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Axiological ethical economics

Ecosystem services, pluralistic valuation, and the problems of neoclassical thought

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*Now we follow these strangers, who lead us along
without loving us, without curiosity or comprehension,
merely sufficiently convinced of our value, and perhaps
intent on profiting from us. We will be passed from hand
to hand in the markets of the great prairie. We will grow
ever quieter, ever more condemned to wrap ourselves in
the blind solitude of objects.*

- From "Plundered" by Fabio Pusterla
Translated by Geoffrey Brock

My economy is derivative, parasitical, and residual.

My economy is a hand-me-down.

- From "\$6.82" by Mónica de la Torre

Abstract

In this thesis I engage with the philosophical and theoretical assumptions of mainstream economic thinking, and how these related to the concept of *ecosystem services* (ES). I argue that dominant economic methods of valuation are inadequate for valuing ES as environmental goods. The problem with these methods comes down to the philosophical assumptions made by mainstream economic theory about which type of values are important and can be assessed. I argue that mainstream economic valuation methods focus exclusively on the monetary values of goods and services, that is, the value they have when exchanged. Problematically for such valuation methods though, I attempt to show that ES take on the form of a flow which does not directly produce, or correlate with, a tradeable good or service. Because of this, I hold that they do not provide any adequate basis for mainstream methods to assign values to them. These assumptions lead to the failure of current dominant economic approaches in recognizing the vital importance of ES, as existential conditions both for the economy and humanity. While the main part of the thesis focuses on these insights about mainstream economics, I attempt to outline the possibility of an alternative economic approach based on insights contemporary environmental ethics. This approach leverages the fundamental issues with how dominant economics relate to values, to outline a framework which avoids making the same mistakes.

Preface

This thesis is an eclectic attempt at connecting philosophy with economic thought. It is part of a broader creative interest in the question: What might economics become?

Thank you to my advisor Arne Johan Vetlesen for his help since the spring semester of 2021, and for putting me on the trail of ecosystem services as an interesting case to leverage for considering the connection between environmental philosophy and economics.

I also have to thank Hannah, without your help none of this would have been possible.

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1. Introduction

In 2000 UN Secretary-General Kofi Annan called for the *Millennium Ecosystem Assessment*, also known as the MA, to document ecosystem change and its effect on human well-being.¹ The project tasked 1360 specialists from various disciplines, during a four-year period from 2001-2005, with synthesizing the then current knowledge and data on ecosystems.² Based on this synthesis and earlier work in the field, the MA adapted a conceptual framework for assessing ecosystems which has been called an ecosystem services approach. This approach is rooted in the concept of *ecosystem services* (ES), which by the MA is understood simply as the benefits that ecosystems provide for humanity.³ Since the MA project, the concept has become widespread within economics, political policymaking, and decision-making, and is for example being employed as the basis for socioeconomic analyses – functioning as a guiding conceptual framework for the valuation of ecosystems.⁴

The development of the ES concept has led to disagreements and discussions within academia, and many scholars have raised harsh critiques over it.⁵ Philosopher Keith Peterson points out that these critiques often revolve around a handful of core issues. He notes that one of the main recurring critiques is that the concept of ES allows for continued human exploitation of nature because it focuses on economic valuation methods which lead to the commodification of nature.⁶ Proceeding from the position of continental axiological ethics Peterson restates this criticism. He argues that the discourse surrounding ES systematically prioritizes economic values over the environmental conditions which ES are existentially dependent upon.⁷

Peterson explicitly aims his critique at the discourse surrounding ES and how this is shaped by capitalism.⁸ Yet, while many critical philosophers have written on the problems of capitalism, there seems to be a lack of discussion about the fundamental theoretical assumptions which capitalism is rooted on, namely neoclassical economics.⁹ *Neoclassical economics*, also termed orthodox or mainstream economics, is by many accounts the main

¹ Millennium Ecosystem Assessment (MA), *Ecosystems and Human Well-Being: Synthesis*, ii.

² Muddiman, *Ecosystem Services*, 29.

³ MA, *Ecosystems and Human Well-Being: Volume 1*, 28-29.

⁴ Muddiman, *Ecosystem Services*, 33-35.

⁵ See Schröter et al. “Ecosystem Services as a Contested Concept” for an overview of current critiques.

⁶ K. Peterson, *A World Not Made for Us*, 130-31.

⁷ *ibid.*, 119.

⁸ *ibid.*, 131-37.

⁹ C. Gosh and A. Gosh argue that neoclassical economics can be understood as a theoretical economic discipline that maintains capitalism: “It extols the virtues of capitalism and suggests policies that help the capitalists increase their command over the goods and services produced.” (C. Gosh and A. Gosh, *An Introduction to Economics*, 3.) As many scholars hold similar views, I do not think that this connection is controversial.

form of economics covered by economic textbooks and business schools.¹⁰ This school of economic thought is rooted in classic liberalistic philosophy and adheres to the fundamental assumption that economics is the study of the behaviour of individuals, and that it is a value-free positivist science.¹¹ Although mainstream, this is a conception of economics which has been heavily criticized by many alternative economic theorists.¹²

The problem with the lack of engagement with neoclassical economic theory within environmental philosophy, is twofold. On one hand, for example in the case of Peterson's critique of ES, there are some unsubstantiated arguments which occur about how economics works, and how it values nature. By passing this by, many critics of capitalism fail to consider the theoretical justifications that neoclassical economists provide to justify exploitative practices. I hold that by highlighting these, we can more adequately show why these justifications are untenable. On the other hand, many philosophers fail to consider what historian Hugh Stretton points out, namely that neoclassical economics is just one possible approach to economic thinking: "Nothing's necessarily wrong with economics. But there isn't a one-and-only right way to learn it."¹³

This thesis sets out to attempt to fill this gap in environmental philosophy. I seek to amend what I find to be problematic and lacking in Peterson's critique of ES, while at the same time employing his philosophical framework. As such, this thesis is meant to be taken as a constructive critique. It seeks to refocus the critique of ES based in axiological ethics to consider problems with neoclassical economics, rather than the concept of ES itself. Instead of asking 'What is wrong with ES?', I am posing the question: 'What is wrong with neoclassical economic thought, which leads to problems in employing ES?'

I hold that theoretically defined the concept of ES does not necessitate many of the problems that Peterson point out. Rather, it is the current operationalization of the concept within a neoclassical economic paradigm which leads to many of these problems. This is because of issues that I argue occur within neoclassical theory when it attempts to value ES. The main arguments I will be making is that neoclassical economics cannot either theoretically or ethically adequately justify valuations of ES. Many of the current critics, including Peterson, reject the concept of ES based on their critiques.¹⁴ By refocusing the

¹⁰ R. Hill and Myatt, *The Economics Anti-Textbook*, 41-44. Rochon and Rossi, "What is economics?", 21-39.

¹¹ R. Hill and Myatt, *The Economics Anti-Textbook*, 41-44. Rochon and Rossi, "What is economics?", 21-39.

¹² Burkett, *Marxism and Ecological Economics*, 4-5. Daly and Farley, *Ecological Economics*, 3-5. Muddiman, *Ecosystem Services*, 61-62. Rochon and Rossi, "What is economics?", 24-39.

¹³ Stretton, "The Quarrelsome Boundaries of Economics", 9.

¹⁴ Norton and Noonan, "Ecology and valuation", 665. K. Peterson, *A World Not Made for Us*, 131. Schröter et al., "Ecosystem Services as a Contested Concept". Sullivan, "Green capitalism", 26.

criticism as I am proposing here, we might end up vindicating the concept to a certain extent. My goal here, though, is not necessarily to defend ES, but to highlight that it is conceptually incompatible with neoclassical thinking. I hold that this might help raise some philosophically interesting questions related to what economic thought entails, and how we might reconceptualize the way we employ ES.

In addition, this thesis also constitutes an attempt at showing the applied potential of Peterson's axiological ethics. Alongside providing a critique of neoclassical economics, I will be proposing how we might begin to apply axiological ethical principles as a basis for a new economic approach. I will argue that this can open for an economics which is able to recognize fundamental relationships of dependence which characterise humanity's relation to ES. One of the main philosophical points of interest here is how economic practice connects with our value judgements and how we enact these judgements in action. As Andrew Sayer has argued, most economic practices and theories are based on, impact, and concern moral norms and values.¹⁵ Thus, how we economically value environmental goods have practical and moral impacts on how we relate to and treat nature. Because of this, I hold that ethical theories have not paid enough attention to considering how we might inform and structure our economic practices on new ethical approaches forwarded in environmental philosophy. These could function as important frameworks for turning abstract ethical considerations, into environmentally friendly practices.

The main star of the following is the concept of 'values'. How to we value nature? What values does nature hold for us as valuers? How do we prioritize between conflicting values? As Peterson notes, how we ascribe values and determine what is valuable is important for how we act: "[...] there is a link between value articulation and practice, between values and action [...]."¹⁶ By discussing how neoclassical economics treats values, we might better understand what practices this economic approach makes possible for us.

1.1 Structure of the thesis

This thesis consists of 8 main chapters, aside from this introduction. In broad strokes, these constitute three main parts. Chapter 2 and 3 cover the theoretical and philosophical assumptions and theories which inform the main part of the discussions and critique of

¹⁵ Sayer, "Moral Economy as Critique".

¹⁶ K. Peterson, *A World Not Made for Us*, xi.

neoclassical economics. 4, 5, and 6, constitute the main part of the thesis, laying out the case of ES, the problems with neoclassical economics, and why it fails in valuating ES. Chapter 7 presents closing remarks about what we must consider if we wish to begin conceptualizing an economic approach based in axiological ethics.

The 2nd chapter presents methodological clarifications and assumptions which shape the goal and discussion of the thesis. Chapter 3 focuses on the philosophical theory which is employed in the discussion of ES – Keith Peterson’s continental axiological ethics. In addition, it gives a brief overview of economics as a normative discipline, mainly based on the work of Arne Næss. Chapter 4 gives a brief overview of the history, definition, and current critique of ES. In addition, it justifies the anthropocentric approach I take in this thesis. Chapter 5 focuses on how neoclassical economists conceptualize services, and why this poses a problem for their valuation. It draws on insights from Marxist theory to argue that ES are fundamentally unproductive in the eyes of capitalist criteria for economic activity. Chapter 6 builds on the argument in the preceding chapter and moves on to consider the problems that undercut neoclassical economics attempts at assessing the values of ES. This highlights the theoretical and moral problems of neoclassical thought in valuation of environmental processes. Based on Peterson, it is discussed that ES can be understood as being a form of vital value which is a category of value neoclassical methods cannot represent. Chapter 7 consists of a short discussion which lifts the perspective from issues with neoclassical economics, to consider what an economic approach based on axiological ethics would entail. Here, ideas for pluralist and collective valuation are highlighter, in addition to the problem of the current structure of monetary values. Chapter 8 is a brief conclusion, summarizing the key arguments in this thesis, and puts them into a broader philosophical and political context.

2. Theoretical justifications

Before moving on, some of the broader philosophical and methodological assumptions informing this thesis should be clarified. In the following, I will be noting the main theoretical considerations and assumptions which shape my approach throughout this thesis. This delineates in what way I will be discussing ES and begins to help justify the focus on neoclassical economics. My approach is influenced by ideas forwarded in feminist epistemology, traditional poststructuralist thought, and newer post-Marxist critical theory.

2.1 A thesis about normative social concepts

This thesis is an attempt at applying philosophical methods in practice. It is a philosophical inquiry, based on philosophical insights and concepts, which aims to contribute to a discussion on how economics can be understood. Of central concern here will be how economic valuation is used in practice when valuing environmental goods and how this discipline can take into philosophical considerations on values and be more closely connected to ethical theories. Epistemologically, this thesis discusses concepts, ES and economics, which I hold to be both normative and partly socially constructed. They are understood as produced and shaped by their social and structural context.

I take ES to be a normatively constructed framework for environmental management and decision making. As such, I do not take it to be scientifically descriptive concept that explains how ecosystems work.¹⁷ Jax et al. highlight that what underlying values we commit ourselves to affect how we perceive ecosystems, and what we consider counts as an ES.¹⁸ For example, from a view based purely on quantitative instrumental values, a tree in my garden might be valuable as a source of fuel or for sequestering carbon. Considering a broader scope, I might value the tree for its aesthetic expression, or simply for the way it makes me feel when I sit in its shade on a hot summer day. Evidently, normative value judgements play a part in what we define as a ‘benefits to humanity’.

Likewise, I hold economics to be a normative discipline that is based on certain value judgements. As such, an economic approach might vary based on what value judgements we presuppose. Many neoclassical economists would disagree with this view as they hold

¹⁷ The concept does refer to a ‘real’ group of ecosystem processes that benefit for humanity. Yet, that these should be understood as ‘services’, or which processes are included in this definition, I take to be normative considerations.

¹⁸ Jax et al., “Ecosystem Services and Ethics”, 262.

economics to be a value-free positivist science.¹⁹ I will further justify my position on economics as a normative discipline in Chapter 3, but for now it should suffice to make it clear that this is the main view of economics I will be presenting in the following.

What is of interest to me throughout this thesis is mainly the normative value judgments which neoclassical economics is based on, and the capability of this theory to value ES. As such this thesis does not discuss any objective ‘truth’ about ES or economics. Rather, I take a critical approach which focuses on how we *could* understand these concepts, by engaging two overarching lines of inquiry. Firstly, whether neoclassical economic thought is consistent when it is applied to non-market goods and valuations. This presents a critique regarding the limits of neoclassical thought in what it is capable of measuring and valuating. Secondly, that neoclassical thought and monetary valuation *should not* be employed as valuation methods because of ethical concerns. As such, the thesis is chiefly focused on normative consideration about how economics *could* be understood, and how it *should* be employed. A caveat here, is that while this might result in an alternative conception of economic practice and ES, the thesis itself does not necessarily stake out *how* to realize these alternate conceptions. To facilitate the discussion of these lines of inquiry I draw on insights from multiple critical philosophical traditions, mainly feminist epistemology, poststructuralism, and contemporary post-Marxist thought. Taken together these insights provide some analytical tools which serve as guidelines and methodological justifications.

