., 2018: 122) both within policy and public discourse (Redclift, 2005). Over the years it has been incorporated into education. For example, the *UN Decade for Education for Sustainable Development* lasted between 2004 and 2014 (Ideland, 2016: 97; see also Huckle & Wals, 2015).

Just as knowledge of environmental degradation has a long history, scientific knowledge of climate change is not particularly novel. In 1859 the British physicist John Tyndall demonstrated the relationship between carbon dioxide and climate by revealing how carbon dioxide regulated the climate through the so-called 'greenhouse effect'. Three and a half decades later in 1896, the Swedish climatologist Svante Arrhenius introduced the hypothesis that carbon dioxide could cause global warming and rising global temperatures (Foster & Burkett, 2008; Warde et al., 2018: 103). Despite accumulated knowledge of climate change during the past 100 years, it is only in the last 30 years or so that climate change has entered public discourse. In 1988, the US was "hit by high temperatures in what became known as 'the Greenhouse Summer'", during which massive fires burned in Yellowstone Park. In this year, James Hansen, a Nasa scientist, "testified to the Congress that 'The greenhouse effect…has been detected and is changing our climate now'" (Warde et al., 2018 :118). He "provided what's considered the first warning to a mass audience

about global warming…[and] declare[d] 'with 99 % confidence' that a recent sharp rise in temperatures was a result of human activity (Millman, 2018).

Besides the work of Arrhenius, Sweden has continued to contribute. For example, "the International Meteorological Institute at Stockholm University…led the climate change assessment for the landmark UN report…*Our Common Future*", and the meteorologist Bert Bolin (who for a long time worked as the director of the institute) "was the founding director of the…Intergovernmental Panel on Climate Change (IPCC)" in 1988 (Warde et al., 2018: 117).

In the years following the publication of *Our Common Future*, several environmental conferences were held, and several reports were published. This includes the "Earth Summit" in Rio de Janeiro (1992) and the subsequent report *Agenda 21* (1992), the Kyoto Protocol (1997), various assessment reports by IPCC; and more recently, the Paris Agreement (2015) and the COP26 in Glasgow (2021). Clearly, the "environmental consciousness" that emerged and was amplified in the 1960s and 1970s has not vanished. In Sweden, environmental legislation has continued to be on the agenda, for example through the Natural Resources Act (1987), which "offered possibilities for long-term planning in the areas of national interest for nature conservation, outdoor recreation and the cultural heritage", and the Environmental Code (Miljöbalken) (1999), which "replac[ed] no less than 15 separate laws". "Ambitious new environmental quality goals", Buttimer & Mels (2006: 87) argue, "were set for realization within the first quarter of the third millennium".

In 1994, the geography subject was reintroduced for upper secondary school. Officially it was the subject's interdisciplinary nature that was the main argument for its reintroduction as it was seen as having the potential to deal with human-environmental relations, environmental problems and resources. (Molin, 2006: 127-128).[126] Given the growing concern with climate change and sustainable development, the focus in this last empirical chapter will be on examining and analysing how ideologies of nature are articulated and function within textbooks' depictions of climate change and sustainable development. I would like to suggest that climate change and sustainable development provide a firm ground for examining (recent evolutions) of ideologies of nature, and that paying close attention to this evolution provides a different set of insights concerning the (geography) curriculum. The chapter runs

[126] Neoliberal winds, which had been blowing for quite some time (Harvey, 2005), picked up force in Sweden (as Buttimer & Mels [2006: 81] write, "Carl Bildt's conservative governmental interlude in the early 1990s subjected Sweden to an adventure in neoliberalism, and Göran Persson more recently fashioned the face of social democracy after a New Labour mould"), strongly buffeting on education in particular. In a short time and with massive implications, the educational system was decentralized (through a municipalisation), deregulated, privatized and marketized (through measures of competition, a voucher-program, 'free-choice' and commodification) (Dahlstedt & Fejes, 2018; Dahlstedt & Fejes, 2019).

as follows; the first section (1994-2011) will focus on climate change while the second (2011-2012) addresses sustainable development more explicitly. Sustainability, even though mentioned before 2011, becomes not only more prominent post-2011, but much of the content prior to 2011 becomes reproduced post-2011.

The production of nature on a global scale – climate change

While climate change has become a sensitive topic and highly politicized (see e.g., Dunlap, 2013; Hursh et al., 2015), it has, as I have mentioned, been part of geography education since the 1980s, and by 1994, it constituted a common theme. However, climate change is relatively marginal in geography textbooks (varying from 3 to 6 pages) and it is most often addressed in relation to the subject of climatology. Such a brief discussion might be explained by practical reasons. First there are other school subjects dealing with climate change, such as physics and natural science [Naturkunskap], and secondly, geography is of course much more than climate change. That climate change is part of climatology is obviously important for how climate change is understood, but it is not the primary concern here. Instead this section primarily takes up another matter: the way in which ideologies of nature have been articulated within our understandings of climate change.

First, then, I will demonstrate how climate change has been conceived from the standpoint of five textbooks from 1994-2011. Secondly, I will provide an analysis and point to some problems, and thirdly and lastly, suggest a better way to understand climate change. Hence, starting with the five textbooks, first from Holmén et al. (1994):

> Today, however, a lot suggests that *humans through their activities* have come *to influence* the climate and this is a particularly new situation in the earth's history (Holmén et al., 1994: 325, emphasis added).

> *Human activity* may have accomplished changes in the atmosphere…The atmosphere contains gasses that absorb radiation of different wave-lengths. [Ozone] absorbs radiation [preventing radiation to hit the earth's surface]…The reverse applies to the so-called [greenhouse gasses] [carbon dioxide, methane, nitric oxide, water vapour] … When we today speak of the greenhouse effect as an environmental issue, it is because humans *now add more of* these greenhouse gasses to the atmosphere then before, which is why we risk getting a temperature increase. Particularly the levels of carbon dioxide are meticulously studied…The processes causing this increase is closely related to

> resource exploitation and energy use… (Holmén et al., 1994: 326-327, emphasis added).[127]

From Östman (et al. 1994):

> The factor that most strongly contributes to climate change is considered to be the [greenhouse effect]. *We have* in a short period increased the levels of the so-called greenhouse gasses, carbon dioxide, freon, methane etc. in the atmosphere through intensive combustion of our stocks of coal and oil. The greenhouse gasses will then capture more of the longwave solar-energy and thus heat up the surface of the earth (Östman et al., 1994: 141, emphasis added).

From Persson (et al. 2001):

> Through various *human activities on earth*, especially burning of fossil fuels, the level of carbon dioxide is in the atmosphere rising. The burning of coal, oil etc releases carbon which has been stored in the earth's crust during millions of years and supplies the atmosphere in the form of carbon dioxide (Persson et al., 2001: 195, emphasis added).[128]

From Andersson et al. (2009):

> Since the atmosphere's content of carbon dioxide and other greenhouse gasses are increasing, for instance due to the incineration of fossil fuels, the *human, however*, causes an enhanced greenhouse effect which makes the climate warmer …[the IPCC] has proven that it is primarily the emissions of carbon dioxide from the burning of fossil fuels that causes global warming…[A diagram] shows carbon dioxide's and other greenhouse gasses' contribution to the enhanced greenhouse effect which is caused by *various human practices* (*anthropogenic impacts*) (Andersson et al., 2009: 162 & 163, emphasis added).

Andersson et al. (2009) also illustrated – which is not to say that other textbooks did not – the process of climate change with a picture (Figure 3).

[127] Holmén et al. (1994: 330) also recognized that the industrialized countries consume "75 % of all fossil fuel in the world".
[128] Concerning the increase of CO2, the authors add that 80 % of the increase "are connected to industrialization and its use of fossil fuels" (p. 196). Furthermore, they maintain (p. 200) that emissions of CO2 must decrease, and it is within the industrialized countries that the "decrease must occur" since 25 % of the earth's population lives there but they are responsible for 75 % of the emissions.

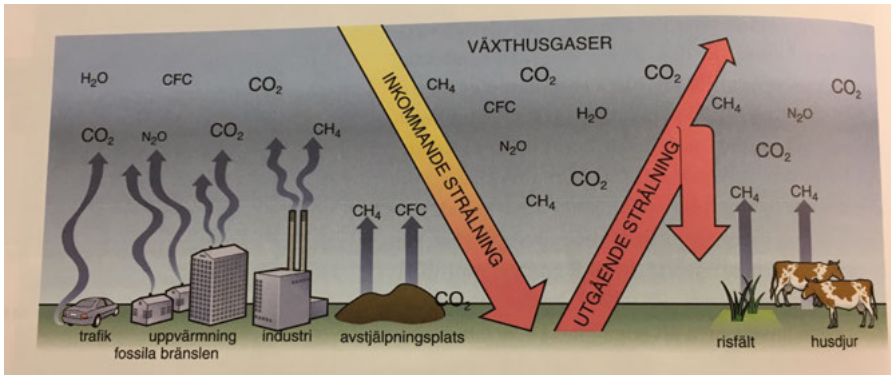

Figure 3. The image shows various emissions stemming from, for example, traffic, heating facilities, industries as well as incoming and outgoing radiation (Andersson et al., 2009: 164).

From Sandelin & Andersson (2011):

> *Also humans affect the global climate*. By *supplying the atmosphere* with different greenhouse gasses such as carbon dioxide, methane, nitric oxide, ozone or freon we see rising temperatures on earth. Greenhouse gasses capture a large part of the long-wave radiation which would otherwise radiate back into space, thus causing a warmer climate. The emissions of these gasses occur for instance with incineration of fossil fuels, but also from industry and agriculture. The use of fossil fuels as well as emissions of carbon dioxide have increased dramatically during the last 100 years. In the year 1900, about 500 million tons of coal was added to atmosphere through incineration, which can be compared with over 6 000 million tons of coal today (Sandelin & Andersson, 2011: 122, my emphasis).