2.2 Manifest and operative concepts

The basic methodological assumption shaping my discussion of ES and its current critiques is the distinction made by feminist philosopher Sally Haslanger between manifest and operative concepts. These terms designate two ways in which a single concept can be understood. The *manifest concept* refers to the meaning that those who use a concept generally associate with it – its theoretical definition. *Operative concept* is how the concept works in practice.²⁰ According to Haslanger, there are cases where these two, the operative and manifest, do not coincide for a given concept. Haslanger notes that:

¹⁹ R. Hill and Myatt, *The Economics Anti-Textbook*, 41-44. Rochon and Rossi, “What is economics?”, 21-39.

²⁰ Haslanger, *Resisting Reality*, 389-90.

[...] there is often a significant gap between the dominant or institutional understanding of a domain and its actual workings, for example, in the interplay between concept and practice, developments on one side can get ahead of or stubbornly resist the other.²¹

As such, a concept can have another expression in practice than what is intended by its theoretical definition. In such cases, Haslanger points to three main strategies one can apply to bring the concepts back in unison. Firstly, one could bring practice in line with the manifest concept, by amending our practice.²² Secondly, one could let the operative concept dictate the manifest concept. That is, one could adopt a new manifest concept that is better in line with our current practice.²³ In the case of ES, this does not seem to be a viable alternative, if we hold that it is the current practice which is the fundamental problem. Lastly, Haslanger argues that we could modify our current understanding of the manifest concept, which in turn might change our operative practice.²⁴ We might assert that what Keith Peterson and other critics of ES argue is that we should take this third strategy. Because the current manifest concept of ES is not adequate to change our practice to conform with our intended target.²⁵

What I propose as the framework for this thesis is that we might employ an alternative conception of the first strategy. Rather than bringing the operative concept in line with the manifest one, my aim here is to attempt to bring it in line with a normatively intended target. In describing the noted strategies, I posit that Haslanger fails to touch upon an important question: *Why* are manifest and operative concepts out of step with one another? In the introduction I noted that Peterson holds that the concept is structurally incapable of creating the transformation it seeks, which might be understood as an answer to this question. That is, the manifest concept cannot in practice lead us to the intended target concept. This might be due to the manifest concept being vaguely defined or not excluding interpretations that lead to problematic operative practices. While amending the manifest concept to exclude problematic interpretations might be a feasible strategy, I believe this does not necessarily dismantle the structural context which interprets the concept in a problematic way. Without

²¹ Haslanger, *Resisting Reality*, 368.

²² *ibid.*, 376, 388-90.

²³ *ibid.*, 388-90.

²⁴ *ibid.*

²⁵ Note, alongside Peterson and other critics of ES, I take the term 'intended target' here to refer to the realization of an ecologically sustainable society.

focusing on the structural prerequisites that lead to ES being employed operatively in a problematic manner, we might risk repeating mistakes.

Because of this, rather than rejecting the concept of ES, I propose that we could discuss the fundamental structural assumptions that shape how it is interpreted. By doing this we might hope to propose a new operative concept that avoids the mistakes resulting from the impact of the context it is employed. To clarify, I take Peterson to criticise the structural and institutional assumptions which shape the operative concept of ES. I agree with such an approach. What I want to contend, though, is that this critique does not necessarily prescribe a rejection of the operative concept. My methodological approach here is thus not to reject ES, but to discuss what structural economic assumptions lead to the concept of ES having a problematic operative expression. By doing this, I hope not to discard the concept itself, but to propose an amendment of the structural context. That is, it is a strategy that attempts to amend the *interpretation* of the manifest concept so that the operative concept is changed.

To better understand why the structural context in which we employ our concepts are pertinent to discuss we can look to the work of Michel Foucault. According to Foucault, concepts are inherently linked to their discursive contexts. Concepts are coined and developed based on the dominant discourses in a discipline and the overarching *épistémès*²⁶ of a culture. At the same time, concepts also constitute discursive formations. This means that they are not just created and developed by discourses but are also fundamental elements that shape discourses.²⁷ Thus, discourse shapes our concepts, but our concepts also shape the discourses.

The method I am employing in this thesis chiefly engages critically with the dominant discourses that shape, create, and develop the operative concept of ES. This analytical method might help us understand why our current understanding of ES is problematic, thus giving us leeway to reconceptualize and reinterpret the concept. In turn, this might contribute to changing the current dominant discourse surrounding ES. This does leave two central caveats. Firstly, overturning or changing a discourse is not done in the twinkling of an eye. As such, this is no more than a proposed way forward in reinterpreting how we employ ES. Secondly, this strategy entails that we do not necessarily create a unison between the manifest and operative ES. There still might be a schism between them, as it only involves an act of

²⁶ An *épistémè*, according to Foucault, is a term that describes the applicable conditions for what is defined as knowledge within a culture, or alternatively the epistemological field that determines what is *a priori* knowledge. I refer readers to the preface to Foucault's *The Order of Things* (2005 [1966]) for more on this.

²⁷ Foucault, *The Archaeology of Knowledge*, 62-70.

reinterpreting the operative concept so that it might be in line with our intended target concept. As such, criticisms raised against the manifest concept might still hold.

2.3 Post-Marxist entanglements

In addition to the social constructivist and feminist approaches, there is one more methodological strand which shapes the goal of this thesis. This is the idea of ‘capitalist realism’ forwarded by Mark Fisher. I view this concept as justifying the critical approach focused on reinterpreting the operative ES, and highlighting problems with its structural context, rather than an approach which simply rejects ES.

Mark Fisher notes that there is a popular slogan attributed to both Frederic Jameson and Slavoj Žižek which goes: “It’s easier to imagine the end of the world than the end of capitalism.”²⁸ In Fisher’s *Capitalist Realism* one of the central points is that capitalism, as an ideological structure, presents itself to us as the only logical or ‘real’ alternative to how society is structured. That is capitalism seems to posit itself as the only plausible ‘natural order’ of things.²⁹ As Fisher writes: “[...] capitalist realism has successfully installed a ‘business ontology’ in which it is *simply obvious* that everything in society, [...], should be run as a business.”³⁰ In relation to how such a reality is maintained, one of Fisher’s main arguments is that capitalism in many ways defines and shapes what we can imagine. Fisher argues that:

Capitalism seamlessly occupies the horizons of the thinkable. [...] What we are dealing with now is not the incorporation of materials that previously seemed to possess subversive potentials, but instead, their *precorporation*: the pre-emptive formatting and shaping of desires, aspirations and hopes by capitalist culture.³¹

As such, capitalism could be taken as an overarching dominant discourse or épistémè cf. Foucault, which shapes the concepts we create, how they are developed, and how they are interpreted. Understanding capitalism in this way, I believe, poses a conundrum for Peterson’s critique and for strategies based only on modification of manifest concepts.

²⁸ Fisher, *Capitalist Realism*, 1-2.

²⁹ *ibid.*, 17.

³⁰ *ibid.*. Original emphasis.

³¹ *ibid.*, 8-9. Original emphasis.

This is because Fisher's view raises the question of whether we can formulate a concept that can subvert capitalism and neoclassical economics. If capitalism dictates what is thinkable, how could we then hope to be able to construct a new concept that breaks with this reality? As Fisher notes even classic subversive strategies, like detournement, are exhausted, capitalism incorporates and absorbs most counter-cultural and subversive acts.³² Yet, he argues that a viable method of resistance is, rather than subversion or imagining new alternatives, is by unveiling that what is 'taken for granted' is contingent. Fisher argues that:

[...] emancipatory politics must always destroy the appearance of a 'natural order', must reveal what is presented as necessary and inevitable as a mere contingency, just as it must make what was previously deemed to be impossible seem attainable.³³

The main methodological and analytical strategy Fisher posits to facilitate this is to show that capitalism is fundamentally inconsistent: "Capitalist realism can only be threatened if it is shown to be in some way inconsistent or untenable; if, that is to say, capitalism's ostensible 'realism' turns out to be nothing of the sort."³⁴

The reason for noting this philosophical assumption is to highlight that I believe that Peterson's dismissal of ES is too optimistic. It seems to imply that we can readily 'think outside the box' of capitalism, to imagine viable alternatives and subversive concepts. Even if we might hope to do so to some capacity, it does seem difficult to escape the precorporation that capitalism asserts. Because of this, the philosophical approach I will be taking in this thesis is to focus mainly on the inconsistencies and problematic aspects of neoclassical economics itself. The goal is to show that neoclassical economics, as the discourse shaping ES assessment, is untenable as an economic theory, both on theoretical and ethical grounds. From this critical approach, it might be possible to avoid capitalist precorporation because one is acutely aware of some of the problematic theoretical assumptions which justify the workings of capitalism. Hopefully, this approach might lead to a point from where it might be more viable to envision alternatives and new ways to conceptualize economics and the operative concept of ES.

³² Fisher, *Capitalist Realism*, 9-10.

³³ *ibid.*, 17.

³⁴ *ibid.*, 16.

3. Economy and axiological ethics

This chapter sets out to describe the main philosophical theories which will be employed in discussing ES and neoclassical economics. Informed by the work of Arne Næss, I begin by expounding on the position that economics can be understood as a normative discipline. Moving on from this I will clarify the axiological ethics of Keith Peterson, which are maintained as a reference point throughout the later discussions.

3.1 Normative Economics

In *Ecology, Community and Lifestyle*, Arne Næss argues that it is often necessary to consider economics when we are making political considerations. In many cases, we must balance the various costs and benefits of political-economic measures against poverty, unemployment, alongside tax policy, trade, and so on. Because of this, he asserts that environmentally minded philosophers and activists should to a larger degree engage with economic thinking.³⁵

Philosopher David Schmidtz echoes much of this sentiment, in relation to values. He argues that various value judgements might in many situations conflict. Because of this, we must rationally compare various values so that we can attempt to solve those conflicts. Economically minded valuations, such as cost-benefit analysis, are one framework which might help us solve such conflicts.³⁶ Importantly, it should be noted that Schmidtz does not prescribe that such valuation need to be done on the basis on monetary values.³⁷ Næss, similarly, argues that within the deep ecological movement, many metrics aside from money have been proposed as valuable quantifiable measurements.³⁸

The reason for involving Næss' view on economics here is not necessarily the call to engage with it, but due to his view that economics is a normative science.³⁹ According to Næss, economic measurements and the recommendations economists make based on these, are fundamentally connected to, and presuppose certain norms.⁴⁰ He notes that:

³⁵ Næss, *Økologi, Samfunn og Livsstil*, 143.

I refer to both a Norwegian and English version of *Ecology, Community and Lifestyle/Økologi, Samfunn og Livsstil* here. These editions are structurally quite different, but cover much of the same topics. The Norwegian edition includes some chapters which are omitted from the English, especially covering Næss' thoughts on economics.

³⁶ Schmidtz, "Value in Nature", 393.

³⁷ *ibid.*, 392 n13.

³⁸ Næss, *Ecology, Community and Lifestyle*, 128.

³⁹ Næss, *Økologi, Samfunn og Livsstil*, 167.

⁴⁰ Næss, *Ecology, Community and Lifestyle*, 105.

[e]conomics as a social science is by nature coloured by guidelines: one cannot by pure deduction come to the solutions as they are generally given. The estimations of economists will therefore only be one set of economic opinions. A set of norms together with a series of evaluations will therefore lay the ground for results.⁴¹

Næss takes 'norms' to fundamentally be prescriptions, or imperatives, which can be understood as declarations of our value judgements.⁴² He views the structuring of our value judgements as a system of norms, prescriptions, to be an analytical strategy that helps prioritise and map out various values.⁴³ Because of this normative fundament in economics, Næss' calls for economists to engage with philosophical approaches. By this he encourages economists to reflect upon the underlying value judgements which form their analyses.⁴⁴ Næss argues that if economics takes a descriptive approach and does not engage with our value judgements, norms, and the relation and prioritisation between them, then the study of economics is making a methodological mistake.⁴⁵ According to Næss, human action is fundamentally goal-oriented and happens within a hierarchy of goals, if economics does not engage with these goals, it is not truly engaging with human action.⁴⁶ Næss writes:

Economics is, in the European tradition, often defined as the science of how to satisfy human needs. But since it clearly does not talk about every kind of need it becomes necessary to define 'economic' needs. What are these? It is said that they are those that have to do with external means and how to obtain those external means, especially in relation to community or nations. [...] Looking into the pages of economics treatises you see however that practically every aspect of society gets a section. But most of the authors try to avoid too much contact with political problems, saying that the ultimate goals of economic policy are decided by the politicians. In this way economists avoid taking wisdom into account. They play the role of servants to whoever happens to have political power. Economists as contemporary scientists do not judge political goals but only advise on how best to realise goals announced by people in power.⁴⁷

⁴¹ Næss, *Ecology, Community and Lifestyle*, 109.

⁴² *ibid.*, 32.

⁴³ *ibid.*, 44.

⁴⁴ Næss, *Økologi, Samfunn og Livsstil*, 159.

⁴⁵ *ibid.*, 167.

⁴⁶ *ibid.*

⁴⁷ Næss, *Ecology, Community and Lifestyle*, 104-5.