And lastly from Östman (2011):

> The level of these so-called greenhouse gasses has increased significantly, mostly as a *result of human activity*. The greenhouse gasses are estimated *to affect* the climate so that the earth's temperature rises (p. 56, my emphasis). [The level of greenhouse gasses have increased]…through incineration of mainly oil and coal in connection to the heating of housing, industry and office spaces and increased traffic which is driven with petrol or diesel (Östman, 2011: 201).[129]

The passages from the different textbooks provide a solid scientific understanding of climate change. If the objective of education is to describe climate change and if students were to study climate change 'correctly' by conventional standards, these textbooks could be used to get the concepts straight (see Degerman, 2016). Textbooks describe how the greenhouse effect works, how

[129] Östman also discusses the Copenhagen Climate Change Conference (2009), at which it was agreed that "rich countries must sharply reduce their emission of greenhouse gasses and that developing countries must limit the increase of their emissions" (p. 203).

and why specific gasses are important, the role of radiation, the human and/or anthropogenic causes like the burning of fossil fuels and how various activities on the ground impact the composition of the atmosphere.

Thus, the human and societal sphere and its practices impact on and effect changes to the climate by alternating and changing natural processes such as the levels of CO^2 and the preferably balanced flow of heat energy and solar radiation. The human and societal sphere burns fossil fuels, cultivates the soil, uses energy and the like which leads to emissions of CO2 and in turn prevents energy from returning back into space. We seem to be producing nature not only all the way down (bioengineering or genetic manipulation) but also all the way up (Smith, 1990, 1996, 2007).

At first sight, then, given that these textbooks are by all means correct and provide a solid and common understanding of how climate change works – that is, the social production of nature is recognized – it might appear as there is nothing that stands out, that there is little to say about ideology here. That is, however, not the case. Taking the analysis somewhat further, these excerpts constitute a common sense, which has been established over time within which there has been very little change regarding the way climate change is conceived and presented. Yet this common sense remains particularly limiting through the articulation of three ideologies of nature: (i) in the deployment of 'we', human practice or activities and anthropogenic impacts, (ii) in the excessive focus on natural components such as gasses, radiation, solar energy, and (iii) in the use of 'influencing', 'supplying', 'adding', 'affecting' 'impacting', for example that humans 'effect' the climate or that humans 'add' more greenhouse gasses to the atmosphere. Though the social production of nature is recognized, I will argue that this understanding of climate change is limited since it harbours quite specific ideologies of nature. Put differently, the way in which such ideologies work as distortions, they are problematic insofar as they limit our understanding of climate change, and therefore also how to combat climate change.

First, and most importantly, the use of 'we', 'the human', 'human activity', or 'anthropogenic impacts' reveals the underlying assumption that it is a homogenous humanity who is responsible for climate change (cf. Klein, 2018). This overgeneralization directs attention towards some universal human qualities that have caused rising temperatures. While human practice obviously is responsible for climate change, and while these textbooks for example point to global inequalities regarding CO2 emissions, to energy use or industry and recognize that it is a new situation in the earth's history (aspects which are of crucial importance), the accounts remain too general and too insensitive to historical conditions since climate change is attributed to an undifferentiated humanity. This overgeneralization is found in that we are never told what kind of human practice it is that is responsible for rising temperatures (or how it arose). While the textbook passages quoted in the above only make one explicit reference to 'anthropogenic impacts', their portrayal of an

undifferentiated humanity as the cause of climate change, and their subsequent deployment of terminology such as 'we' and 'human activity', nevertheless result in them reproducing the anthropogenic – rather than a fully social as well as political economic – narrative.

The Anthropocene discourse[130] asserts that the Industrial revolution was the initial stage of the extensive *human* modification of nature, that *humanity* ascended to power over the rest of nature (Malm & Hornborg, 2014). The Anthropocene entails that "humans now have a dominant earth-shaping influence on the planet" (Baskin, 2015: 13), and it "identifies a universal species agent as the force behind the fire" (Malm, 2016: 216). "The concern", Baskin (2015: 15) rightly argues, "is that the Anthropocene label tends to universalise and normalise a small portion of humanity as 'the human of the Anthropocene'. It treats humans transhistorically. It does not distinguish between different societies, either spatially or temporally". Furthermore, "the term 'Anthropocene' reveals the power of humans, but it conceals who and what is powerful, and how that power is enacted".

According to this logic, what runs through these accounts is a universal conception of nature, that is – humans as part of (second) nature – which ultimately views 'humanity' as accountable for climate change. In terms of ideology as distortion, by attributing climate change to humanity, there is a particular form of naturalization (and eternalization) taking place – or as Baskin (2015: 16) puts it, "Particular forms of human behaviour…are…universalised, essentialised and made natural" – mystifying the actual drivers of climate change. That is to say, humanity cannot be used as an explanatory category since it asserts that 'we' are all equally responsible for causing climate change. There is, then, a need to be more specific.

Secondly, the overemphasise on natural components of climate change such as radiation, gasses, energy etc., externalizes nature because it assumes a conception of nature-in-itself. This assertion might appear as odd, and one might of course object that understanding natural components certainly is a prerequisite in order to more fully comprehend climate change. And I'm not arguing against this. Rather, I want to draw attention to the fact that by shifting the emphasis from the 'ground' to 'sky' puts an emphasis on natural components of climate change which, by extension, obscures – or does not adequately deal with – the root causes of climate change. That is, the processes and events taking place on the ground. As with the problem of undifferentiated humanity, there is form of naturalizing occurring; or put differently, climate change appears more natural than it is because the focus is predominantly on

[130] The "Anthropocene" was first introduced by Crutzen (2002) as a new geological epoch. This epoch can, according to Crutzen, can be dated to the invention of the steam engine in 1784. Following Steffen et al. (2007:614), the Anthropocene is "the current epoch in which humans and our societies have become a global geophysical force".

the natural processes and not natural processes within their social and economic context.

And thirdly, the use of terms like 'effecting', 'impacting' or 'influencing' reaffirms the dualistic understanding between nature and society. Humans as part of society in one corner merely impact nature (i.e., climate) which is located in another corner. Thus, we have a second nature impacting first nature, which is certainly the case, but this notion of 'impacting' does not sufficiently capture what is at stake. The social relationship to nature appears too accidental, haphazard and sporadic; it is as if there are no specific dynamics behind it.

While these textbooks provide a scientifically warranted description of climate change, underlining 'we' and human practice, focusing on or prioritizing natural components and using the idea of 'impacting' works as a distortion; they are not entirely wrong but they conceal important aspects. These three articulations suggest that there is something missing in order to more fully comprehend climate change. The heart of the problem is that climate change is taken in isolation. Consequently, this means severing the dynamics *causing* climate change from the phenomenon of climate change; that is, the analysis takes us only half-way because it lacks an understanding of the specific historical conditions behind climate change.

As indicated, nature is both conceived of as something external and as something universal; that is, by invoking humanity, we are all part of a single universal (second) nature. Given the way such ideologies are articulated – the universal conception of nature in particular – they function to if not conceal the driving forces of climate change; then at least turn the attention away from root causes. Building a political response out of such an ideology is difficult to say at least. Malm & Hornborg (2014) argue along similar lines that such a narrative works to foreclose necessary change:

> As for the drivers of climate change, naturalisation has an easily recognisable form…The effect is to block off any prospect for change. If global warming is the outcome of the knowledge of how to light a fire, or some other property of the human species acquired in some distant stage of its evolution, how can we even imagine a dismantling of the fossil economy? …[S]pecies-thinking on climate change is conducive to mystification and political paralysis. It cannot serve as a basis for challenging the vested interests of business-as-usual…Scholars naturalising climate change are rarely if ever working on behalf of the vested interests of business-as-usual. Most would likely wish to see them gone. Insofar as it occludes the historical origins of global warming and sinks the fossil economy into unalterable conditions the 'Anthropocene' is an ideology more by default than by design, more the product of the dominance of natural science in the field of climate change and, perhaps, the general blunting of critical edges and narrowing of political horizons in the post-1989 world than of any malicious apologetics (Malm & Hornborg, 2014: 67).

Needless to say, as textbook authors presumably "wish to see them gone" too, they are not ideologues of "vested interests". The point, however, is precisely that ideology works and functions in a particular way regardless of whether it is intentionally designed or not. In a similar fashion as carbon footprint analysis (which calculates carbon emissions based on lifestyle and consumption, and therefore how emissions are dispersed among individuals), this notion of a universal nature can be functional to fossil capital precisely because the latter becomes obscured. As Huber (2022: 13; original emphasis) writes, "it should be no surprise that the industrial capitalist class in control of our energy system has explicitly *promoted* carbon footprint ideology". An article analysing ExxonMobil advertisements revealed that they "systematically 'worked to shift responsibility for global warming away from the fossil fuel industry and onto consumers'" (Supran & Oreskes, 2021: 696; cited in Huber, 2022: 13).

Given that the fossil economy was not fashioned or maintained by humanity as such, the universal conception of (second) nature suffocates any attempt at transformative politics which might be able to dismantle the fossil economy. Such transhistorical and too unspecific concepts such as 'humanity' as the drivers of climate change cannot "explain a qualitatively novel order in history…[the] production of commodities for export to the world market" (Malm & Hornborg, 2014: 64). Insofar as the concern is to understand *and* to combat climate change, there is a need to address and dismantle such articulations of ideologies of nature.