According to Næss, since economics is based on value judgements, it is never evident that a proposed economic analysis is ‘more correct’ than another. This is because economic methodology has no broader meaning if it is not related to the value judgements that economists, politicians, and societies make.⁴⁸ Descriptions of economic states of affairs tell us nothing about what courses of action we might take, if not considered in relation to our proposed goals. He notes, for example, that the expediency of one economic alternative over other, does not automatically imply that it is the best alternative:

When it is said that it is economically more rational to transport heavy goods from A to B by means of trucks than by means of horses, it does not exclude the possibility that it is unwise to transport any heavy goods from A to B. Higher household norms than cheapness etc. may be involved.⁴⁹

What to do with the economic description ‘transporting heavy goods by truck from A to B is more expedient than by horse’ comes down to what value judgements we make, and what goals we have. As such, economics needs to be fundamentally seen in relation to axiological and ethical concerns. Hausman and McPherson note similarly that the views presented in traditional economic analyses are often just one possible way of understanding economic states of affairs. The way neoclassical economists describe economic processes and results are often based on choices, which conceivably *could be different*.⁵⁰

Næss’ assertion that economics have a normative basis consisting of underlying value judgements constitutes the starting point for this thesis. I hold that if value judgements shape economic practice, then we might endeavour to propose alternative ways of conceiving of economics by critically engaging with these judgements. An economics based purposefully on environmental ethical concerns and values might be an important framework for ethically minded decision making and prioritization. The first step of conceiving of such an alternate economics is to engage with the current value judgements of mainstream neoclassical economics. This is to uncover what values are currently leading to problematic consequences, for example in the case of ES.

I will be drawing on an eclectic group of insights from both economics and philosophy when discussing neoclassical theory. On one hand, I will be referring to

⁴⁸ Næss, *Ecology, Community and Lifestyle*, 107.

⁴⁹ *ibid.*

⁵⁰ Hausman and McPherson, “The Philosophical Foundations of Mainstream Normative Economics”, 227-29.

alternative economic traditions that are critical to the neoclassical approach, such as Marxist and ecological economics. These have forwarded critiques of the fundamental assumptions of neoclassical thought. On the other hand, as an overarching framework, I will be referring to Keith Peterson's continental axiological ethics. As a philosophical theory, this explicitly represents a way of thinking about values, prioritization, and relations between values, and as such seems highly relevant for the project I am proposing here.

3.2 Peterson's Axiological Ethics

Keith Peterson draws on insights from a related group of philosophical positions often referred to as value theory or axiological ethics.⁵¹ The focus of this ethical tradition is on the role, perception, and prioritization of values in relation to moral normativity.⁵² My reading of Peterson is based on the idea that axiological ethics is a theory about how values are connected to ethics, more than a full-fledged ethical position. Albeit a little discussed ethical theory, Peterson's theory presents some interesting viewpoints on the constitution of and relation between values. The main questions Peterson concerns himself with, and views as central for this axiological position, are questions about our patterns of prioritization between, and our orientations towards, various values.⁵³

The starting point for Peterson is the idea that human experience of value is inherently plastic and plural – we experience the world as oversaturated with values.⁵⁴ While this might seem relativistic, in practice our experience of values encounters some logical and social constrictions. Most entities in the world can only logically carry a restricted set of values, and our perceptions of values are shaped by our shared social institutions, individual moral development, culture, and so on.⁵⁵ These restrictions allow us to prioritize between various values, and settle conflicts between them, as Peterson writes:

⁵¹ K. Peterson, *A World Not Made for Us*, 93.

I adopt the latter term in this thesis, as not to confuse it with economic value theories like the labour theory of value, and similar concepts.

⁵² K. Peterson, *A World Not Made for Us*, 93.

⁵³ *ibid.*, 93-118.

⁵⁴ *ibid.*, 92-97.

⁵⁵ *ibid.*, 97-99.

[Axiological ethics] holds that the experience of value is inherently plural, that moral and social life is life in the midst of never-ending conflicts of value, and to resolve them we resort to mostly unconscious patterned prioritization of values in social context.⁵⁶

This view of values might lead us to a decidedly subjectivist position on values, in which we hold that all values are subjectively dependent on a valuer.⁵⁷ Peterson, though, rejects that we can draw a clear distinction between value objectivism and value subjectivism.⁵⁸ His axiological ethics fundamentally consists of an attempt at incorporating insights from both of these positions. Because of this, Peterson grants the subjective premise that values are dependent on the existence of valuers. At the same time, he also argues that these values are both experienced as objective and restricted by their objective material and social relationships.⁵⁹

By drawing on insights from both objectivism and subjectivism Peterson explicitly attempts to mediate between the positions on value within environmental ethics forwarded by philosophers Holmes Rolston, III and J. Baird Callicott.⁶⁰ Rolston was a clear value objectivist. According to Rolston, values exist objectively ‘out in the world’ independent of valuers and are simply ‘discovered’.⁶¹ Peterson, though, rejects this view in favour of a more pragmatic approach, holding that intrinsic values are attributed within historical and social structures. In this sense, we might hold that there exist intrinsic values, but these are only due to conceptions held by the valuers themselves – they do not necessarily have an independent objective existence.⁶² As such, Peterson’s view might seem closer to Callicott’s subjectivist view on value, which holds that value does not exist independent of a valuer.⁶³ Yet, Peterson distances himself from a completely subjectivist view on value as well. He argues:

[...] sourcing value in the subject, even if locating it occasionally outside the subject, cannot lead to a satisfactory solution to the larger relativist dilemma posed by the anthropocentric problem of exploitation of nature discussed in the introduction. Some individuals will exploit nature because they do not inherently value it; some will not because they do.⁶⁴

⁵⁶ K. Peterson, *A World Not Made for Us*, 15.

⁵⁷ *ibid.*, 75.

⁵⁸ *ibid.*, 13, 103.

⁵⁹ *ibid.*, 93-103.

⁶⁰ *ibid.*, 75-77.

⁶¹ K. Peterson, *A World Not Made for Us*, 75-76. Rolston, *Environmental Ethics*, 27-28, 112-17.

⁶² K. Peterson, *A World Not Made for Us*, 75-77.

⁶³ K. Peterson, *A World Not Made for Us*, 75. Callicott, *In Defense of the Land Ethic*, 133, 160-62.

⁶⁴ K. Peterson, *A World Not Made for Us*, 75-76.

The point here is that Peterson's position is attempting to bridge a gap between Rolston and Callicott's view, and he draws on insights from both. In doing this, he presents an axiological theory which has a subjectivist basis but incorporates that values have objective material restrictions and relations.

One of the main objective aspects of values that Peterson forwards, is that values have what can be called 'constitutional relationality' for moral agents. This means that they are *experienced* as objective to us.⁶⁵ Here Peterson draws on Hartmann who argues that values have an *ideal self-existence*. Hartmann's point seems to be that ideal objects which can only be perceived a priori and not by our senses, have an objective existence by virtue of the resistance they accord to our thinking. As an example of this, he points out that mathematical truths might be taken to be universal and necessary, yet not everyone might be able to perceive such truths.⁶⁶ Only those trained in mathematics might be able to perceive that " $a^\circ = I$."⁶⁷ Yet, to those who are trained in this manner, cannot think otherwise: "[...] whoever has reached the level of such intelligence cannot think as he pleases, but must think that only what in itself 'is' a° necessarily and objectively 'is' = I."⁶⁸

The point here is that some values are experienced as having this form of 'resistance' towards our subjective will, they might appear to us as universal and necessary, akin to any other 'real' object. As such, according to Peterson, values have an 'absolute' existence for humans, in that we experience them as independent from our will and we define ourselves with reference to them.⁶⁹ For example, Peterson points out that moral values are subjectively and socially determined, but after they are determined we relate to them as objective:

[...] moral values are qualities of social acts and persons. Once generated in these acts, they no longer depend on individual subjects and play their role as detached normative criteria for judgment. They are cultural products that take on a life of their own and are directly inscribed in our affective social lives [...].⁷⁰

If we hold that values are subjective, but we relate to them as objective, we might be led to conclude that we are making a categorical mistake as we are construing values to be

⁶⁵ K. Peterson, *A World Not Made for Us*, 94.

⁶⁶ Hartmann, *Moral Phenomena*, chap. XVI, sec. a-c, EPUB.

⁶⁷ *ibid.*, chap. XVI sec. c, para. 9-11, EPUB.

⁶⁸ *ibid.*, chap. XVI sec. c, para. 11, EPUB.

⁶⁹ K. Peterson, *A World Not Made for Us*, 94.

⁷⁰ *ibid.*, 102.

something that they are not. This is not what I read Peterson's position to be. I hold that the point here is that we relate to values in a specific way, as objective, and because of this they have a certain power over us, and importance for us. At the same time, values cannot exist outside of our subjectivity as valuers, but this is not seen as detrimental for how we view or relate to them.

3.2.1 Goods values and moral values

Peterson draws a general distinction between two overarching forms of value. He argues that this distinction follows intuitively from how our actions are structured.⁷¹ On one hand there are what can be called *goods values*, which are the values that are intended in action. On the other, we have *moral values*, which are the values of the intention itself.⁷² According to Peterson, this distinction is important as it shows that values are not inherently moral, but rather that there exists both nonmoral and moral values.⁷³ Peterson gives an example of the distinction – environmental protesters might intend forest preservation, which is thus a goods value, but that the value of the intention itself is determined by a moral value, for example, compassion or righteousness.⁷⁴ This taxonomy necessarily entails that Peterson's category of goods value is quite broad. Throughout *A World Not Made for Us* he mentions that it includes everything from environmental goods, nutritional value, health, useful material things, and even economic values. The key idea here, that binds these varied values together, is that they are all values which are 'good for' someone or something living.⁷⁵ Moral values, on the other hand, arise from a second-order valuation. These values stem from a capability to question whether a given orientation or attitude towards a good value is itself a good orientation or attitude.⁷⁶ As such, these are values which are deemed to be good in and for their own sake.

The relations between these two categories of values are central to Peterson's theoretical thinking. According to him, moral values are both axiological and ontological dependent upon goods values.⁷⁷ *Axiological dependence*, in this case, refers to an asymmetrical relation of meaning, as moral values reside upon humans presupposing the existence of goods values. For example, Peterson argues that theft is only possible if we experience things as valuable enough to steal, or that conservation is only possible if we

⁷¹ K. Peterson, *A World Not Made for Us*, 99.

⁷² *ibid.*, 99-100.

⁷³ *ibid.*, 100.

⁷⁴ *ibid.*, 99.

⁷⁵ *ibid.*, 100-108.

⁷⁶ *ibid.*, 100.

⁷⁷ *ibid.*, 103.

experience things as valuable enough to protect.⁷⁸ *Ontological dependence*, on the other hand, refers to the fact that there would not be any moral values at all if there were no moral agents who relate to external goods values.⁷⁹ As Peterson argues:

There simply would be no moral values at all without moral agencies embodied in vital subjects in a world of real objects, threats, promises, and social norms where survival and flourishing is a persistent goal.⁸⁰

Thus, we could take ontological dependence as a precondition for axiological dependence. The point here is that, ontologically, goods values are what allows the realm of moral values to exist at all.⁸¹ Peterson exemplifies these relations of dependence in the following way:

[...] the dolphin activist “includes” the good or vital value of the dolphin in her compassion by axiologically presupposing it; but she can only exhibit compassion because she is a living, social, moral agent, on the one hand, and because the dolphin has (or is assumed to possess) a “good of its own” on the other.⁸²

Moreover, it seems that according to Peterson, these relations of dependence can also hold between values of the same type. For example, some goods values could be taken to be preconditions for other goods values.⁸³ Forest preservation, for example, is reliant upon the existence of forests.

As such, there seems that according to Peterson, values are reliant both on subjective and objective characteristics. On one hand, values cannot exist without valuers. All these values are according to Peterson ‘for someone’, in the sense that they are always conferred and held by a valuer.⁸⁴ On the other hand, valuers are not able to confer values if there are no objects or entities ‘out there’, as Peterson writes: “[...] values are not floating aloof in an isolated subjectivity disconnected from real ontological relationships, but are intimately interwoven with and dependent upon them.”⁸⁵

⁷⁸ K. Peterson, *A World Not Made for Us*, 103.

⁷⁹ *ibid.*, 103-4.

⁸⁰ *ibid.*, 104.

⁸¹ *ibid.*

⁸² *ibid.*

⁸³ *ibid.*, 108-9

⁸⁴ *ibid.*, 75, 94.

⁸⁵ *ibid.*, 103.

Peterson's position might seem akin to one that Holmes Rolston explicitly criticises. According to Rolston, rather than a complete objectivist or subjectivist view on values, we might take an anthropogenic account. In this view values do not exist without valuers, but the attributes which valuers base their value conferrals on objectively exist in the object.⁸⁶ As Rolston puts it: "The object plays its necessary part, though it is not sufficient without the subject."⁸⁷ Rolston criticises such a view on two grounds. Firstly, he claims that it is anthropocentric, as values thus only exist when human valuers are, or are imagined to be, present.⁸⁸ But Peterson, following Max Scheler, holds that the class of valuers can be extended to all living beings, and as such avoids this mistake.⁸⁹ All conative life has something which is a 'good for' it, and as such can be taken to be a valuer with regards to goods values.

Secondly, Rolston claims that this view is strained in preserving the properties of an object while at the same time claiming value conferral to be subjective. Rolston notes that while an anthropogenic view grants that an object is necessary for generating value, it does not elucidate further as to why this is a strained position.⁹⁰ In Peterson's view though, the existence of objects is an ontological condition for valuation and the existence of valuers, but they do not necessarily take part in generating value. Valuers are the only ones responsible for ascribing and determining value, objects only pose material and ontological restrictions as to what values can be ascribed to them. This means that we could contend to Rolston's objection by holding that objects themselves are not necessarily part of value generation. Rather, they constitute the limits as to what values we are able to logically confer. The next section considers such objective restrictions which Peterson posits holds for our value determinations.

3.2.2 Objective restrictions and priority relations

Peterson argues that there are four general principles which hold for pluralist axiological ethics. These help us identify a couple of logical limitations as to what values we are able to consistently hold and how to prioritize them. The first of these principles is what Peterson calls, the relativist principle, which sustains what has been said so far. According to this,

⁸⁶ Rolston, *Environmental Ethics*, 115-16.

⁸⁷ *ibid.*, 114.

⁸⁸ *ibid.*, 116.

⁸⁹ K. Peterson, *A World Not Made for Us*, 94 n56.

⁹⁰ Rolston, *Environmental Ethics*, 116.

because humans experience the world in the way they do, anything can have any value.⁹¹ For example, an apple might have a nutritional value, but also a “[...] symbolic value as signs of fall, or projectile value in the giant slingshot competitions [...]”⁹² On its own, this is decidedly a relativistic view of value, but the other three principles serve to limit this position.

The second principle is what Peterson calls *Rolston’s principle*, as it is heavily informed by Rolston’s argument for objective values. The idea here is that “[...] not every situation, thing, or being can bear just any value, given both its constitution and its relations to the kind of being we are.”⁹³ As an example of how this principle works, Peterson points out that “[...] oil can under no circumstances bear the value of nourishment for beings like ourselves, and is in fact toxic to most life [...]”⁹⁴ Petroleum cannot carry whatever arbitrary value we would posit for it, some values do not make logical sense to ascribe to certain entities or phenomena. This principle admits to Rolston’s view that some values, and our experience of them, are constrained by real world phenomena.⁹⁵ Yet, this does not necessarily grant that values have objective existence. Rolston notes that we can take the nutritional value of a potato to exist objectively out in the world.⁹⁶ From an axiological ethical perspective, we might argue that this value is not objective, it relies on the existence of someone who consumes potatoes, or more generally of a valuer. Yet, we can grant that the objective material constitution of the potato and of us as humans, allows us to ascribe nutritional value to it.

While Rolston’s principle logically hinders value relativism. The last two principles entail limitations as to the historical and social contingency of the values we hold. The first of these is the ontogeny principle. According to Peterson, this principle informs us of another restriction of how values might be socially and culturally affected. For Peterson, Rolston’s principle does limit the possible values we might ascribe to specific things, but even so there is still a myriad of possible values any given things can carry. Because of this, we often mitigate values through habitual and institutionalized behaviour, which is possible because of the plasticity of our value attitudes.⁹⁷ Peterson’s point here is that certain things might be ‘loaded’ with specific values precognitively or affectively based on our traditions, parenting,

⁹¹ K. Peterson, *A World Not Made for Us*, 97-98.

⁹² *ibid.*, 104.

⁹³ K. Peterson, *A World Not Made for Us*, 97-98.

⁹⁴ *ibid.*, 98.

⁹⁵ Rolston, *Environmental Ethics*, 3.

⁹⁶ *ibid.*

⁹⁷ K. Peterson, *A World Not Made for Us*, 97.

teaching, and other social norms and contexts. Thus, our social and cultural contexts shape our valuations.⁹⁸ The second of these social principles is the survival principle, which restrains the ontogeny principle. According to Peterson, we cannot agree upon, or maintain, just about any institutionalized prioritization or habituations of valuation indefinitely. The possibilities here are logically restrained by “[...] the reproductive and developmental life span of individuals and cultures.”⁹⁹ Thus, the preloading of values is conditioned by the survivability of those value ascriptions. As Peterson points out, valuing petroleum, as a cheap energy resource, cannot continue indefinitely because it might plausibly impede human survival in the future.¹⁰⁰ We could hold that the use of petroleum is contrary to human biological flourishing over time. As such the survival principle restricts the preloading of petroleum with resource value to a specific time horizon.

These principles do not necessarily give us any recourse to deem some values morally wrong and others not. We might say that some values are logically inconsistent, for example, oil cannot have nutritional value. We might also assert that some value ascriptions have limited temporal scope, but even if the preloading of oil with resource value is historically contingent, this does not imply that such a value ascription is morally wrong. It only implies that it will someday ‘run its course’. As such, those critical of value relativism might still question on what basis we might deem something as ‘morally wrong’ based on this view.

As mentioned earlier though, I read Peterson’s axiological view to be a theory of how values relate to moral considerations, rather than a fully fleshed-out ethical theory. Peterson argues that “[...] the ‘ought’ of moral values is empty without reference to concrete value qualities, and these qualities are exemplified in social acts.”¹⁰¹ As such, it is up to moral agents to agree upon and act upon moral values and confer meaning to them. The important philosophical concerns for the strand of axiological ethics which Peterson represents are over what values we habituate, and the consistency of our patterns of prioritization, and not necessarily determining what is morally ‘right’ or ‘wrong’. Yet, as Peterson argues, based on the ontological and axiological dependence relations, we might forward some fundamental moral concerns. The most important one being that since moral values and valuation are ontological dependent upon some goods values, if we fail to value these underlying goods values, we are making a moral mistake. *Backgrounding* is a term of ethical importance that

⁹⁸ K. Peterson, *A World Not Made for Us*, 98.

⁹⁹ *ibid.*

¹⁰⁰ K. Peterson, *A World Not Made for Us*, 98-99.

¹⁰¹ *ibid.*, 101.

Peterson lends from Val Plumwood. It can be understood as a term describing a “[...] simultaneous reliance and disavowal.”¹⁰² According to Peterson, such systematic backgrounding of entities and phenomena which we are existentially, ontologically, dependent upon is ethically wrong.¹⁰³ Thus, as moral agents, it is morally problematic to background the goods values which our moral values are ontologically dependent upon. This is a crucial point, which will come to bear on the discussion of ES later.

¹⁰² K. Peterson, “Ecosystem Services”, 6.

¹⁰³ K. Peterson, *A World Not Made for Us*, 110-11.

4. What are ecosystem services?

This chapter moves on to expound on the case of ES. Before discussing the concept in depth, it seems beneficial to give a brief overview of the concept's origins, current state, and how it is usually defined. This explanation could be seen as emblematic for what the manifest concept of ES entails. In addition, this section touches upon the current criticism raised towards ES and positions the discussion in this thesis in relation to these.

4.1 Development and current state of the ecosystem services concept

In academia, framing the beneficial functions which ecosystems have for us humans as 'services' began around the late 1970s. Initially, the concept of ES was used by biologists and ecologists, like Westman in the 1970s, and Ehrlich and Mooney in the early 1980s.¹⁰⁴ Yet, it was not until the 1990s that the concept became popularized. Mainstreaming within scholarly circles and further development of the concept during this period happened due to multiple important publications, such as those by Gretchen Daily, Rudolf de Groot, and Robert Costanza.¹⁰⁵

Most sources note that ES came into popular mainstream use outside of academia, such as in economic and political policy- and decision-making, following the UN's Millennium Ecosystem Assessment (MA) in 2005.¹⁰⁶ This was a project synthesizing available scientific information on ecosystems in multiple reports during the period 2001-2005.¹⁰⁷ Following the MA, The Economics of Ecosystems and Biodiversity (TEEB) began in 2007. This initiative, driven forward by environmental ministers from the G8+5 countries, drafted multiple reports to further popularize the concept of ES within political policymaking.¹⁰⁸ Additionally, the use of the concept was further strengthened by the *Intergovernmental Platform on Biodiversity*

¹⁰⁴ de Groot and Braat, "The contributions of the ecosystem services", 233, 236. Gómez-Baggethun, et al., "The history of ecosystem services", 1209-13.

For examples of the use of the ES concept in this early period see:

P. Ehrlich and A. Ehrlich, *Extinction*, (1982). (Especially pp. 86-95). P. Ehrlich, and Mooney, "Extinction, Substitution and Ecosystem Services", (1983). Westman, "How much are nature's services worth?", (1977).

¹⁰⁵ Gómez-Baggethun, et al., "The history of ecosystem services", 1209-13. K. Peterson, "Ecosystem Services", 4. Schröter et al., "The Ecosystem Service Concept", 7.

According to these sources the most important publications from this later period include:

Daily, ed., *Nature's Services*, (1997). de Groot, *Functions of Nature*, (1992). Costanza et al., "The value of the world's ecosystem services and natural capital", (1998).

¹⁰⁶ de Groot and Braat, "The contributions of the ecosystem services", 233. Gómez-Baggethun, et al., "The history of ecosystem services", 1214. Muddiman, *Ecosystem Services*, 29. Norgaard, "Ecosystem services", 1219. Schröter et al., "The Ecosystem Service Concept", 7.

¹⁰⁷ MA, *Ecosystems and Human Well-being: Volume 1*, vii-x. Muddiman, *Ecosystem Services*, 29.

¹⁰⁸ de Groot and Braat, "The contributions of the ecosystem services", 233, 237-39. Muddiman, *Ecosystem Services*, 33. Schröter et al., "The Ecosystem Service Concept", 7.

and *Ecosystem Services* (IPBES). Begun in 2012 with over 1000 governments participating, this project has the goal of critically assessing current knowledge we have on ES states and trends.¹⁰⁹

In the *Atlas of Ecosystem Services*, Schröter et al. note that in recent times: “Several national ecosystem assessments have been launched to gather knowledge on the state of the trends of ecosystems and the services they provide.”¹¹⁰ As an example of the policy impact of the ES approach, the TEEB initiative was important for the development of the NOU 2013:10 *Naturens goder – om verdien av økosystemtjenester* (Natural benefits – on the values of ecosystem services), a report by Norwegian government administration outlining how the findings of TEEB and the concept of ES are relevant in the Norwegian context. The report had the goal of assessing the economic value of ecosystems in Norway by employing ES, concluding that the concept was a valuable supplementary concept for use in environmental management on a national level.¹¹¹ This recommendation seems to be slowly effecting the normal investigative work done by the Norwegian government administration.¹¹² On a European level, we can find the ES concept actively being used in the *EU Biodiversity Strategy 2011-2020*, which directly formulates targets linked to ES.¹¹³

At the same time, the current role of ES and approaches based on the concept, should not be overestimated. Ainscough et al. point out that multiple studies have recently shown that assessments based on the concept of ES rarely play a role in influencing decisions, even if there are several projects and methods for integrating ES in decision-making. According to Ainscough et al., rather than a direct method for assessment, many proponents view ES as a valuable metaphor for communication to a larger audience and across scientific disciplines, rather than a decision-making tool.¹¹⁴

Still, even if viewed as a policy-tool, or as a communicative metaphor, there seems to be a mounting interest in ES both within academia and political policy. The earlier mentioned

¹⁰⁹ de Groot and Braat, “The contributions of the ecosystem services”, 255. Schröter et al., “The Ecosystem Service Concept”, 7.

¹¹⁰ Schröter et al., “The Ecosystem Service Concept”, 8.

¹¹¹ NOU 2013:10, *Naturens goder*, 9-11.

¹¹² For examples of contemporary use of ES in the Norwegian context see:

Faglig forum for norske havområder, *Økosystemtjenester - grunnlaget for verdiskaping*, (2018). Skre, “Ecosystem services in Norway”, (2017). Kvalvik et al., “Introducing the ecosystem services concept”, (2020).

¹¹³ de Groot and Braat, “The contributions of the ecosystem services”, 253-255. Schröter et al., “The Ecosystem Service Concept”, 7-8.

¹¹⁴ Ainscough et al., “Navigating pluralism”, 7.

See also: Billé et al., “Valuation without action?”, (2012). Primmer et al., “An Empirical Analysis of Institutional Demand”, (2018). Saarikoski et al., “Institutional challenges in putting ecosystem service knowledge in practice”, (2018). Stephenson and Shabman, “Does ecosystem valuation contribute to ecosystem decision making?”, (2019).

Atlas of Ecosystem Services was released in 2019, as a transdisciplinary effort to collect current knowledge on ES and their related drivers and risks.¹¹⁵ In contemporary policy use, Clive Spash notes that the ES concept features heavily in the final 2021 *Dasgupta Review*, a study on the economics of biodiversity commissioned in 2019 by the UK government administration.¹¹⁶

A complete genealogical investigation of ES is outside the scope of this thesis but could be clarifying with regards to the manifest concept of ES and what discourses have shaped it. The point here though, has been to note the development, impact, and current interest in ES. The various developmental stages of the concept from being coined by ecologist to being mainstreamed by the MA, and then further modified and revised by TEEB, makes ES definitionally fragmented. There are multiple different frameworks, approaches, and actors involved in defining it. As we shall see, many of the popular definitions are largely overlapping, but it is still important to keep in mind that some scholars might have niche or novel definitions outside these popular iterations. Yet, as it seems to be the popular definitions that are commonly employed, this does not seem problematic for the scope of this thesis. In the following section I will be providing a working definition of ES, which I will be employing throughout the rest of the thesis. Taken together with what has been noted here, this makes up a brief overview of the manifest concept.

4.2 Initial definition of the manifest concept of ecosystem services

As a starting point, let us take account of the MA definition of ES, which seems to be the most prevalent and mainstream iteration of the concept. The MA defines ES:

[...] the benefits people obtain from ecosystems. These include *provisioning services* such as food, water, timber, and fiber; *regulating services* that affect climate, floods, disease, wastes, and water quality; *cultural services* that provide recreational, aesthetic, and spiritual benefits; and *supporting services* such as soil formation, photosynthesis, and nutrient cycling.¹¹⁷

It seems that most of the later iterations of ES, such as the one found in TEEB, operate with a similar definition, referring directly to the MA.¹¹⁸ Yet, as Stephen Muddiman notes, the

¹¹⁵ Schröter et al., “Preface”, vii.

¹¹⁶ Spash, “The Dasgupta Review”, 1, 3, 7.

¹¹⁷ MA, *Ecosystems and Human Well-Being: Volume 1*, vii.