Grounding climate change – a way forward

This section is an effort to ground and lay out the dynamics causing climate change in order to address the (implications of) these ideologies of nature. Starting in the concrete, some statistics can shed light on the matter. In 2008, capitalist states of "the North" constituted 18,8 % of the world population but had emitted 72,7 % of all CO2 since 1850; in the early 2000s, the poorest 45 % of the world's population were accountable for 7 % of the total emissions while the richest 7 % were responsible for 50 % (Roberts & Parks, 2007; cited in Malm & Hornborg, 2014). Importantly, this unevenness was to a lesser or greater extent recognized by the textbooks, but there is a need to go further. Heede (2014) shows that 63 % of cumulative global emissions of CO2 and methane resulting from fossil fuels and cement production between 1854-2010 can be traced back to "90 major entities": that is, 50 investor-owned, 31 state-owned and 9 nation-state producers. Quite astonishing is the fact that half of these emissions have been emitted since 1986. Griffin (2017) presents different numbers. Since 1988, the fossil fuel industry "has doubled its contribution to global warming by emitting as much greenhouse gas in 28 years as in the 237 years between 1988 and the birth of the industrial revolution" (p. 2)

and more than half of global industrial greenhouse gasses can be linked to only 25 corporate and state producers.

Accordingly, resorting to explanations of climate change based on the naturalization, and universalization, of humanity and human practice becomes problematic since it erases the unevenness and the social and geographical inequalities of climate change. The understanding that half of the emissions have been emitted since 1986 – mainly by a few powerful actors – makes climate change appear concrete and (historically) rooted. It provides us with a target, as Huber (2019) writes: "The dilemma of the climate crisis is not as simple as just replacing one system with another – it requires a confrontation with some of the wealthiest and most powerful sectors of capital in world history".

Malm (2013: 51) suggests that "[a]t a certain stage in the historical development of capital, fossil fuels become a necessary material substratum for the production of surplus-value". He explains that in the circulation of capital, in which fossil fuels are integrated,[131] "fossil fuels are now a portion of the means of production. The more capital expands, the larger the volumes extracted and combusted. Integral [to] the *Stoffwechsel* [metabolism], fossil fuels are subjected to productive consumption in ever growing quantities, with an inevitable by-product" (Malm, 2013: 51).

Malm provide a way to ground climate change as 'internal' to production with the result that the driving forces are unveiled and made more explicit; 'we' do not merely 'impact' the climate; instead, as Smith (1996) would argue, capitalism produces climate change. Therefore, there is a very particular and historically specific form of 'human practice' that drives climate change, and by departing from this form of human practice, we can better understand the making of climate change. If climate change is "taken in isolation" and "extracted from the processes of capital accumulation and the social relations of production" which cause climate change in the first place, "the dynamics leading to [climate change] fall out of focus" (Smith 2008 [1984]: 247). If the dynamics fall out of focus – something which is achieved through reproducing the anthropogenic narrative, and thereby the universal conception of nature – the possibility of understanding climate change is circumvented, and with that, or as a result of that, the possibility for political opposition is circumvented too. To be sure, it is a difficult task to target those wealthy and powerful actors and the dynamics of capitalism, but if we want to understand *and* combat climate change, the forces and drivers behind climate change must be if not the starting point, then, nonetheless centrally integrated.

[131] I'm not interested to evaluate Malm's argument of the production process. It is rather a way to historicize climate change and illustrate the crucial importance of understanding the relationship between capitalist mode of production, the utilization of fossil fuels and in turn rising temperatures.

The 'nature' and limits of sustainable development

This section examines the way in which ideologies of nature are articulated and work within textbook discussions of sustainable development.[132] The section starts by taking a closer look at the meaning of the concept itself and moves on to one proposed strategy for a sustainable future, that is, the concept of "ecological footprints". I will do that by examining the textbooks by Östman (2011), Sandelin & Andersson (2011) and Wiklund (2012), of which the latter is latest published textbook in this investigation.[133]

First then, we will take a closer look at the meaning of the concept of sustainable development as it is expressed in the textbooks by Östman (2011) and Sandelin & Andersson (2011):

> With [sustainable development] we mean that *our way of life should not destroy or deteriorate living-environments* and life conditions for future generations…Three parts of the societal development *must cooperate to be* [my emphasis] sustainable: the *social*[134], the *economic*[135] and the *environmental* [original emphasis]…The environmental [part] concerns for instance house-keeping with non-renewable resources…It also requires *protection of threatened plants and animals (the preservation of biodiversity) but also protection and conservation of the beauty of nature* [skönhetsvärden]…Other difficulties are that we who live under good life conditions do not always think of the future consequences of *our way of life* with a *high consumption of natural resources and the impact on the environment*. Poor knowledge about the effects of our lifestyle or that we do not care about the life conditions of future generations is a problem in the work towards a sustainable development…In the long term the social, economic and environmental parts of development *must be coordinated* so that they do not work against each other but *cooperate for a sustainable development* [original emphasis] (Östman, 2011: 51, emphasis added).

> All three dimensions [i.e. parts] are equally valuable and equally important. Together they form a system where they affect each other. For a sustainable development *the system must be in balance*, that is, no *dimension can dominate or counteract another one* (Östman, 2011: 51, emphasis added).

> The concept sustainable development can be broken down into three equally *significant and interdependent parts.* The carrying principle is that *human and*

[132] For a discussion about the curriculum reform of 2011 and the geography syllabus that was implemented, see Fridfeldt & Molin (2010).
[133] It should be noted that there are other editions of these textbooks. Wiklund published a similar textbook in 2010. The 2012 edition is merely a replica of the one published in 2010, though some chapters have been extended with a few additional pages.
[134] Östman (2011) mentions education, health, human rights, freedom of speech, and gender equality.
[135] Östman (2011) refers to a fair distribution of resources between states and people, possibilities to work and sustenance, fair trade and commodity production and sale that does not threaten life conditions for future generations.

> *ecological development occurs in an interplay* where investments in one area benefit the development in the other, and vice versa…The sustainable development *cannot be forced. It is we that must change our values* (Sandelin & Andersson, 2011: 308, emphasis added).

> A sustainable development requires knowledge of the five spheres…and how they *associate and affect each other*. Only then can we understand how to shape [design] society today and in the future so that it leads to sustainable development. It is partly about knowledge of the *system of nature* and partly how they function in the form of different *ecosystems* [original emphasis]. In an ecosystem, the *different spheres of nature cooperate to* create special living-environments for plants and animals. An example of a natural ecosystem is a lake with its plants and animals. The lithosphere, hydrosphere, atmosphere and biosphere *contribute to shape such an ecosystem*. The *homosphere often affects* [the ecosystem], for instance when humans utilize the lake for bathing or by releasing pollutants into the lake. *Ecosystems are more or less sensitive to impacts from the surroundings. If this impact exceeds certain limits the ecosystem can be destroyed or changed. In that context the threshold-value of the ecosystem has been exceeded. Such an ecosystem cannot be restored to its earlier condition* (Östman, 2011: 53, emphasis added).

These textbooks set out to define what sustainable development is all about and develop sophisticated arguments in order to address the ecological crisis (as well as other problems). Accordingly, there is much value to these discussions about sustainable development. Turning to how ideology is articulated and worked out, therefore, is not the deny the importance of their discussions, but rather to suggest that these discussions remain limited by ideology. That is to say, the textbooks are trying to solve a particular problem, but because of the workings of ideology, they cannot entirely solve the problem.

By setting sustainable development within the historical development of ideologies of nature, we can more closely understand what sustainability is. Sustainable development incorporates many ideas of nature – ideas rooted in ecology – that were central to how nature was articulated in the 1960s, 1970s and 1980s (see chapter 7). For example, the need to protect, preserve and conserve (external) nature (biodiversity and the beauty of nature) is one aspect, while the idea of maintaining (i.e., preserving) or restoring equilibrium is a different but connected one. That is, there is a need to find a balance between the social and nature (and within nature itself), which might be accomplished by securing nature away from destructive human interference. The entire corpus of sustainability is pregnant with the idea of equilibrium, either by the use of terms like cooperation, interplay and balance, or in discussions of how ecosystems are sensitive and fragile to (human) impacts, how ecosystems have certain limits (threshold-values) that might be exceeded, and if these limits are exceeded, ecosystems may be changed or destroyed (cease to function), by

which they cannot be restored.[136] According to this logic, regarding both preservation and equilibrium, nature seems to have not only some inherent qualities (nature as essence), but some inherent qualities worth maintaining. It should further be noted that, as was considered earlier, the preservation of nature – keeping nature 'natural' – does not necessarily entail the preservation of a stable nature, but rather a stable *and* dynamic nature. In turn, as nature increasingly has been turned into an "accumulation strategy" (Katz, 1998; Smith, 2007), ideologies of nature at work here – the external conception of nature is reinforced both through the protection and preservation of nature (biodiversity) and the discussion of maintaining the ecosystem intact – may be functional to the capitalist production of nature.

Although ideology continuously is articulated, sustainable development intends at the same time to question – or perhaps even suspend – the sacrosanct separation between nature and society. Sustainable development, it seems, is a situation characterized by relationships. Everything is related to everything else by emphasizing interplay, balance, system, interdependency and co-operation to make sure that no dimension or part dominates. Setting nature, the social and the economy in a relationship is certainly a valid starting point since it defies the conception of nature as something external to society and encourages us to think of how nature and society are co-constituted. Yet, suspending the division between the three parts and thus between society and nature only appears successful. That is to say, by dividing nature, the social and the economy into different parts and dimensions, and by emphasizing ideas of 'interdependency', 'interplay' 'cooperation' and the like, nature and society exists independently, and they are understood as externally related rather than internally related.

Think for example of the five spheres, we see first four as different aspects of primordial, non-human nature, and then secondly, the homosphere merely impacting nature. The implications are that a God-given and autonomous nature 'interacts' with an equally autonomous social world. Thus, seen from the perspective of the external conception of nature, sustainable development cannot completely escape the ideological chains – it only partially does so.