¹¹⁸ TEEB, *Mainstreaming the Economics of Nature*, 7.

TEEB initiative was aimed directly at developing a method for economic quantification of ES, something which was not directly present in the MA.¹¹⁹ Fittingly, TEEB adds economic terms to its definition, explaining ES as: “[...] flows of value to human societies as a result of the state and quantity of natural capital.”¹²⁰ According to TEEB, these flows “[...] contribute to human well-being [...]”¹²¹ For the time being, I will be assuming that although this is evidently a more economic language, it is analogous to the MA definition.

On the technical side of these definitions, de Groot and Braat argue that TEEB's definition does make a more detailed distinction between ‘services’ and ‘benefits’.¹²² In their text though, they do not further explicate this argument. My own reading of this claim is that the MA directly defines ES as benefits. In this definition the services which ecosystems provide are implied to be identical to the benefits we as humans obtain from them. Thus, the MA seems to be implying that ES are directly identical to ‘human benefits’. What I believe that de Groot and Braat are arguing is that TEEB, in focusing on ‘flows of value’ rather than benefits, does not imply the same strict relation of identity. In this definition, ES are general flows of value, which are not themselves directly beneficial to humans. Rather, the flows only contribute to well-being. If we regard ‘contributions to well-being’ as analogous to ‘benefits’, which I do not think is a controversial reading in this context, then it seems that the TEEB definition to some extent decouples ‘services’ from ‘benefits’.

Here ES are identical to beneficial flows of value, but they are not one-to-one identical with the benefits themselves. Thus, there is no direct implication of identity between services and benefits as in the MA. This might seem like splitting hairs, but this difference is important. In the MA definition, ES must themselves be beneficial, which might lead us to quite a strict taxonomy of what counts as ES. In the TEEB definition, on the other hand, ES need not be directly beneficial, but could be indirectly contributing to well-being, this allows for a broader taxonomy. De Groot and Braat argue, in line with this, that TEEB effectively adds to the MA definition that the manner services can be beneficial to persons might be multiple or indirect, something which they hold is not necessarily explicit or evident in the initial MA definition.¹²³ As such, even if the MA seems to be a popular definition, the TEEB definition has some merits in broadening the taxonomical scope of what counts as an ES.

¹¹⁹ Muddiman, *Ecosystem Services*, 34. TEEB, *Mainstreaming the Economics of Nature*, 3.

¹²⁰ TEEB, *Mainstreaming the Economics of Nature*, 7.

¹²¹ *ibid.*

¹²² de Groot and Braat, “The contributions of the ecosystem services”, 244.

¹²³ *ibid.*

In line with this reasoning, TEEB and the MA differ slightly in their practical taxonomy of ES. As noted earlier, the MA classifies four main categories of ES: provisioning, regulating, cultural and supporting services.¹²⁴ TEEB, on the other hand, omit ‘supporting services’ in favour of ‘habitat services’, e.g., services that ecosystems provide for the maintenance of life cycles of migratory species and maintaining gene-pool diversity.¹²⁵ Yet, services which are defined as supporting ones by the MA, like nutrient cycling, do still feature in TEEB reports.¹²⁶ In the 2nd annex of the TEEB synthesis report, habitat and supporting services are grouped together as a category of ES.¹²⁷ Yet, the technical differences between various ES typologies is not what is interesting here. Even though there are some nuances in the scope of ES in the MA and TEEB definitions, they are practically employed in much the same way, and which very similar taxonomies. De Groot and Braat also argue that the MA, TEEB, and newer typologies like CICES (Common International Classification of Ecosystem Services, see www.cices.eu), in fact build on much of the same definitions, typological nuances aside.¹²⁸

For the purposes of this thesis, I will take the modern iteration of ES found in the *Atlas of Ecosystem Services* as emblematic of the manifest concept of ES.¹²⁹ In the *Atlas*, Matthias Schröter et al. define ES briefly as: “[...] the contributions that ecosystems make to human well-being.”¹³⁰ As such, it seems to uphold the more nuanced distinction between ‘services’ and ‘benefits’ from the TEEB definition, while also keeping in line with the standard MA definition overall. This definition does have a less distinct economic terminology than TEEB, omitting reference to ‘flows of value’ or ‘natural capital’, but as in the *Atlas* these terms are partly taken to be implied by in the definition. Schröter et al. note that: “Ecosystems can provide multiple services. These services are *beneficial flows* of energy, matter, and information from ecosystems to society.”¹³¹ Joachim Maes notes in the foreword of the *Atlas* that: “Ecosystems constitute our natural capital. They provide us with the essential ecosystem services [...]”¹³² So for all intents and purposes, I take these economic terms as still being implied by the definition, and how it is described. In relation

¹²⁴ MA, *Ecosystems and Human Well-Being: Volume 1*, vii. Muddiman, *Ecosystem Services*, 37.

¹²⁵ de Groot and Braat, “The contributions of the ecosystem services”, 244. TEEB, *Mainstreaming the Economics of Nature*, 34.

¹²⁶ TEEB, *An Interim Report*, 27.

¹²⁷ TEEB, *Mainstreaming the Economics of Nature*, 34.

¹²⁸ de Groot and Braat, “The contributions of the ecosystem services”, 244-247.

¹²⁹ Schröter et al., “Preface”, vii.

¹³⁰ Schröter et al., “The Risk of Ecosystems and Ecosystem Services”, 4.

¹³¹ Schröter et al., “The Ecosystem Service Concept”, 7. My own emphasis.

¹³² Maes, “Foreword”, v.

to the MA, we might observe that this definition opts for ‘well-being’ rather than ‘benefit’. Though, in the MA the goal of the report is taken explicitly to be to examine how ES influence human well-being, so to an extent these two terms seem to be treated as analogous in much of the literature.¹³³

To summarize, in the following I will mainly be referring to the *Atlas* definition as the basic manifest concept of ES. This means that I take the theoretical definition of ES to be that they are the “[...] contributions that ecosystems make to human well-being.” This is understood as being largely analogous with both the TEEB and MA definition and seems to be representative of the current way ES are fundamentally defined in academia and policymaking. Even ardent critics of ES, like Stephen Muddiman, operate with similar simple definitions.¹³⁴ Before moving on to discussing the problems of the operative concept of ES in depth, I will present the central critiques that have been raised against the concept in general. Understanding these critiques provides a jumping off point and an important backdrop for the discussion going forward.

4.3 Current criticism and positioning of the thesis

Even though the concept of ES seems to have become popular, there is still much disagreement and discussion within academia surrounding it. Keith Peterson notes that the concept has come to be criticized by multiple scholarly traditions. In light of this, he highlights three of the main critiques that have been raised in his book *A World Not Made for Us*.¹³⁵ In a more detailed review of current critiques, Schröter et al. identify that there seem to be seven main recurring arguments raised against ES.¹³⁶ As most things in life though, this thesis has a limited duration and so choices must be made as to what to engage with. This thesis will mainly be concerned with critiques raised over the normative value judgements made when valuing ES and should be seen as a contribution to the critiques based on environmental ethics and critical economic concerns.

Peterson points out that, those looking at ES from the perspective of classical environmental ethics often argue that the concept is a utilitarian and anthropocentric way of framing nature that allows for continued human exploitation of it.¹³⁷ In this tradition, Jax et

¹³³ MA, *Ecosystems and Human Well-Being: Volume 1*, vii.

¹³⁴ Muddiman, *Ecosystem Services*, 3.

¹³⁵ K. Peterson, *A World Not Made for Us*, 130-31.

¹³⁶ Schröter et al., “Ecosystem Services as a Contested Concept”, 514.

¹³⁷ K. Peterson, *A World Not Made for Us*, 131.

al. note that some scholars argue that because ES focuses explicitly on instrumental values it compromises alternative ethical positions that are not based on utilitarianism.¹³⁸ As many proponents of classical environmental ethics argue that we should value nature regardless of any instrumental value it might have for us as humans this seems decidedly problematic. Some scholars in this vein, such as McCauley, draw a clear distinction between ES as an economic perspective, and an ‘ethical perspective’ based on nature having inherent value.¹³⁹ Thus, this critique fundamentally seems to argue that the concept of ES is unethical. As Schröter et al. note, many of these critiques argue that ES has an anthropocentric focus which excludes the intrinsic value of nature, and that the concept maintains an exploitative relationship between humans and nature.¹⁴⁰

In addition to the environmental ethical critique, social scientific political ecologists have argued that ES allows for an extension of neoliberal commodification.¹⁴¹ In this vein, both Morgan Robertson and Noel Castree argue that ES is an example of how economics can create artificial markets for environmental externalities, which might earlier have been regarded as non-commodities.¹⁴² Similar arguments, holding that ES is a form of commodification, have also been forwarded by scholars in classical environmental ethics. For example, Jax et al. connect the earlier mentioned environmental ethical positions to similar arguments aimed at the commodification of ES.¹⁴³ Schröter et al. also note more general critiques against economics which can be related to the ones mentioned here. These argue that economic valuation and associated methods, which often involved in ES assessments, and might themselves be problematic.¹⁴⁴

Evidently, the last critique, about concerns with economics, seems to be the one most concerned with the operative concept of ES. The classical environmental ethical issues raised here, could be argued to be aimed at the manifest concept of ES – criticising that ES is defined as ‘benefits’, which might be understood as a utilitarian concept, and exclusively having this ‘for humans’. At the same time, I believe that these issues are also related to the operative concept, I will argue that neoclassical methods prescribe certain utilitarian ideas. Contrary to this, by basing ES assessment on axiological ethical assumptions of value, we

¹³⁸ Jax et al., “Ecosystem Services and Ethics”, 261-62.

¹³⁹ McCauley, “Selling out on nature”, 27-28.

¹⁴⁰ Schröter et al., “Ecosystem Services as a Contested Concept”, 515.

¹⁴¹ Peterson, *A World Not Made for Us*, 131.

¹⁴² Castree, “Commodifying what nature?”, 285-86. Robertson, “The neoliberalization of ecosystem services”, 364-65.

¹⁴³ Jax et al., “Ecosystem Services and Ethics”, 264.

¹⁴⁴ Schröter et al., “Ecosystem Services as a Contested Concept”, 516-17.

might assess these on a basis which does not exclude non-utilitarian values. Regarding the critique that ES assumes an anthropocentric view, I will be granting this. My position in this thesis is one of weak anthropocentrism. What this entail, and why I posit this view will be expounded upon in the next section. Before moving on, though, it might be of interest to briefly note some of the critiques which will not directly be relevant for the arguments and discussions I will be presenting.

Peterson argues that ecologists have argued that the concept of ES only makes use of a narrow part of ecological thinking, blinding us to the complexity of ecological science.¹⁴⁵ For example, Norgaard argues that ES might be useful as a metaphor for human dependence on ecosystems. Yet, if observed from an ecological perspective, the concept is lacking if it is used as a comprehensive scientific and decision-making framework. Norgaard argues that ES is based on a stock-flow model, but that ecology utilizes multiple models aside from this in trying to understand the complexity of natural systems.¹⁴⁶ Schröter et al. add that ecologists also have raised concerns that the ES concept conflicts with the idea of biodiversity, and that any supposed connection between ES and biodiversity is empirically weak.¹⁴⁷ Regarding this, as I mentioned in section 2.1, I take ES to be a normative concept. While informed by ecological science, it is not intended to inform us directly, or model, how ecosystems work, biologically or ecologically. Rather, it is a normative concept employed for policymaking, political action, environmental management, and so forth. While I believe that ecological insights should be underscored as highly important in this employment, I will in this thesis mainly be focusing on the economic context in which shapes this employment. Because of this, I will be setting the direct ecological critique of ES aside.

Lastly, Schröter et al. note two additional critiques that do not correlate to the ones described by Peterson. The first of these holds that the concept of ES is largely defined in a way that is impractical and vague. The second, that the concept implies overly optimistic effects of ES, which might give rise to the concept having normative implications.¹⁴⁸ As I hold ES to be a normative concept, I do not find the second critique problematic. Regarding the first, on vagueness, as mentioned earlier such a critique is aimed towards the manifest concept and does not necessarily directly confront the structural context which shapes the operative. As such, I will also be setting this critique aside. Yet, while I will not be discussing

¹⁴⁵ K. Peterson, *A World Not Made for Us*, 131.

¹⁴⁶ Norgaard, "Ecosystem services", 1219-20.

¹⁴⁷ Schröter et al., "Ecosystem Services as a Contested Concept", 516.

¹⁴⁸ *ibid.*, 517-18.

this more in this thesis, I want to point out that it still might be a legitimate charge against the concept of ES.

4.3.1 A note on anthropocentrism

Before ending this chapter, I will note one more comment regarding the scope of this thesis. In the following I will be assuming an anthropocentric view. For many environmental scholars this might be contentious. Within environmental philosophy there is much debate over anthropocentrism, and viable alternatives to it. Going into the details of this debate is outside the scope of this thesis.¹⁴⁹ Yet, I believe it will be clarifying for the reader that I expound on why I seek to maintain an anthropocentric view, so that my position becomes a little clearer.

I hold that a non-anthropocentric, or posthumanist, position has some important caveats. As Arne Johan Vetlesen notes in his discussion on posthumanism, philosophers who adopt such stances deny that we can view “[...] the human point of view, or human agency, as the privileged vantage point.”¹⁵⁰ Vetlesen and human ecologist Alf Hornborg, both make the point that posthumanist positions have a ‘flat ontology’.¹⁵¹ This term refers to the point that such views afford every biotic entity, and even abiotic ones, agency. As an example, Vetlesen notes this in the case of the view of Bruno Latour:

“Flat ontology” ends up painting a picture where all entities are grey, where one and the same portrait of agency-related capacities is brought to bear on virtually everything that Latour casts his eyes on, regardless of their differences.¹⁵²

This view could be argued to obfuscate qualities in humans which makes us different from other creatures.¹⁵³ Hornborg argues that this position undermines the analytical distinction between subjects and objects.¹⁵⁴ According to Hornborg, there are two main problems with this. On one hand, he holds that this distinction is analytically valuable – subjects and objects

¹⁴⁹ For an overview of this debate see Thompson’s chapter “Anthropocentrism: Humanity as Peril and Promise” in *The Oxford Handbook of Environmental Ethics* (2017), and Kopnina et al. “Anthropocentrism: More than Just a Misunderstood Problem” (2018).

¹⁵⁰ Vetlesen, *Cosmologies of the Anthropocene*, 125.

¹⁵¹ See Vetlesen’s chapter “Agency, posthumanist style” in *Cosmologies of the Anthropocene* (pp. 208-60) and Hornborg’s chapter “Subjects versus Objects” in *Nature, Society and Justice*. (pp. 177-92).

¹⁵² Vetlesen, *Cosmologies of the Anthropocene*, 17.

¹⁵³ *ibid.*

¹⁵⁴ Hornborg, *Nature, Society and Justice*, 177-82.

belong to fundamentally different categories of things.¹⁵⁵ On the other hand, such a position undermines the possibility for political critique and fails to recognize the power relations between humans and nonhumans.¹⁵⁶ According to Hornborg, by putting nonhumans on par with humans in terms of agency, posthumanist positions to some extent deny the unique accountability and responsibility of human subjects when it comes to how we treat nonhuman Others.¹⁵⁷ Because of these problems, I will follow Hornborg who, drawing on Clive Hamilton, advocates for ‘humble anthropocentrism’, a position that recognizes the unique qualities that separate humans from other kinds of life, while also recognizing that we have certain responsibilities regarding our power over other beings.¹⁵⁸

In relation to the axiological ethical theory of Peterson, such a view is compatible. Peterson argues that his position connects a humble, or ‘weak’, anthropocentrism with broader non-anthropocentric ideas:

My view may resemble Norton’s weak anthropocentrism because it does not discount human prudential interests in environmental decision-making; it also embraces Rolston’s ecocentrism because it acknowledges the self-valuing and value-producing capacities of living and nonliving systems [...].¹⁵⁹

The main idea here is that while considering goods values might be conatively extended to all living beings, moral valuation is mostly a human capability. As such, Peterson excludes most non-humans from the status of moral agent.¹⁶⁰ Holding a humble anthropocentric view, though, this need not be problematic. Peterson argues, following Val Plumwood, that we should be open to the existence of a plurality of agencies.¹⁶¹ As such, moral agency, is just one of multiple types of agencies. For example, we might grant that a badger has some goods value it responds to, a ‘good of its own’. Peterson rejects that the properties, or capabilities, the badger has should not be taken to be determinant in how we should act towards it. Therefore, even if we do not count the badger as a moral agent, we do not take away the possibility for us to morally value the badger.¹⁶² As Peterson puts it: “We can morally

¹⁵⁵ Hornborg, *Nature, Society and Justice*, 182-93.

¹⁵⁶ *ibid.*, 177-79.

¹⁵⁷ *ibid.*, 205-6.

¹⁵⁸ *ibid.*, 44-45.

¹⁵⁹ K. Peterson, *A World Not Made for Us*, 115.

¹⁶⁰ *ibid.*

¹⁶¹ *ibid.*

¹⁶² *ibid.*

consider all things, but not all things in the world morally consider.”¹⁶³ The point here is that from Peterson’s position we might defend a humble anthropocentric view, while also holding that non-humans have moral import. Regardless of this theoretical basis though, I hope the discussions in the following will be of interest, even to those opposed to anthropocentrism.

¹⁶³ K. Peterson, *A World Not Made for Us*, 115.

5. On services and productivity

This section begins the discussion of ES by first considering how the concept of ‘services’ is understood in economics. After this, I move on to consider how this understanding leads to inconsistencies and problems when valuing ES. The focus of the discussion here is Keith Peterson’s main critique of ES, which is based on Marx’ distinction between use-value and exchange-value.

5.1 Orientation towards services

As mentioned earlier, one of the main questions of interest for Peterson’s axiological ethics is how we prioritize or are oriented towards different values.¹⁶⁴ When considering what kind of value orientation economists are proceeding from when employing ES, it seems relevant to ask: What does it mean for our orientation towards environmental goods values that they are defined as ‘services’?

Peterson provides a preliminary answer to this question, arguing that ES implies some semblance of intention: “[...] ‘services’ connote both some attention to processuality as well as a modicum of intentional recognition [...]”¹⁶⁵ To Peterson, this amounts to the concept of ES affording ecosystems a diffuse form of agency. Yet, this is only a specific degree of agency, one which facilitates obedience, predictability, and expedient performance – the agency of servants.¹⁶⁶ Peterson argues in this regard that we seldom acknowledge, or give moral status, to beings with diffuse agencies.¹⁶⁷ Because of this, we are facilitating an exploitative relationship by employing the concept of ES, as long as we do not additionally connect it to a conception where diffuse agencies matter morally. As Peterson notes, though, an ES assessment employing solely a traditional economic view will not be capable of such a consideration, as it is chiefly focused on quantifiable measures of ES and does not consider the ethical foundations for valuation.¹⁶⁸

The argument that the concept of ES implies that ecosystems have the agency of servants is not further substantiated by Peterson. While seemingly intuitive, I hold that this is making a conceptual mistake. The issue I take with this is that Peterson does not clarify how services are defined or conceptualized. If we take him to be using with a common-sense

¹⁶⁴ K. Peterson, *A World Not Made for Us*, 118.

¹⁶⁵ K. Peterson, “Ecosystem Services”, 2.

¹⁶⁶ *ibid.*, 5-6.

¹⁶⁷ *ibid.*, 7.

¹⁶⁸ *ibid.*

definition, I hold that his criticism faces two problems. On one hand, a service might be provided by a service provider just as well as by a servant. We could argue that being a service provider does not imply is the same relation of exploitation as being a servant does. On the other hand, and what I hold to be a greater problem, when ES are employed based on economic thought, it is not clear that it is a common-sense understanding of ‘services’ that is being employed. I will argue that contrary to this, economics in general operate with a very specific idea of what characterises a service.

5.2 What economists talk about when they talk about services

If you open just about any introduction to economics textbook, you will quickly be met with the two concepts ‘goods’ and ‘services’. Economist Ron P. Baiman points out, that these concepts are treated as fundamental, especially within neoclassical thought.¹⁶⁹ Evidently, ES seem to be a type of service, at least definitionally. As ecological economists Herman Daly and Joshua Farley point out, ES are distinct from goods derived from ecosystems, such as tangible natural resources.¹⁷⁰

On the face of it, defining goods and services seems straight-forward. One basic definition can be taken from McEachern’s neoclassical textbook *Macroeconomics: A Contemporary Introduction*, where goods are defined as tangible products, and services are defined as intangible products or activities.¹⁷¹ Economist T. Hill points out that this tangible/intangible distinction seems to be the most common definition found within economic theory.¹⁷² Even non-neoclassical economists often operate with similar definitions, for example, thermoeconomists Hall and Klitgaard define goods as material while services are immaterial.¹⁷³ This seems to be an uncontroversial basic definition of what services are. Yet, as is pointed out in *The New Palgrave Dictionary of Economics*:

¹⁶⁹ Baiman, *The Morality of Radical Economics*, 65.

¹⁷⁰ Daly and Farley, *Ecological Economics*, 17.

¹⁷¹ McEachern, *Macroeconomics*, 3.

As Ole Bjerg points out in *Parallax of Growth* the basis for neoclassical *macroeconomics* is neoclassical *microeconomics*. (pp. 101-102) Although there are differences, neoclassical *microeconomics* focuses on individual behaviour while *macroeconomics* focuses on aggregates, they are based on the same theoretical assumptions. As such, I will be treating neoclassical micro- and *macroeconomics* as being largely congruent with regards to their theoretical basis.

For more on the theory of neoclassical *macroeconomics*, and its relation to *microeconomics*, see the discussion in the chapter “Aggregate Supply and Demand in the Macroeconomy: An Ill-Defined and Misapplied Fiction” in Baiman, *The Morality of Radical Economics*, 139-171.

¹⁷² T. Hill, “Tangibles, Intangibles and Services”, 426.

¹⁷³ Hall & Klitgaard, *Energy and the Wealth of Nations*, 8.

In everyday language, we make a clear distinction between goods and services. What is striking is the contrast between the relative simplicity of current usage and the difficulties encountered in defining services within an economic analysis.¹⁷⁴

When it comes to theoretically defining services within economics, beyond the basic textbook definition, we quickly encounter problems. Neoclassical economist T. Hill, one of few to have written explicitly on the definition of services, argues that there is a fundamental problem with the basic definition of goods and services. According to him, these two concepts belong to two distinct logical categories – they are not ‘two sides of the same coin’. Rather, goods and services have different conceptual status, and simply defining services as a form of intangible or immaterial good is what Hill calls ‘nonsense’.¹⁷⁵

According to Hill, goods can fundamentally be understood as transferable objects.¹⁷⁶ There exists both material, tangible, and immaterial, intangible, goods, and these are similar in that they can be transferred between persons.¹⁷⁷ Ownership can be exchanged for both a physical apple and a piece of software, with no physical dimensions. Being transferable in this manner, goods can also be stored in an inventory for later use and/or exchange.¹⁷⁸ Services, on the other hand, cannot be transferred in the same manner. When services are exchanged, ownership does not change. Rather, as Hill argues, when a service is rendered by one economic unit to another it is accompanied by a change in the condition of the person the service is rendered towards, or a change in the condition of a good that they own. Cleaning clothes leads to a change in the condition of the clothes, which are a good owned by someone. Performing surgery leads to a change in the condition of the patient.¹⁷⁹ It is because of this difference in exchange that goods and services constitute concepts belonging to different logical categories. As Hill notes: “Services cannot be put into stock because a stock of changes is a contradiction in terms.”¹⁸⁰ The point here, according to Hill, is that we can

¹⁷⁴ Petit, “Services”.

¹⁷⁵ T. Hill, “On Goods and Services”, 318.

¹⁷⁶ *ibid.*, 317-19.

¹⁷⁷ T. Hill notes ownership need not be legal or formal property rights in this regard but can be taken to be a general right to make use of or dispose of an object within certain constraints. See T. Hill, “On Goods and Services”, 317.

¹⁷⁸ T. Hill, “On Goods and Services”, 319-20.

¹⁷⁹ *ibid.*, 318.

¹⁸⁰ *ibid.*, 319.

logically distinguish between flow concepts, such as services, and stock concepts, like goods.¹⁸¹

Some might contend that while this distinction between flow and stock might apply to economic goods and services, it might not hold that it applies to ES. Yet, as noted earlier, definitionally ES are taken to be ‘beneficial flows’ or ‘flows of value’.¹⁸² In this regard, it would certainly seem logically improbable to hold that we could store the ES of crop pollination or soil erosion for later use. As such, ES would seem to at least belong to the same logical category of a flow which economic services are part of. From the characterization as a flow there follows some interesting characteristics, which ultimately have important consequences for how neoclassical economics relates to services in general and to ES specifically.

From a Marxist view, Fiona Tregenna points out, that the production of a service in most cases cannot be separated from its consumption, either temporally or often spatially.¹⁸³ Hill notes the same point.¹⁸⁴ As flows logically cannot be stored, this aspect seems to follow quite rationally from the definition. Pollination cannot be stored, so the service is consumed at whatever point in time and space that pollination happens to occur. Hill notes on this point that:

The consumption of the service is the change which the producer effects in the condition of the consumer's good so that the production and consumption of the service obviously cannot be separated from each other.¹⁸⁵

It should be noted that this only applies to the production and consumption of the service. The direct benefits from the service might be experienced at a later point in time or stretch out beyond the time of production. For example, a farmer might not experience the benefits of crop pollination until he harvests the relevant crop. The change in the condition of the crops, though, is applied when pollination happens, and not when experienced as beneficial by the farmer. Hill also highlights, that this simultaneous production and consumption implies that services are largely relational:

¹⁸¹ T. Hill, “Tangibles, Intangibles and Services”, 436.

¹⁸² Note, this is a point of conceptual convergence. Due to services being conceptually defined as flows, I hold that the *Atlas* and MA definitions of ES, and the more economic minded wording of TEEB, are more or less analogous.

¹⁸³ Tregenna, “What Does the ‘Services Sector’ Mean in Marxian Terms?”, 283, 290.

¹⁸⁴ T. Hill, “On Goods and Services”, 320.

¹⁸⁵ *ibid.*

Services involve *relationships* between producers and consumers. There cannot be a producer without a consumer. A service must be provided *to* another economic unit. The idea of one unit acting for the benefit of another is inherent in the concept of a service as understood both in ordinary speech and economics.¹⁸⁶

Producing a good, which can be stored, does not require a buyer beforehand, as the good can be stored until a potential buyer appears in the future. In contrast to this, for services to meaningfully provide value, the consumer, who is changed or owned the good who is changed, must exist for the service to be produced. Thus, ES, in being beneficial to humans, definitionally require the existence of both an ecosystem producing the service, and humans benefiting from it.