Turning it around, sustainable development also deploys the conception of universal nature. The conception of universal nature is deployed by making nature a system in a delicate balance of which each part is equally valuable

[136] The notion of natural limits was again emphasized within the discussion concerning threats to sustainable development by which Östman (2011: 55) wrote: "A different threat is that population growth leads to too much pressure on ecosystems and natural resources, that is, that the number of people become too great in relation to what nature can withstand. This threat can be averted or reduced through political decisions (population policy [befolkningspolitik]) which affect adults to not get many children…For a sustainable development, the population cannot be larger than what the ecosystems can withstand". Accordingly, (the spectre of) Malthus – with the idea of natural limits and that the population puts pressure on the environment – is never far away, or as Katz (1998: 54) phrased it: "…neo-Malthusian presumptions are rarely more than a heartbeat away from environmental politics".

and important. In such a way, society (and the economy) becomes subjected to the forces of an independent and external nature. Such thinking sets humans as part of the laws and logic of nature, which simply makes us cogs in the system of nature.

Accordingly, sustainable development collapses into endless (external) relations because no part assumes priority; that is, no part is privileged. There is, we might say, no social agency. As the social and economic part becomes subjected to the forces of nature – nature, then, determines in the last instance the social world. Quite contradictorily, then, although a sophisticated argument is developed to dissolve the nature-society dichotomy – successfully to a certain degree by setting the different parts or dimensions in a relationship – but by doing so, the ideology of nature is rehabilitated rather than weakened since for us to be part of nature, an autonomous nature must de facto exist for us to be part of. This is not to suggest that the concept of sustainable development should be jettisoned, or that textbooks should jettison the concept. Rather there is a need to extend the insights offered to us, or perhaps push these insights somewhat further by considering the *social* production of nature (Smith, 1990).

Last but not least, the concept of sustainable development highlights our "way of life" as the cause or driver of the environmental crisis since our way of life potentially destroys living-environments or consumes too many natural resources. The next section will examine not only the meaning and implications of our "way of life", but with that, one particular strategy for achieving a sustainable future.

The powerful idea of ecological footprints

In this section, we will examine the concept of ecological footprints as one strategy for a sustainable future. The concept of ecological footprints describes how many acres of land we use – and can use – to sustain our way of life. The measuring of ecological footprints examines consumption activities (such as housing, food, energy) and provides an output of the ecological space needed to support this consumption.[137] Or as one textbook phrased it: "The ecological footprint describes how big a biological productive surface, i.e., land and ocean, the average citizen in the world requires to produce, for

[137] Borgström, who was briefly introduced in the former chapter, "anticipated the concept of *ecological footprints*" with his concept "*ghost acreage*" (Linnér, 1998: 194; original emphasis). Ghost acreage "described how countries' food demands were exceeding local carrying capacity and becoming dependent on land elsewhere" (Warde et al., 2018: 65). There is, then, a spatial dimension to "ghost acreage" in the sense that some countries (e.g., Denmark) were "parasitic on the rest of the world", i.e., they "were supported by phantom land…elsewhere" (Linnér, 1998: 195) For Borgström, not all countries could be dependent on "ghost acreage" since "Space…imposed a fundamental limit" (Warde et al., 2018: 65).

example, clean water and food, as well as to defuse pollutions and waste products (Wiklund, 2012: 204).

To focus on ecological footprints is not to say that footprint analysis and (thus consumption) is the only strategy for a sustainable future. For example, the textbook by Östman (2011) focus on commodities and the relationship between production and consumption. "It has become all the more obvious", Östman (2011: 274) writes, "that large and long-term environmental problems are connected to society's circulation of commodities and to the energy consumption that is associated with commodity production". In connection to this, Sandelin & Andersson (2011: 313-314) importantly raise the problems of a "growth economy" and argue that "If our lifestyle is to become sustainable in the long-term, we must change our way of both producing and consuming commodities. In practice, this entails that we need to *reduce* our extraction of non-renewable and contingent renewable resources" (Sandelin & Andersson, 2011: 313; original emphasis).

Besides that, technology, or technological innovation, is viewed as important. Even more drastic measures are discussed. In his discussion of "CO2 sequestration", Wiklund (2012: 181) posited that, if emissions are not reduced through various measures, "geo-engineering can be the solution".[138] However, strategies are also geared at an individual level; that is, a form of individual consumerism – the need to become a responsible consumer and to select the right commodities – is also present (see e.g., Schindel Dimick, 2015; Ideland & Malmberg, 2015; Hillbur et al., 2016; Ideland, 2016; Henderson et al., 2016; Mitchell, 2018).

Accordingly, the textbooks address many central problems and consider several important strategies for a sustainable future. Although important ideologies of nature are at work within these strategies, the concept of ecological footprints offers significant and indispensable insights into recent articulations of ideologies of nature.[139]

I will here start by demonstrating how the idea of ecological footprints appeared in geography textbooks:

> It has lately become popular among environmental organizations in different ways to evaluate *the effects on the environment of our consumption*. The World Wide Fund for Nature (WWF) for instance calculates the ecological footprints *caused by our lifestyle*. Every human on earth has *roughly 1,8 hectares* …According to WWF the current development is unsustainable. As we become more populous on earth, *the ecological space is reduced for each person*. We are at the same time becoming richer which leads to a more *land, water and*

[138] What geo-engineering aspires to do is to engineer the effects of a socially produced nature by producing an even newer first nature. In that sense, the production of nature is well-enough recognized, but its logic is entirely dislocated. See Millar & Mitchell (2017) for a critique of geo-engineering.

[139] Furthermore, it should be noted that while the concept of ecological footprints is at the centre of the analysis, it also shares common characteristics with individual consumerism.

> *energy demanding lifestyle*. We passed already during the 1970s the *earth's carrying capacity* [bärkraft] and currently the average ecological footprint is at *around 2,7 hectares*…We *thus exceeds our ecological budget* yearly already in August (Sandelin & Andersson, 2011: 312; emphasis added).

> *The over-extraction of resources from nature* impairs the capacity of the ecosystem… Every human on earth uses *on average 2,2 hectares* of the earth's surface for their consumption, but the *ecosystem on earth currently only offers 1,8 acres* for a sustainable development…What changes of your *lifestyle* are required to burden the environment less? (Wiklund, 2012: 204-205; emphasis added).

> One of the points [that arises] by measuring the burden on the environment is that people become aware of the effects that our choices have. An increased environmental awareness can lead to a successively changed lifestyle and that environmental-political decisions become easier to implement (Wiklund, 2012: 205).[140]

Ecological footprint analysis, it should be noted, has pedagogic potential. Since these passages makes it evidently clear that the historical and current socio-environmental order is unsustainable, footprint analysis can serve to illustrate precisely that in a concrete way. Furthermore, depending on how footprint analysis is used, it might be a way for students to (re)consider not only how much ecological space or resources they use, but the global unevenness of this consumption – the average American uses 8 hectares, while the average Indian uses 0,9 hectares (Sandelin & Andersson, 2011: 312; see also, Wiklund, 2012: 204) – and it could be a way for students to become engaged with environmental issues. That is, students might feel empowered to change their lifestyle, affect their immediate surroundings and by that affect or change societal structures. And yet, the way in which footprint analysis addresses the environmental crisis is not entirely unproblematic.

This has to do with how the ideology of nature operates. Within footprint analysis, Malthusian thought – which was a central tenet to how nature was articulated during the 1960s and 1970s – arises by appealing to some inherent limits within nature (i.e., a certain 'ecological space' or 'ecological budget') and by suggesting that external nature functions as a determinate barrier we must submit to or live under; thus, nature is static in the sense that there is a definite quantifiable amount of nature. Accordingly, there is a contradiction between over-consumption on the one hand, and a determinate ecological space on the other (cf. Harvey, 1974).

The implications of this are crucial because at work here is a contemporary form of determinism, a determinism that incorporates humans under the law

[140] See also Östman (2011) and Andersson (2009) for examples of footprint analyses.

of an external nature. The universal conception of nature, then, does the most powerful work here (yet, it cannot exist without assuming the externality of nature). Nature – 'seen' as externally quantifiable, static and absolute – sets the limits for the social world; that is, nature ultimately defines the constrains we have to live under. The universal conception of nature makes us subjected to the forces of nature, and more specifically, a defined ecological space. Thus, footprint analysis reveals a certain continuity as it brings central ideas from the 1960s and 1970s to the present. However, as we will turn to, footprint analysis shed light on other important ideas that have their roots in the 1960s and 1970s.

Accordingly, it seems as if 'our way of life' puts a great deal of pressure on nature. These passages are mainly occupied with consumption and lifestyle since the focus is on environmental effects of 'consumption', the ecological footprints caused by our 'lifestyle' and the way in which our lifestyle 'burdens' the environment. It is through an environmental awareness – achieved by calculating ecological footprints – that we can successively change our lifestyle in order to occupy less ecological space and live in harmony with the constraints set up by nature.

At work here, then, is a form of "lifestyle environmentalism" (Huber, 2019). The notion of burdening the environment less centres on the (responsible) individual making changes and sacrificing particular aspects of the lifestyle. The textbook by Wiklund (2012) provides an example by referring to the 'Typical dad' – the lifestyle of an average 'Swedish Dad' – which makes it clear that the individuals through their lifestyle are responsible:

> The dad in the family Svensson is just an ordinary dad. If everyone in the world lived as he does 2,5 earths would be needed for his lifestyle to be sustainable. This is how his life looks like today. Wife and two kids in a villa. The household income is 50 000 kr/month. Stove and air heat pump. Travels yearly 20000 km with the [Volvo] V70. The family flies to the Mediterranean every year. They have changed to low-energy lamps in the house. He eats meat every day. The family recycles. They spend all the money they earn. They consider buying a dog…After a home makeover his life has changed to the better for the environment. The changes made are enough to come down to 1,4 earths. [This includes] reducing traveling by car to 10000 km. Flying to the Mediterranean every second year. He has become vegetarian and only eats one cooked meal per day. He and thus his family lives much leaner [snålare] and saves part of his wage at the bank. The saved capital will not be used for anything to burden the environment. If the family wants a dog the dad must give up travelling by car and he cannot come to the Mediterranean…There will be no dog but maybe a goldfish. It has an impact of 0,00034 acres (Wiklund, 2012: 205).

This illustrates the more practical changes an individual can do in their everyday life. 'Dad Svensson' makes several changes (or sacrifices) to his lifestyle which is enough to come down to 1,4 earths, a number closer to what nature can withstand. The environmental predicament requires that lifestyles and

consumption practices of individuals work in accordance to the absolute limits inherent in nature; one must adapt and become subjected to the laws and logic of nature. And, in the end it is 'your' responsibility to do so.

However, there is something more at stake here; something which is not apparently visible. Here we begin to move closer as to how ideology works as distortion (which is not to say that it is absent regarding how neo-Malthusian ideas are part of footprint analysis). First, footprint analysis posits (individualized) consumption and lifestyle as, if not *the* drivers, then at least key drivers of environmental degradation, which in turn blame consumers for environmental degradation. Secondly, as in the 1970s, the idea of ecological footprints – since the universal conception of nature is at work – equates the human to any other form of organism because the human operates within a closed ecosystem; that is, our '*life*style' generates environmental impacts – and occupies ecological space.

Huber (2019) suggests that footprint analysis is underpinned by the idea that humans are an organism just like any other; we have measurable impacts on the environment: "Bears eat fish, and humans eat fish tacos, but the results on an ecosystem are the same" (Ibid). Humans conceived as an organism within the larger web of nature (ecosystem) consume material in order to survive, the only difference it seems, is that humans are more aggressive and affluent consumers than other organisms; thus, humans occupy more ecological space. Footprint analysis is thus shaped by the ecological notion that humans are "organism-consumers" (Huber, 2019). However, we must ask ourselves: "is an individual consumer's 'footprint' all their own?" and, can we really be compared to other organisms? Huber (2019) points to the inverted logic with both humour and political sharpness:

> The difference between humans and other organisms is that no other organism monopolizes the means of production and forces some of those organisms to work for money. If we saw a bear privatize the means of fish production and force other bears to work for them, we would immediately conclude that something had gone wrong in this ecosystem. But this is what humans do to other human organisms. Humans organize access to resources (and consumption) via *class systems* of control and exclusion (Huber, 2019: 16; original emphasis).

In a society riven by class relations, where producers and consumers are set within capitalist relations (which of course is rather different from the producers and consumers of an ecosystem), perceiving humans as "organism-consumers" simply do not capture the way in which society is organized. If principles belonging to nature are transferred into the sphere of the social, and thus if nature occupies, colonizes and structures the social, then the social is organized by the same principles as nature. This ultimately creates a situation where the social becomes naturalized.

According to footprint analysis, which is set within an 'ecological worldview', it is only consumption that matters, and only consumption has

'real' impacts, which entirely obfuscates capitalist production. Such production cannot by any standard be disconnected from consumption – they are a differentiated unity. As Marx (1973a: 90; cited in Smith, 1998: 276) noted "production is also immediately consumption", and "consumption is also immediately production". That is to say, while footprint analysis emphasize consumption – and specifically individual consumption – as the way to address the environmental crisis, consumption in industrial production must be at the centre. As Huber (2017: 348; original emphasis) argues, "most of ecological impacts [emissions, environmental degradation] have already been accomplished in the *production of commodities* themselves". Given that the industrial sector "is far and away the largest consumer of materials and resources", the analysis "must focus on divisions of wealth and power over the material metabolism in society", and, in turn, those who control "these highly ecologically consequential industries", i.e., the industrial capitalists.

In other words, insofar as production, and especially consumption in production, remains obscured, footprint analysis is unable to solve the problem that it sets out to solve. This, of course, is not the deny that parts of the population can consume less, and thus reduce their ecological footprint. Reducing consumption is both important and necessary among parts of the population. At the same time, although ecological footprint analysis need not necessarily, it can be used to justify a "*politics of less*" among parts of the working class, a class "steeped as it is [and has been] in basic material deprivation. What is needed is also a *politics of more*" (Huber, 2022: 38; original emphasis). Furthermore, we should not forget that "consumption…[is] *necessary*…[for] social reproduction" (Huber, 2017: 348; original emphasis). Concerning postwar US capitalism, Harvey (1989: 39; cited in Huber, 2017: 348), contended that it implied "the mobilization of effective demand through the total restructuring of space so as to make the consumption of the products of the auto, oil, rubber, and construction industries a necessity rather than a luxury". In other words, while it certainly may be possible to consume less, "space" may simultaneously function as a barrier.

In sum, leaving consumption in production aside certainly creates a limited understanding of the environmental crisis. What this section has demonstrated is that, to use the words of Katz, this form of "Politics as consumption (and vice versa) works to individualize environmental problems and their solutions in ways that repeatedly forestall and mystify any meaningful ways of dealing with them". Focusing on the scale of individual consumption "often serves to efface the much broader realm wherein environmental problems are produced and to lull people into a problematic sense of security" (Katz, 1998: 51).

Concluding remarks

As with the developments in the 1960s and 1970s, the developments in the 1990s and onwards in the geography curriculum have been of great importance. However, despite the intentions of these textbooks to confront the environmental crisis – either by addressing climate change or promoting sustainability – they work within, remain trapped, and reproduce the commonsensical and fatal ideology of nature. This often contributes to, for example, shifting the attention away from root causes (obfuscating the conditions that generate environmental problems in the first place) by deploying the idea of an undifferentiated humanity, or within the context of an ecological worldview and footprint analysis, transforming the human to an "organism-consumer". Thus, important distortions to consider is how an undifferentiated humanity (universal conception of nature) reproduces the anthropogenic narrative, and in such a way, the universal conception of nature works to naturalize as well as to obscure the dynamics or driving forces of climate change. Equally important is the idea of ecological footprint and, consequently, the idea of humans as "organism consumers". If humans are viewed as "organism consumers", set within an ecological worldview (universal conception of nature), not only are humans and human practices naturalized, but such a view work to conceal capitalist production and consumption. Furthermore, these ideologies are favorable to fossil and industrial capital insofar as they shift the responsibility to either humanity or individuals. In other words, as emissions appear to be the result of humanity, and as the over-consumption of resources appears to be the result of humans as "organism-consumers" (individual consumption), those powerful actors that are responsible for the largest part of emissions and the consumption of resources remains largely unrecognized. Similarly, as footprint analysis assert that too much resources are consumed (there are certain natural limits we must submit to) it may be used to justify a "*politics of less*". In this way, it can be used to deny parts of the population the necessary means for social reproduction.

Despite the emergence of new themes and ideas in the textbooks in the 1990-2010s, this chapter has also demonstrated historical continuity from the 1960s and 1970s, ranging from the need to protect, conserve and preserve nature, notions of balance and equilibrium, securing nature from destructive human interference, that ecosystems might cease to function, neo-Malthusian natural limits (or limits residing in nature) by which external nature functions as a determinate barrier we must submit to (and thus a contemporary form of determinism), and that humans are equated to other organisms. This testifies to how the curriculum operates in a "field of force" and, in turn, how there is continuity within change.

This does not entail that textbooks are wrong (or bad), but rather that certain articulations of ideologies of nature works to *limit* our understanding of the environmental crisis. Unless geography textbooks begin to question the

ideology of nature within which they operate, they may – to a lesser or greater extent – continue to function as ideological props for 'business as usual'. Therefore, as long as the ideology is reproduced, finding meaningful ways of dealing with the environmental crisis will be difficult.

PART VI

Conclusions

Chapter 10 – Conclusions

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> [N]ature too has a history. It is not a timeless essence…In fact, the whole idea of nature as something separate from human experience is a lie (Wilson, 1992: 13).

> In the broadest terms, the political intent of analyses of the production of nature is to open up the history of nature both to retrospective examination and to future political agency (Smith, 1998: 275).

> A revolutionary politics of nature cannot emerge from transhistorical or binary treatments of nature…[It] must…be rooted in the specifics of capitalism and society (Katz, 1994: 279).

> Gramsci's emphasis on the creation of an alternative hegemony, by the practical connection of many different forms of struggle, including those not easily recognizable as and indeed not primarily 'political' and 'economic'…leads to a much more profound and more active sense of revolutionary activity in a highly developed society (Williams, 1977: 111).

In the beginning of this thesis, I noted that given the way in which nature commonly is understood – by conventional wisdom if you like – it is the antithesis to ideology. While nature, of course, is not all ideology, its ideological load (which often is successfully hidden) is nonetheless too important to remain concealed. In this thesis, we have examined the articulation and workings of ideologies of nature through six themes: 1866-1962: (i) environmental determinism and (ii) the division of human races (racial biology/scientific racism); 1962-1994: (iii) the environmental crisis and system's ecology, and (iv) the population explosion (overpopulation); 1994-2012: (v) climate change and (vi) sustainable development.

In past eras as well as our own era, the external and universal conception of nature have been expressed in particular ways – they have appeared and reappeared. Without reiterating in any greater detail, environmental determinism posited that external nature (primarily the landscape and climate) determined the level of culture (cultural superiority) and civilization, which, accordingly, made humans part of, and subject to nature. Regarding the division of human races, the question of a distinct human nature was more fully

explored, i.e., "the jewel in the crown of universal nature" as Smith (1990: 16) has put it. Here, for example, were physical and mental attributes part of our nature, heredity was emphasized, and as such, a biological determinism was at work.

In the 1960 and 1970s, the world appeared to be overpopulated. Rapid population growth, i.e., humanity's capacity to breed or reproduce (universal nature), exceeded (external) natural limits which would result in subsistence problems, resource scarcity, starvation and so forth. In this era, an "environmental consciousness" was becoming amplified. Within such a context, important ideas of balance, equilibrium and ecosystem emerged, humans needed to adapt to and become part of the laws of nature (external and universal nature), humans were viewed as a destructive force (external nature), and every part and chain of nature needed to be conserved and preserved (external nature).