5.2.1 Initial conundrum of economic services

By maintaining that services are logically distinct from goods, I hold that we can reveal some deeper problems with how neoclassical economics relates to value. In fact, the concept of services presents quite a conundrum for capitalism and neoclassical economics. Because they constitute flows, and not stocks, it is problematic for neoclassical economic methods to properly value service production. For example, Markus Peterson et al.¹⁸⁷ argue that commodification of ES hides the actual processes and entities that perform the ES. They argue that with this concept focus is shifted away from the production process of the services to what the services provide. Because of this the ecosystems, as a form of worker, is made invisible.¹⁸⁸ Keith Peterson, expounds on this critique, arguing that through economic valuation the actual work gone into production of a commodity is overshadowed by its market price – effectively trivializing the value of the ecosystem as a labourer.¹⁸⁹

Similarly, human geographers have pointed out the same arguments in relation to the services provided by domestic work.¹⁹⁰ Looking at domestic worker rights in Indonesia, David Jordhus-Lier notes these workers are often not seen as workers in the traditional

¹⁸⁶ T. Hill, “Tangibles, Intangibles and Services”, 441. Original emphasis.

¹⁸⁷ I will be referring to Markus Peterson as M. Peterson later so not to confuse him with Keith Peterson. When I refer to Peterson without an initial this should be taken to be Keith Peterson.

¹⁸⁸ M. Peterson et al., “Obscuring Ecosystem Function”, 115-18.

¹⁸⁹ K. Peterson, *A World Not Made for Us*, 133.

¹⁹⁰ In addition to Jordhus-Lier, see Yeoh et al. “Migrant Female Domestic Workers”, Weix “Inside the home and outside the family”, and Gastaldi, *Domestic Workers Organisation as a Tool to Reduce Social Exclusion*.

sense.¹⁹¹ Jordhus-Lier, echoing similar sentiments in other geographical work, notes that “[...] domestic workers are still seen as making limited contributions to society, because their work is not recognised as producing economic value.”¹⁹²

I hold that the problem arising here is that neoclassical economics presupposes a specific orientation towards goods values. This makes this economic tradition exclude the value of flow concepts like services. This orientation is one that is primarily orientated towards goods, and as such they must resort to using proxies that mimic goods to ascribe value to services. This argument is based on two related Marxist critiques of capitalism, which are the topics of the next sections of this chapter. Firstly, Marx draws a distinction between use-values and exchange-values.¹⁹³ Peterson uses this distinction to argue that the discourse surrounding ES prepares ecosystems for commodification.¹⁹⁴ I contend this position with another Marxist distinction, namely the difference between productive and unproductive labour. I argue that by relating the productive/unproductive to services, ES are not prepared for commodification as Peterson states, but rather that neoclassical economic methods necessarily *must* resort to commodification to value ES because ES have no economic value in neoclassical economic thought. Let us first take account of the use-value/exchange-value distinction.

5.2 Use-value and exchange-value

Dooley notes that the distinction between use-value and exchange-value can be traced back to Aristotle’s theory of value. Aristotle draws a distinction between the limited value a good has in use or when consumed, and the distinct value it can have when exchanged.¹⁹⁵ Adam Smith goes on to further conceptualize this distinction as ‘value in use’, the utility of the good, and ‘value in exchange’, the monetary value of the good or the equivalence it has to other goods in barter.¹⁹⁶ Dooley exemplifies this as: “The household buys shoes for their use value; the retailer sells shoes for their exchange value.”¹⁹⁷ While Smith might simply seem to be making an analytical distinction, Marx would later expound on the difference between use-

¹⁹¹ Jordhus-Lier, “Claiming industrial citizenship”, 246-47.

¹⁹² *ibid.*, 247.

¹⁹³ Marx, *Capital*, 125-27.

¹⁹⁴ K. Peterson, *A World Not Made for Us*, 127-30.

¹⁹⁵ Dooley, *Labour Theory of Value*, 5-6.

¹⁹⁶ *ibid.*, 6.

¹⁹⁷ *ibid.*

value and exchange-value as central critical concepts in his critique of capitalism.¹⁹⁸ It is this Marxist iteration of the distinction which Peterson chiefly refers to in critiquing ES.¹⁹⁹

In *Capital*, Marx draws a clear distinction between the instrumental utility value of a given object – its use-value – and the value that an object has when exchanged – its exchange-value.²⁰⁰ In Peterson’s axiological scheme, these two values are both types of goods values, with specific qualities in being good for something else.²⁰¹ *Use-values* are value qualities directly tied to the material usefulness of objects.²⁰² A hammer, for example, has a use-value in being a tool that hammers down nails. This form of value is not necessarily exhaustive of the value qualities of an object, for example, the hammer might carry multiple forms of use-value. Aside from hammering a nail, it might have multiple uses – as a rhythmic percussion instrument, to open paint cans, to crush nuts or ice, and so on. As Peterson puts it: “[...] use-values are ‘relational properties’ but never exhaust what an object might have in store for us.”²⁰³ It should be noted here, that for something to have use-value it does not necessarily need to be a tangible physical object. Marx does note that, for example, services can produce use-values.²⁰⁴ In *Capital* though Marx notes that use-values are “[...] conditioned by the physical properties of the commodity, and has no existence apart from the latter.”²⁰⁵ This might appear contradictory, but I hold that we can read this as asserting that services must have some physical properties associated with them. As Hill noted, services lead to changes in persons or goods, and as such they logically could be said to have material physical effects. Thus, the benefit gained is in a sense material. Marxist economist Paul Burkett points out, in line with such a reading, that we can broadly understand use-value as referring to: “[...] anything that satisfies human needs [...].”²⁰⁶ Based on these considerations I hold use-value to be a qualitative, but instrumental category of value, which is conditioned by the material constitution *or* material relations and effects of an object.

Exchange-value, on the other hand, is a measure of the quantitative value of a good, rather than the specific instrumental quality. In a way, it is a quantitative contrast to use-

¹⁹⁸ Dooley, *Labour Theory of Value*, 165-74.

¹⁹⁹ K. Peterson, *A World Not Made for Us*, 127-28.

²⁰⁰ Marx, *Capital*, 125-27.

²⁰¹ K. Peterson, *A World Not Made for Us*, 108.

²⁰² *ibid.*

²⁰³ *ibid.*, 128.

²⁰⁴ Marx, *Theories of Surplus Value*, 1325-28.

²⁰⁵ Marx, *Capital*, 126.

²⁰⁶ Burkett, *Marxism and Ecological Economics*, 28.

values qualitative.²⁰⁷ Peterson posits that this is a goods value which has the specific value quality of measuring quantities.²⁰⁸ Marx notes that exchange-value can be understood as the quantitative relation, the proportion, by which a given use-value can be exchanged for another.²⁰⁹ Burkett points out that according to Marx exchange-value value does not directly reflect use-value in a capitalist system, but rather reflects the social cost of production of a given object.²¹⁰ As Peterson thus argues, this value stems from the production and consumption process of material goods, rather than their constitution.²¹¹ To put it pointedly, it is not what the good is able to ‘do for us’ that determines exchange-value, but its cost of production. As both Peterson and Burkett note, use-value and exchange-value are understood by Marx as fundamentally odds with one another. They are incommensurable value categories, as these two terms designate completely different orders of goods value.²¹²

5.2.1 Exchange-value and propertarianism

What Marx’ use of the use/exchange distinction highlights, as opposed to other iterations of the distinction, is how it relates to capitalism. Burkett notes, that at its core exchange-value “[...] is the specific social representation of use-value under capitalism, a system in which use-values are generally exchanged as commodities, that is, as exchange-values.”²¹³ In extension of this, Peterson argues that under capitalism exchange-value not only designates the main way in which use-values are exchanged, but that exchange-values are also prioritized ahead of use-value.²¹⁴ Thus, capitalism facilitates an orientation towards values, which makes us habitually focus on exchange-values to the detriment of other goods values. Here, Peterson draws on the critical work of Joel Kovel and John P. Clark, who have both argued, in different ways, that the evaluative processes that prevail in capitalistic societies are shaped by a context of commodity fetishism and growth ideology.²¹⁵ This context is what facilitates this pattern of value prioritization. According to Peterson’s reading of Kovel and

²⁰⁷ K. Peterson, *A World Not Made for Us*, 128.

²⁰⁸ *ibid.*

²⁰⁹ Marx, *Capital*, 126-27.

²¹⁰ Burkett, *Marxism and Ecological Economics*, 28.

²¹¹ K. Peterson, *A World Not Made for Us*, 128.

²¹² K. Peterson, *A World Not Made for Us*, 128. Burkett, *Marxism and Ecological Economics*, 28.

²¹³ Burkett, *Marxism and Ecological Economics*, 28.

²¹⁴ K. Peterson, *A World Not Made for Us*, 128. Burkett, *Marxism and Ecological Economics*, 28.

²¹⁵ K. Peterson, *A World Not Made for Us*, 128-29.

See also “The culprit” which is Part 1 of Kovel’s *The Enemy of Nature* (2007).

Clark, this social context is supported and reproduced by our societal structures and institutions.²¹⁶

Peterson argues that one of the main societal structures conditioning this pattern of prioritizing is what can be called ‘propertarian institutions and practices’. With this Peterson is referring to the modern Western political and economic conception of property, which he argues shapes how we relate to and treat non-human others.²¹⁷ In this tradition, according to Peterson, things and non-humans are often defined as property, while human beings are not, which justifies human exploitation of them.²¹⁸ Peterson holds that this ‘propertarianism’ amounts to the prioritization of property-as-value ahead of other types of value.²¹⁹

The argument made here might be a bit vague, as Peterson does not fully explain this position, or what property-as-value entails. I hold that we can take property-as-value as an alternate conception of exchange-value. This is because exchange is logically dependent upon property, and thus value in exchange can only exist if property exists. In Peterson’s terms, I would argue that exchange-value is axiologically dependent upon property, as property is presupposed by the act of exchange.²²⁰ Philosopher and economist Ole Bjerg notes this relation in his *Parallax of Growth*:

In order for a market to function, there has to be a seller and a buyer. This means that someone has to own the object in order for it to be offered for sale on the market. If no one owns an object, it can be neither sold or bought. The object cannot become subject to the law of equivalent exchange. This is why the sun does not have a price. No one owns the sun and therefore no one is able to sell it.²²¹

According to this we might assert that capitalism orients us towards values in way where we prioritize exchange-values ahead of use-values. As exchange-values are axiologically

²¹⁶ K. Peterson, *A World Not Made for Us*, 128-29.

²¹⁷ *ibid.*, 80-81, 129-30.

²¹⁸ *ibid.*

Note that these propertarian institutions are historically contingent and have evolved over time. As Peterson notes, people are not in recent times considered property. Slavery might be an example of how the definition of what and what is not property has changed.

²¹⁹ K. Peterson, *A World Not Made for Us*, 130.

²²⁰ Dependence relations not only hold between goods and moral values, but also interally between moral values, see K. Peterson, *A World Not Made for Us*, 108.

²²¹ Bjerg, *Parallax of Growth*, 103.

Exchange could also be argued to be dependent upon property in the sense that private property facilitates scarcity. If there is an abundance of apple trees in a common area, then there might not be any need to exchange for apples. Yet, if these trees were private property, supply can be restricted and thus the apples might become scarce, leading to the need for exchange. While persuasive, I take the argument that property is logically necessary for exchange to be stronger, and sufficient for the current discussion.

dependent upon property, it would thus seem to follow that capitalism orients us towards prioritizing property as well.

5.2.2 Ecosystem services and the prioritization of exchange-values

According to Peterson, the pattern of prioritizing exchange-value is problematic in the case of ES because when considering these “[...] exchange-value floats disconnected from real natural processes [...].”²²² Peterson highlights that when ES are attributed quantitative economic values, this might obscure the actual functions of these services – we become more aware of the exchange-value of the service than what it provides. It seems that what Peterson is getting at here is that when exchange-value is ascribed to ES, these exchange-values are disconnected from the use-value of the service.

Peterson argues that the discourse surrounding ES commodifies nature, because monetary valuation methods, which are prevalent in the discourse, ‘prepares’ nature for being understood as a commodity.²²³ In holding this, he refers to Gómez-Baggethun et al., who note that it is not realistic to posit that monetary valuation can be used as a method, without acting as a driver of commodification.²²⁴ *Commodification* is usually understood as being the process of making qualitatively different things quantitatively uniform and sellable by ascribing them a commensurable unit of measurement, usually in the form of a monetary value.²²⁵ Money can be taken to be a form of exchange-value. In the case of commodification, as described here, it could be argued that the monetary exchange-value is disconnected from use-value, as exchange-value is arbitrarily ascribed.

This process of commodification is the crux of the matter according to Peterson. He grants that initially ES do show us that humans are dependent upon their ecosystems. But Peterson points out that through the commodification of ES we simultaneously deny this dependence. The reason for this is because we are led to prioritize the economic value of ES, instead of the use-value they have for us.²²⁶ As such, Peterson argues that commodification effectively backgrounds the fact that humans are dependent upon local ecosystems.²²⁷ As

²²² K. Peterson, *A World Not Made for Us*, 134.

²²³ *ibid.*, 132.

²²⁴ *ibid.*

²²⁵ Carver, “Commensurating as value making”, 81.

²²⁶ K. Peterson, “Ecosystem Services”, 2-4. K. Peterson, *A World Not Made for Us*, 131-34.

²²⁷ K. Peterson, “Ecosystem Services”, 2-4. K. Peterson, *A World Not Made for Us*, 131-34.

noted earlier, processes of backgrounding are taken as ethically problematic for Peterson if they entail denying dependence relations. Petersons overarching claim is thus that:

[...] ecosystem services discourse perpetuates exploitative relations between human communities and nonhuman nature because its pattern of systematically prioritizing certain goods over vital and moral values is shaped by propertarian institutions and practices.²²⁸

This evidently seems like a critique that states that the operative concept of ES is problematic, because of the structural context, of propertarianism, which shapes it. The structural context of capitalism leads us to a problematic prioritization of exchange-value and property. Peterson engages with Gómez-Baggethun et al., who argue that even if monetary valuation methods have problems, they might still be of use to us, as long as we do not privilege exchange-values. In doing this, Peterson argues that:

They [Gómez-Baggethun et al.] suggest that if we make a distinction between the use-value of natural processes and their exchange-value (as Kovel also suggested), we would be able to acknowledge the services provided by ecosystems without rendering them exclusively in terms of exchange. They claim that their discursive framing as “services” does not automatically lead to commodification.²²⁹

The problem here, is that it seems Peterson is implying that by defining ES as ‘services’ we are led to commodifying them. Yet, this statement is not substantiated with any reason as to why this would be the case. I would argue that it seems that Peterson here shifts his focus from the structural context of propertarianism as problematic, to considering what it means that we define ES as services. Problematically, though, he does not establish any overt link between these considerations relating to how they shape the operative concept of ES.