With climate change, the main drivers causing rising levels of CO2 seemed to be 'we', i.e., 'human practice' and 'human activity'. In other words, by being rooted in and reproducing the anthropocentric narrative, an undifferentiated humanity (universal nature) was responsible. Within the concept of sustainable development and the strategy for achieving it, nature, the social, and the economy were viewed as related, yet independent parts. For a sustainable development, these parts needed to be balanced and/or cooperate. Footprint analysis – as one strategy for achieving sustainable development – posited the existence of a definite ecological space (external nature). Therefore, in a similar fashion as the overpopulation argument, the textbooks argued that the earth's carrying capacity has been exceeded through our consumption. As part of this, humans were depicted as any other organism (organism-consumers) and we needed to adapt to, become part of, and subject to this ecological space (universal nature).

Surely, this rapid and incomplete reiteration do not capture the level of detail that has been laid out in the previous chapters. However, such a rapid summary of shifting articulations of ideologies of nature functions as a starting point to consider the implications and contributions of this analysis. Although not easily or neatly distinguishable since one feed into the other (and vice versa), I have divided this into, on the one hand, geographic curriculum theory, and on the other hand, ideologies/the ideology of nature. By the end, we will return to the production of nature thesis.

Geographic curriculum theory

Providing a historical account of shifting articulations of ideologies is of importance for geographic curriculum theory. One of the central tenets of curriculum theory stresses that we should not take content for granted. Studies within geographic curriculum theory have indeed in many ways shown the

value of not taking the content for granted, for example by demonstrating how selective traditions shape the content of the geography curriculum. However, this thesis at least pushes us to reconsider the argument that the geography curriculum has been shaped by "strong selective traditions". By closely examining the *content* as to its significance, it pushes us to do so because there have been important (re)articulations of ideologies of nature.

The most significant shifts, which certainly have been acknowledged but not fully examined in the literature, are those that occurred in connection to the curriculum reform of 1962. Molin (2006: 200) rightly argues that regional geography has remained dominant (at both compulsory and upper secondary school) and that the content to a large extent has "solidified", while Wennberg (1990: 196-197) argues that although geography syllabuses changed from the 1950s to 1980s, there has not been a "profound reform of the subject, no actual break of tradition. The changes that have occurred have not derived from the paradigm shifts in the discipline human geography".

I have no reason to contest the validity of such claims, but following Hultén (2008: 249) who examined "nature's canon" in the science curriculum (textbooks included), such claims emphasizing inertia at the expense of change needs to be revised and nuanced. The geography curriculum, just as the science curriculum, has "integrate[d] new expressions within the framework of a seemingly fixed and unchanging structure". However, the relationship between inertia and change should not be understood in a contradictory fashion, rather they, Hultén (2008: 249) argues, should be understood as "compatible". That is, the history of the curriculum is a story in which change has been as constant as inertia.

When the school curriculum is viewed in relation to the changes in, and within the context of, the academic discipline, as well as in relation to curricular changes – which Wennberg and Molin to a lesser and greater extent did – inertia (stability, continuity) appears to be the case. While the connection between school geography and the discipline of geography have been relatively weak since the 1950s, by which the intellectual developments in physical and human geography have not trickled down to the geography curriculum, it does not imply that school curricula is "apprehensive to all kinds of ideas". The context of the academic discipline is important, but other contexts must also be considered. In this way, while the textbook often is viewed as "an inert and conservative force", and thus as the "culprit", it should be viewed as a product of its time and as shaped by various currents (societal, pedagogical, cultural) (Hultén, 2008: 255).

The ideological shifts in the 1960s and 1970s – shaped as they were by a specific historical context – demonstrate that geography took a different and important, albeit still a problematic, turn. Geography textbooks not merely addressed and responded to a set of urgent problems society was facing at the time, but, as part of that, reproduced a set of ideological claims which offered particular views on the problems society was facing. Accordingly, if we want

to know more about how the curriculum operates in a "field of force" (Englund, 1997), then putting ideology (and contexts) at the centre of our analyses appears as one fruitful strategy. In turn, if we want to know more about the role of ideology in geography curriculum theory, and thus what the geography curriculum *is* and *does*, we need to shift the attention away from 'what kind of geographical knowledge' to 'what kind of ideology *within* geographical knowledge'.

Although this analysis forces us to reconsider the geography curriculum historically, it is, by its very nature, limited. That is to say, what I have *not* shown is how teachers (and students) handle the content of these textbooks – or, to start with, the degree to which they used textbooks (or, if textbooks are used at all) – and thus whether they reproduce and accept or resist and challenge ideologies of nature; that is, whether ideologies of nature are struggled over in the classroom. Such an analysis remains to be conducted. A different, albeit equally important examination that remains to be conducted, is to enter the realm of production (i.e., the *production* of nature). Entering the realm of production entails an ethnographic study of the conditions and work that shape, and goes into, the making of a particular textbook. Rather than examining the products of the textbooks' authors labour, therefore, this would include the labour process itself, and how this process is determined and shaped by publishers, the state, pedagogic concerns, the historically specific production of nature, social ideologies and so forth. Furthermore, although I have focused on textbooks used primarily at secondary and upper secondary level, there is a need to extend and deepen the analysis of such textbooks at particular historical eras and across eras. Yet, more specifically, a productive way forward would be to examine textbooks used at elementary and primary school, as well as to move beyond textbooks and probe deeper into other forms of educational materials that have been used. Needless to say, there are plentiful paths forward.

Ideologies/the ideology of nature

This historical account of shifting articulations of ideologies of nature testifies not only to the fact that nature has a history, but that the history of nature cannot be severed from ideology. In this way, although nature performs its most powerful ideological work when it is conceived as something external and universal, it cannot be taken for granted as something transhistorical existing outside time. Laying bare these historical shifts of the external and universal conception offer, I believe, an empirical contribution. Yet, following from this, a theoretical contribution has also been made. The external and universal conception of nature – or the "master ideology" as it was called in the introductory chapter – is not given or fixed, it is not set in stone, rather it changes form.

Smith (1990; see also, Smith & O'Keefe, 1980) identified this contradictory dualism in two themes, what he referred to as "Nature in science" (p. 3) and "Poetic nature – American landscape" (p. 7). Yet he has also returned to this dualism in various ways (see e.g., Smith, 1996: 38-41); for example, in his discussing of environmentalism, Smith (1996: 40) argues that "the ambition to 'save nature' is utterly self-defeating insofar as it reaffirms the externality…of…nature".

In other words, Smith *named* this "master ideology", and he has drawn attention to the workings of this contradictory and fateful ideology, particularly how it has been understood within an US context. What I have offered is an extension of Smith's analysis; that is, a fuller and more complete picture of what this "master ideology" *is* (put flesh on the bones, as the expression goes, of this ideology), how it has worked and functioned (its effects and implications), how it changes form, and how it has been rooted in different historical contexts. As ideologies of nature have been part of different historical contexts, they change as society changes. Thus, given that articulations of ideologies of nature are shaped by society, different societies develop and make use of ideologies of nature. Put differently, certain ideologies of nature have been functional and useful to the capitalist production of nature, not in the sense that there has been a direct, deterministic, and unmediated relationship between production and ideology, but rather production and ideology may be viewed as articulated (no necessary correspondence). This, it should be clear, is not to argue that textbooks, and the ideologies of nature that were articulated within them, were created with the intention to serve the interests of capitalism. Given the weight of this "master ideology", it seems as if the important point is how textbooks have been implicated in forging and (re)articulating historical forms of *common sense*, which may – under the right conditions – have been useful to the capitalist production of nature. That is, textbooks articulate ideas, beliefs, knowledges which either are taken-for-granted – "Of course" experiences – or ought to be taken-for-granted. That textbooks actively forge and (re)articulate such a common sense – and continually work to do so over time – can hardly come as a great revelation (it may even be one of the major objectives with textbooks). Yet, (re)articulating historical forms of common sense is – as has been demonstrated in various ways throughout this thesis – problematic in so far as common sense constitutes distorted ideas of nature.

With an emphasis on historical forms of common sense, we should also say something about common sense and its relationship to the dialectic between stability *and* change. It is possible to think of common sense and the dialectic between stability and change in two ways, or perhaps more accurately, on two (interwoven) levels. On one level, there are the wide range of ideologies of nature articulated in the various themes described above, such as determinism, natural limits, resource scarcity, equilibrium, balance, interdependency and so forth. In other words, ideologies of nature are transformed and thus, they are

never completely uncontested. That ideologies of nature never are entirely uncontested holds true even if we turn the attention to some of the more persistent ideas and beliefs. The most illustrative example perhaps is environmental determinism, or how nature is viewed as a determinant. Important to stress here is how there have been different forms of determinism, and without going into too much detail, they range from a crude and racist form of determinism to the neo-Malthusian form of determinism, and to the softer neo-Malthusianism of footprint analysis. The latter posits the existence of a definite ecological space (a space that set the limits for our existence, and a space we must submit and become subject to) and while this surely was expressed in the heydays of neo-Malthusianism in the 1960s and 1970s, it is also a more contemporary phenomenon as it is expressed within ecological footprint analysis (within this view, humans are part nature as organism-consumers).

On a different level, despite the historical shifts of such a common sense, the "master ideology" of external and universal nature constitutes a more deep-seated and hegemonic form of common sense. But then again, although this ideology has remained constant, steadily at work, and central to how nature has been conceptualized – to recapitulate Smith's (1990: 2; emphasis added) words, despite the many ideas, meanings, conceptions and beliefs of nature, they "are organized into an essential dualism that *dominates* the conception of nature" – the form of this ideology has been transformed by adapting to new contexts and articulations.

When viewed as interwoven, common sense operates on two levels since various ideologies of nature are articulated with and structured by this "master ideology", i.e., despite the many ideas, conceptions and beliefs of nature, these various ideologies are dependent on the external and universal conception of nature for their existence. For example, external nature is conceived as a powerful determinant, there are external natural limits, external nature must be 'saved' and 'preserved', external nature functions as a source of authority, and in turn, humans are (or should) in different ways subject or submit to the logic of nature, while also being part of nature in the sense that we are either structured by the forces of nature or equated to other species and organisms. Given how ideologies of nature have been (re)articulated in geography textbooks, the more urgent question revolves around how to overcome them. As noted throughout this thesis, the production of nature thesis provides a way to not only critique and undermine ideologies of nature, but to demonstrate how ideology is *limited*. In such a way, the 'thesis' is helpful to move beyond and to build on various ideologies of nature. Ultimately, the production of nature thesis is crucial to advance the kind of material change that is necessary.

The production of alternative natures

Here, I would like to return to a quotation that was put forward in the first page of this thesis, namely Morgan's (2011: 214; see also Morgan, 2018) claim that "A major element in any radical school geography must be to provide a theoretical account of the relations between society and nature". According to Morgan, this is pivotal since in his view many geography lessons do not "offer a complex account" of the relation between society and nature.

What is needed is as necessary as it is inevitable, but it is not only a question of providing a theoretical account concerning the way in which human society and nature are interrelated; rather it is *how* they are interrelated. If we want to move away from ideologies of nature – forms of determinism, natural limits, preservationist arguments, that nature is something external, socially autonomous and God-given, and that we as humans are part of nature in specific partial ways – we need to take the production of nature thesis seriously precisely because it acknowledges that human society and nature are internally related from the very start, that nature is produced, and ultimately that we are forced to produce nature in *some* way. If Smith is correct by insisting that ideas are rooted in practice and that ideology is rooted in or the result of the production process, it is important to acknowledge that ideology cannot be overcome by a critique of ideology, as necessary as such a critique is. That is to say, the ideology of nature (the external conception in particular) is not merely a "lie", but a distortion formed under specific historical conditions (cf. Loftus, 2012: 3). Thus, ideology cannot be resolved by scientific endeavour since it is not in Larrain's (1996: 56) words an "intellectual error". In Larrain's reading of Marx, he argues that "revolutionary practice is…the only way to overcome ideology" (Larrain, 1979: 60).

Following Larrain, this, however, does not entail that we should revert from or entirely abandon engaging in the theoretical critique ideologies of nature since such a critique can undermine ideology. Engaging in such a critique is important because it suggests that, in this case, ideologies of nature can in various ways be resisted. Resisting ideologies of nature is, I think, of importance for geography education, geography textbooks, textbook authors, as well as for active geography teachers and prospective geography teachers. Counter-hegemonic movements are necessary to constantly undermine and criticize ideologies of nature and common sense in order to make them less 'natural' and less 'true'. The analysis provided here encourages and facilitates such movements as well as critical and resistant readings of textbooks. For example, as textbook authors are imbricated in the (re)production and (re)articulation of ideologies of nature, an alternative hegemony can be built, and different understandings of nature can emerge. But, while theoretical critique is one side of the spectrum – indeed an important one – we should not limit or confine ourselves to that. Since revolutionary practice is needed to overcome

ideology – it is also crucial to consider and work for how an alternative production of nature can emerge.

For Smith (1996: 50, 1998: 274; see also Smith, 2010), the production of nature thesis was meant to inspire what he referred to as a "revolutionary environmentalism". As the production of nature thesis necessarily poses severe challenges to various ideologies which either externalize nature or universalize nature, the production of nature thesis is indeed revolutionary precisely because it demands and forces us to conceive of the production of *alternative* natures. As such, the production of nature thesis should be a way to "open up the profound and optimistic possibility that radically different social environments and environmental societies are possible" (Smith, 1998: 275). As Smith (1996: 50) further argues, the thesis "has the political advantage in that it focuses the politics of nature around the question of how, and to what ends, alternative natures might be produced", and therefore, Smith emphasized that:

> The political question becomes this: how, by what social means and through what social institutions, is the production of nature to be organized? How are we to create democratic means for producing nature? What kind of nature do we want? These are, in the end, the central questions for a revolutionary environmentalism (Smith, 1996: 50).

This question of *how* to produce nature, and to *what* ends, draws attention to not only the possibility of producing alternative natures, but the very conditions under which nature is produced. That is to say, as Millar & Mitchell (2017: 87) have argued, the 'thesis' "is so revolutionary precisely because it refocuses attention on the modes and relations of production". The production of nature thesis – needless to say – is not *anti* the human capacity to produce nature since 'production in general' is the production of nature, and it not against transformations of nature which are driven by science or technology per se (Castree, 2001b). As Castree (2001b: 203; original emphasis) rightly notes, the point advanced by Smith (and others) is that: "*while we cannot not produce nature in the twenty-first century, we can at least endeavor to produce it in noncapitalist ways*". In other words, the point is not to jettison scientific and technology driven transformations of nature, but to divorce them from "capitalist imperatives" (ibid). This takes more than engaging in the critique of ideologies of nature, but in the end – since we cannot not produce nature – producing alternative natures is precisely what we must be committed to.

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Appendix I – The structure of educational system

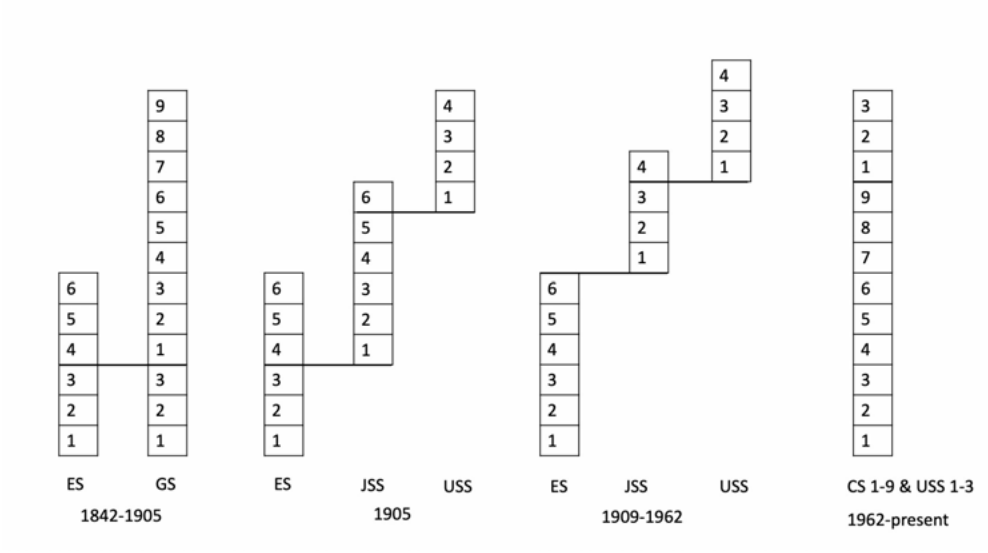

Figure 4. A simplified image of the structure of the Swedish educational system in a historical perspective. Reworked from Larsson & Prytz (2011: 127-129). The development of girls' schools is not included. ES = Elementary school; GS= Grammar school; JSS = Junior secondary school (realskola); USS = Upper secondary school (gymnasium); CS = Compulsory school (primary/middle/secondary level). The changes that occurred in 1927 are not included, but these entailed that "realskolan" was shortened and that two variants were created (a four and five year school).

Appendix II – List of textbook authors

1866-1962	Dahm, Palmblad, Erslev, Roth, Carlson, Carlson-Rönnholm-Moberg-Fagerlund, Swedberg, Olsson, Nelson-Stolpe, Moberg-Näsmark, Nelson-Stolpe-Wiman, Näsmark-Nilsson-Hjulström-Lagerstedt
1962-1944	Holdar-Rydefält, Nordström-Johnsson-Norberg, Sellergren, Sellergren-Skoglund, Modie & Moen, Thorstensson-Hildingson-Husén, Forsström-Holdar-Sellergren, Forsström-Sellergren-Holdar, Barrefors-Luksepp, Wennberg-Tillman-Lindström, Andersson-Joelsson, Sellergren-Östman
1994-2012	Holmén et.al; Östman et.al; Persson et.al; Andersson et al., Östman, Wiklund, Sandelin & Andersson

Figure 5. List of textbook authors from 1866-2012.

Appendix III – Short biographies of textbook authors

Vilhelm Fredrik Palmblad (1788-1852)

Swedish author/writer, publisher, and editor. Fil. mag (1815), associate professor (docent) in history (1822), adjunct professor (adjunkt) in history and statistics (1827), professor in Greek and Oriental languages (1835) at Uppsala University. Indeed a prolific author; he wrote not only textbooks but also academic and fictional literature. As a textbook author, he developed a geography based on the work of Karl Ritter. As a politically engaged writer, Palmblad was one of the leading conservative thinkers and debaters.

Vilhelm Fredrik Palmblad, https://sok.riksarkivet.se/sbl/artikel/7969, Svenskt biografiskt lexikon (art av Anders Burius), [accessed 2021-03-23].

Eduard Erslev (1824-1892)

Danish geographer, teacher and author. Magisterkonferens (an academic degree between a bachelor and doctoral) in Natural history (1850). Worked as an adjunct and "overlærer" (a lecturer or schoolteacher for upper secondary school [gymnasiet]) between 1850-1871 in Roskilde and Aarhus. In 1871, Erslev left his work as a schoolteacher as a professor. From 1865 and onwards, Erslev published several textbooks in geography for different levels. These were used for a long time in Denmark, and his textbooks were adapted and published in Sweden, Norway and Finland (for example, his "Lärobok i geografi för Sveriges folkskolor [1873] were republished in 17 editions until 1906). In 1876, he took the initiative to establish "Det Kongelige Danske Geografiske Selskab" (The Royal Danish Geographical Society) and served as its secretary and editor/publisher of its journal. Furthermore, he was rewarded with the "Ridder af Dannebrog" (Order of the Dannebrog) in 1864 and "Fortjenstmedaljen i guld" (Medal of Merit) in 1858. The former entailed a "Meritorious civil or military service, for a particular contribution to the arts, sciences or business life or for those working for Danish interests".

Nordisk familjebok https://da.wikipedia.org/wiki/Edvard_Erslev https://sv.wikipedia.org/wiki/Eduard_Erslev [accessed 2021-03-23]

Magnus Roth (1828-1895)

Bachelor's degree (1857) and PhD (1863) at Uppsala University with the dissertation: "Om abalienationen och reduktionen af kronans gods och räntor i Närike". Worked as a substitute teacher for a few years at Högre Elementarläroverket in Örebro before becoming an adjunct in 1864. In 1869, he became an adjunct at Nya Elementarskolan in Stockholm. Published atlases (which were widely used) as well as geography textbooks for different school levels.

Nordisk Familjebok (1916), Olsson (1986).

Oscar Elis Leonard Dahm (1812-1883)

Textbook author, principal, member of parliament (liberal), adjunct. Bachelor's degree (1835), fil. mag. and PhD (1836). Had several different positions within education, for example as a principal at Kalmar's "lärdoms och apologistskolor" and "elemantarläroverket" and as an adjunct (lecturer) in history and geography, although his work was often interrupted by political commitments and authorship. Politically, he became a member of parliament for "borgarståndet" (1869-1860) and had over time different political appointments both at a national, regional and local level. Dahm was in different ways deeply engaged in pedagogical questions – for example he fiercely advocated that the "reala bildningen" should be equivalent to the "klassiska bildningen" (that is, he opposed the dominance of Latin in education) –, he was part of the educational reform in 1878, and he was one of the most productive and hired textbook authors during the 1800s. For example, his "Sverige historia – Försök till lärobok för skolans lägsta klasser" was published in 16 editions (1842-1895), yet he became most famous for his "Geografi för elementarskolor" which was published in 14 editions between the mid 1800 and the late 1800s and early 1900s. In this book, Dahm sought to establish the most important and characteristic features of geography as well as to treat geography as an independent discipline rather than a subject that was read as a part of other subjects. Over four decades, Dahm's textbook became the most disseminated and thus had great significance for geography education. His understanding of geography was linked to the work of Karl Ritter.

Oscar Elis Leonard Dahm, https://sok.riksarkivet.se/sbl/artikel/15833, Svenskt biografiskt lexikon (art av G. Jacobson.), hämtad 2021-03-23, Olsson (1986).

CF Ernst Carlson (1854-1909)

Historian, member of parliament, lecturer and textbook author. Bachelor's degree (1874) and PhD in history (1877) about the Swedish King Karl XII, something which continued to be an interest. He worked, for example, as a lecturer (schoolteacher) in history and geography at Stockholms reallläroverk (1878-1880), associate professor (docent) in history at Uppsala University

(1880-1883), lecturer in history, geography and Swedish at "latin/reallärover-ket" in Gothenburg (1880-1883), and professor of history and political science at Göteborgs Högskola (1890-1893). He greatly advocated establishing geography as an independent school subject. As a textbook author, his textbooks (Course 1 & 2) were particularly successful as they became the dominant textbooks from the late 1800s until the 1950s (after his death, the textbooks were republished by Emil Fagerlund [Läroverksadjunkt] and Nils Rönnholm [fil. lic.]). He was also politically active as a member of the parliament: first without political affiliation before joining the liberal coalition party in 1900. As a politician, he was specifically concerned with culture and – needless to say – educational questions ranging from secularization of education, the role and status of Latin and more organizational questions. For example, Carlson was part of the committee that was concerned with establishing geography as an independent subject, he played an active role in the grammar school reform which established a "realskola" and "gymnasium" in 1904-1905 and he became the first director of the Grammar School Board (Läroverksöverstyrelsen).

Bladh (2020), Olsson (1986), C F Ernst Carlson, https://sok.riksarkivet.se/sbl/artikel/16425, Svenskt biografiskt lexikon (art av G. Jacobson.), [accessed 2021-03-24].

Sven Swedberg (1888-1972)

Lecturer, textbook author and honorary doctor in geography. Fil. lic. at Uppsala University (1913) with a thesis on the population geography of Södermanland (a Swedish landscape/province). Adjunct at "folkskoleseminariet" (1914) and lecturer in geography and biology (1918-1956) in Göteborg. During this time, he also worked for several years as a schoolteacher, teaching geography and "hembygdsundervising" (home area studies). Served as a board member of the Geographical Association (Geografiska Föreningen) and The Association of Geography Teachers (Geografilärarnas förening). A special intellectual interest was the "geography of wine" (he published, for example, *Rheingau och Rheinhessen - vincentrumet vid vinodlingens nordgräns* [1957], and *Mosel – världens nordligaste vindistrikt* [1954]), but Swedberg also wrote several geography textbooks between the 1930s and 1950s and worked between 1938-1960 as a lecturer (föreläsare) for the Swedish Radio. He was part of the School Commission of 1946 as an expert concerning geography education.

https://www.svd.se/arkiv/1972-05-03/7 [accessed 2021-10-22], Olsson (1986)

Helge Nelson (1882-1966)

Swedish geographer. Fil. lic. (1908), PhD in geography (1911) with the thesis "Om randdeltan och randåsar i mellersta och södra Sverige" at Uppsala University. He worked as a teacher/adjunct and principal between 1906-1915 before becoming a professor of geography at Lund University (1916-1947). He was concerned with strengthening the position of geography both at the academic level and in schools. Nelson founded The Geographical Association (Geografiska föreningen) in 1921, and he was a driving force behind the creation of The Geographical Society of Southern Sweden (Sydsvenska geografiska sällskapet) as well as one of the founders of The Association of Geography Teachers (1933), for which he served as the chair for many years. In his work – particularly as a professor – he advocated and formed the approach of regional geography.

Vem är det? Svensk biografisk handbok (1957), Bladh (2020), Olsson (1986), Helge M O Nelson, https://sok.riksarkivet.se/sbl/artikel/8828, Svenskt biografiskt lexikon (art av Karl Erik Bergsten) [accessed 2021-03-24].

Per Stolpe (1879-1959)

PhD (1911) with the thesis "En sydsvensk israndslinje och dess geografiska betydelse" at Uppsala University. Worked as a teacher and principal between 1910-1922 and as a lecturer in geography, biology and health (hälsolära) (1923-1945) at "folkskoleseminariet" in Karlstad. He was also politically active as a member of the city council. Besides authoring textbooks, he published "Know your country. Geographical causeries" (1942) and articles in annals of the Swedish Tourist Association (Svenska Turistföreningen).

Stolpe, släkt, https://sok.riksarkivet.se/sbl/artikel/20299, Svenskt biografiskt lexikon (art av Carl Henrik Carlsson), hämtad 2021-03-24.

Ulf Sellergren (1925-2017)

Educated as a teacher for "folkskolan". Fil. mag. in chemistry and geography in 1954. After teaching a few years, Sellergren worked as a principal in Stockholm, expert (school adviser/counsellor) at the School Board (Skolöverstyrelsen), as a deputy director-general (departementsråd) at the Department of Education, and as a school inspector. Sellergren did not consider that school textbooks were "stimulating for students", which is why he wrote new textbooks in both geography and chemistry.

https://www.dn.se/familj/minnesord-ulf-sellergren/ [accessed 2021-03-24], Vem är det? Svensk biografisk handbook (1985), Olsson (1986)

Gustav Holdar (1920-2013)

PhD in physical geography (1957) with the thesis “Deglaciationsförloppet i Torneträskområdet”

https://www.natgeo.su.se/forskning/2.5397/naturgeografi-1944-2008-1.53367 [accessed 2021-03-25]

Olof Nordström (1921-2014)

PhD (1952) with the thesis “Relationer mellan bruk och omland i östra Småland 1750-1900” at Lund University. Lecturer and associate professor of geography.

Olsson (1986), Helmfrid (1999)

Gösta Wennberg (1920-2004)

Studied geography and biology. Fil. Lic. in physical geography, PhD in geography/geography education with the thesis “Geografi och skolgeografi: Ett ämnes förändringar” (1990). He worked as a schoolteacher and subsequently as a lecturer in geography at the Teacher Trainer College [lärarhögskolan] in Uppsala, specifically as a “metodiklektor” (a lecturer concerned with methods). For Wennberg, for example, it was important for pupils to have their own atlas so that they could develop their own “mental maps”, and a solid methodology was important to create and maintain order in school classrooms. As the chair of The National Association of Geography Teachers (formerly The Association of Geography Teachers), he was strongly engaged in the question for reintroducing geography at the upper secondary school (gymnasiet). Wennberg also worked at The School Board (Skolöverstyrelsen) to develop curricula and syllabuses.

https://www.dn.se/arkiv/familj/gosta-wennberg-larde-eleverna-rita-egna-kartor/ [accessed 2021-03-25], Olsson (1986)

Appendix IV – Figures

Figure 1 on page 158: Textbook: Forsström et al. (1976: 108). Publisher: Esselte studium. Originator: K-A Holst

Figure 2 on page 161: Textbook: Thorstensson et al. (1985: 74-75). Publisher: Natur och kultur. Originator: Bernard Thornton Artists London: Gibbs, Tony

Figure 3 on page 207: Textbook: Andersson et al. (2009: 164). Publisher: Gleerup. Originator: Jorma Happonen, Otava

Geographica

Utges av Kulturgeografiska institutionen vid Uppsala universitet.
Published by the Department of Human Geography, Uppsala University.

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Nr 2 Sara Johansson: *Rytmen bor i mina steg: En rytmanalytisk studie om kropp, stad och kunskap*. Sweden, 2013
Nr 3 Pepijn Olders: *Continuity and Change: Essays on path-dependence in economic geography and good food.* Sweden, 2013
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