I hold that because of this Peterson fails to give a satisfactory reason for *why* the concept of ES inevitably leads us to commodification. He only states that monetary valuation is privileged by the discursive context, and separately, that the framing of ES as services leads to their commodification. He does not give any reasons for either the point that monetary valuation is inevitable when valuing ES, other than that it is a highly common method to us. Neither does he give any reason that framing ES as services necessitates the

²²⁸ K. Peterson, *A World Not Made for Us*, 119.

²²⁹ *ibid.*, 132.

ascription of monetary value. I hold that this leads to Peterson throwing the baby out with the bathwater. His discussion on ES concludes with him stating “[...] that while ES discourse may be well intentioned, given its basic assumptions it is structurally incapable of generating the changes it aspires to create.”²³⁰

In rejecting the ES discourse as whole in this manner, I read this as Peterson rejecting both the manifest and operative concepts of ES. The reason for doing this is because of issues with the structural context that shapes these contexts. As mentioned in Chapter 2.2, I hold that such a rejection ignores the possibility that by addressing the structural context, we could change the operative concept. In addition, such a rejection does not show why the structural context necessarily leads to the described outcome. The following sections of this chapter set out to make a case for how we can understand these missing connections, which I hold that Peterson fails to make. I will be arguing that neoclassical valuation is not able to adequately value ES because of problems with how services have been defined so far. To substantiate this claim, I will move on to discuss the Marxist concepts of productive and unproductive labour.

5.3 Productive and unproductive labour

The productive/unproductive labour distinction was originally made by Adam Smith.²³¹ Dooley points out that according to Smith this distinction can be regarded as the difference between labour which produces things that can be stocked, or augments existing stock, while unproductive labour does not add any value after it has been performed:

Productive labour adds value to physical commodities that survives the period of production. They embody “past labour.” In contrast, the value of unproductive labour vanishes in the instance of its performance.²³²

The main point here, for Smith, is that productive labour is labour that contributes to the accumulation of capital.²³³ Capital, as economists Nitzan and Bichler point out in their work

²³⁰ K. Peterson, *A World Not Made for Us*, 131.

²³¹ Dooley, *Labour Theory of Value*, 24.

²³² *ibid.*

²³³ *ibid.*, 114.

on the concept, is traditionally understood as a stock of resources or assets that can be used for further production.²³⁴

Marx maintains Smith's distinction between productive and unproductive labour, but, as Marxist economists Moraitis and Copley argue, instead of a transhistorical definition that defines productivity in general, he views it as a historical category defining what productivity means within a capitalist society.²³⁵ It is not meant to be an *a priori*, or in some other way necessary, schematic of what form of labour is productive. Rather, it is meant to describe historically specific categories of what counts as productive and unproductive labour in capitalist societies.²³⁶ Marx' own position seems to back this, as he holds that we cannot properly understand capitalist categories by referencing transhistorical categories, which would make a transhistorical definition unfounded.²³⁷

Within Marxist traditions, there is, though, a lot of disagreement over how to properly define the distinction between productive and unproductive labour. In orthodox Marxist interpretations Moraitis and Copley note that one could identify at least seven different definitions.²³⁸ Moraitis and Copley state that most of these definitions fall into the trap of theorizing productive and unproductive labour based on transhistorical general categories.²³⁹ Contrary to such a reading, Moraitis and Copley argue that according to Marx:

[...] the sole criterion that determines the productiveness of labour is not its general social usefulness, but rather its socially determined capacity to offer a 'specific use-value' to the capitalist, namely an unpaid surplus product.²⁴⁰

Thus, only labour which creates surplus value for a capitalist is what can properly be called productive. Expounding on this, Moraitis and Copley argue that in reading Marx' theory of

²³⁴ Nitzan and Bichler, *Capital as Power*, 68.

While much can be said about the definition of capital, I take this to largely be an uncontroversial definition which should suffice for the purposes of the current discussion.

²³⁵ Moraitis and Copley, "Productive and unproductive labour and social form", 94-95.

²³⁶ *ibid.*

²³⁷ *ibid.*

In *Theories of Surplus Value* Marx discusses the productive/unproductive in the Addenda to Part 1, Chapter 12 D. Here productive labour is understood as a providing a specific form of use-value for the capitalist. Marx also notes in *Grundrisse* p. 105 that: "[...] even the most abstract categories, despite their validity - precisely because of their abstractness - for all epochs, are nevertheless, in the specific character of this abstraction, themselves likewise a product of historic relations, and possess their full validity only for and within these relations." As such I hold that Moraitis and Copley present a convincing reading of how to understand the productive/unproductive distinction in Marx' work.

²³⁸ Moraitis and Copley, "Productive and unproductive labour and social form", 93.

²³⁹ *ibid.*, 95.

²⁴⁰ *ibid.*

productive labour, we should understand this as labour that produces exchangeable commodities. This section of their paper is worth quoting in length as it explicates this connection between commodity and productive labour:

[...] exchange-value is the concrete manifestation of value and thus of productive labour. It is insufficient that a certain labour produces useful goods or helps to reproduce the capital relation. The final condition for the categorisation of productive labour is that it becomes crystallised in an exchangeable commodity. This is the link between work performed under capitalism and the world of money, whereby surplus labour is realised as an accumulation of money – the peculiar form that wealth assumes in capitalist society. Otherwise, the product of labour and money face each other as opposing social artefacts with no common language. Unproductive labour, on the other hand, is labour performed under the dominion of capital but whose product does not take the form of a commodity.²⁴¹

This distinction has important impacts on the conceptualization of services that I sketched earlier. In the classical conception, this is the basis from which both Smith and Marx dismissed nearly all services as being forms of unproductive labour.²⁴² The next section will expand on this relation between unproductive labour and services, I will be arguing that in Marx' conception, contrary to Smith, we might still redeem services as being productive.

5.3.1 Restating to the conundrum of the service

As Tregenna points out, both Smith and Marx connected the productive/unproductive distinction to services, yet their views have marked differences.²⁴³ In *Wealth of Nations*, Adam Smith uses services directly as an example of unproductive labour: “[...] services generally perish in the very instant of their performance [...]”²⁴⁴ According to Smith, because of this services leave no trace of value when they expire, and are therefore essentially unproductive.²⁴⁵ Smith expounds further on this view, arguing that a service:

²⁴¹ Moraitis and Copley, “Productive and unproductive labour and social form”, 105.

²⁴² T. Hill, “Tangibles, Intangibles and Services”, 427. T. Hill, “On Goods and Services”, 315-16.

²⁴³ Tregenna, “What Does the ‘Services Sector’ Mean in Marxian Terms?”, 281-87.

²⁴⁴ Smith, *Wealth of Nations*, 330.

²⁴⁵ *ibid.*

[...] does not fix or realize itself in any permanent subject, or vendible commodity, which endures after that labour is past, and for which an equal quantity of labour could afterwards be procured.²⁴⁶

As mentioned earlier, for Smith the crucial point is that productive labour should contribute to capital accumulation. As Hill notes though, this need not be taken to mean that services are useless or unnecessary according to Smith, but rather that they simply do not fulfill the criteria for being ‘productive’.²⁴⁷

On the face of it, Marx maintains the view of services as unproductive labour. He argues that when one purchases a service, one is not exchanging money for capital, but for a particular use-value.²⁴⁸ Marx notes as an example the purchasing of the services of a tailor who transform a piece of cloth into trousers. Note that in this example, the person buying the service already owns the cloth. In this case, money is exchanged for the act of transforming the cloth, and thus into the particular use-value that these trousers have. Marx argues here that because of this, money is not necessarily transformed into capital.²⁴⁹ Here, there is no capitalist extracting surplus-value and there is no commodity being exchanged or produced, only a good being transformed to realize a specific use-value.

Dooley argues that this understanding of services as unproductive is due to Marx and Smith committing to is a ‘materialist fallacy’.²⁵⁰ According to Dooley, both Marx and Smith place an unjustified emphasis on material physical things. This leads to an analytical mistake of equating services with unproductive labour and goods with productive, because goods are more often seen as ‘physical’.²⁵¹ Hill also observes this same problem.²⁵² One could make the case that all goods, both material and immaterial, can be put into stock. Because of this, they logically imply that they have some ‘physical’ attribute connected to them. Even an immaterial good, like a song, needs to have some storable counterpart, e.g., a data file, a string of code, a tape, a CD.²⁵³ There is a material storable proxy. Services, on the other hand, have physical effects and relations, but are not in themselves material objects. For example, a

²⁴⁶ Smith, *Wealth of Nations*, 330.

²⁴⁷ T. Hill, “Tangibles, Intangibles and Services”, 428-30.

²⁴⁸ Marx, *Theories of Surplus Value*, 1325.

²⁴⁹ *ibid.*

²⁵⁰ Dooley, *The Labour Theory of Value*, 24.

²⁵¹ *ibid.*

²⁵² T. Hill, “Tangibles, Intangibles and Services”, 437.

²⁵³ Going into a metaphysical discussion about whether a string of code, hex number, or a data file has ‘physical’ reality is outside the scope of this thesis. For the sake of argument, the point here is that even a string of code takes up some ‘space’ (real or virtual), measured in bytes.

haircut is a material change to hair, but I cannot meaningfully store the haircut for future use, or trade away the haircut I've been given to someone else. As such, there is a marked difference between a service having material consequences and effects, and for a service to be a material storable proxy. Yet, based on this view it is still problematic to assert that all services are unproductive as it glosses over the fact that services can indirectly provide and augment stocks.

Tregenna notes that ultimately, we could be read this dismissal as arbitrary. Marx' conception of productive and unproductive labour, and of commodities, does actually imply that we can understand services as productive.²⁵⁴ Rather than holding the same distinction, according to Tregenna, Marx' maintaining of Smith's view of services might be due to the historical context, as services were empirically less prominent then than they are now.²⁵⁵ Tregenna argues that "[a]lthough Marx recognises these activities [services] as involving productive labour and producing surplus-value, he opts to neglect them and lump them together with unproductive wage-labour."²⁵⁶

Tregenna argues that contrary to Dooley's reading that Marx could be read as being a non-physicalist, as opposed to Smith.²⁵⁷ Regarding this, Tregenna argues that Marx explicitly has a non-physicalist view of commodities:

[...] the commodity form, and the value-relation of the products of labour within which it appears, have absolutely no connection with the physical nature of the commodity and the material [*dinglich*] relations arising out of this.²⁵⁸

Because of this, a service certainly could provide a commodity in Marx' schemata because flows are not exempt from being commodities. This is a wholly different way of conceptualizing productive labour than the physicalist conception of Smith, which bases the classification of goods and services on underlying physical characteristics.²⁵⁹ The important thing in Marx' definition is rather that commodities are classified based on *how* they are produced.²⁶⁰ This entails that productive labour is defined in relation to the social relations of

²⁵⁴ Tregenna, "What Does the 'Services Sector' Mean in Marxian Terms?", 290.

²⁵⁵ *ibid.*, 289.

²⁵⁶ *ibid.*, 290.

²⁵⁷ *ibid.*, 286-87.

²⁵⁸ Marx quoted in Tregenna, "What Does the 'Services Sector' Mean in Marxian Terms?", 286-87.

²⁵⁹ Tregenna, "What Does the 'Services Sector' Mean in Marxian Terms?", 285.

²⁶⁰ *ibid.*

production, and not the physical characteristics of the commodity.²⁶¹ Similar types of labour can be either productive or unproductive in different settings, based on these relations.²⁶² This is something which Marx explicitly noted.²⁶³ As an example, Marx argues that if a tailor is employed by a merchant to provide services for the merchant's customer, their labour is productive, as it provides a surplus for the merchant. This contrasts with the earlier example, where the tailor is taken to be self-employed. In this case no capitalist would gain surplus value from their work.²⁶⁴

Moraitis and Copley note a similar example with a supermarket cashier. Usually, a cashier is providing unproductive labour. The work they provide is important, because it facilitates circulation of capital, but this is only tantamount to providing a use-value directly consumed by the capitalist employing them. That is, they are providing a service which helps transform the commodities at sale in the supermarket into money, but they are not themselves augmenting these commodities or producing new ones. In contrast to this, if the cashier is outsourced by a job agency, the labour they provide is productive. This is because their work is being sold as a commodity, providing surplus value for the job agency. Thus, as Moraitis and Copley note at the end of this example, the function of the labourer does not necessarily dictate whether their work is productive or not. What designates productivity, in these two examples, is the prevailing relations between the labourer and capitalist.²⁶⁵

To conclude this reflection on productive and unproductive labour – the classification of something as productive depends on whether there is a capitalist present who receives a commodity from the labour, which can be exchanged for exchange-value and a surplus. A service could then be argued to only be productive in the case that it provides something with exchange-value related to the process of production. As argued earlier though, exchange-values are axiologically dependent upon property. For something to have exchange-value it must be exchangeable. As such, for services to be productive I hold that they must provide a property-proxy. Even if we do not take a commodity to directly have to be a physical good, as Tregenna argues, there still needs to be produced something which can be exchanged. In the examples noted above, this property-proxy seems to take the form of the capitalist owning the right to the service worker's labour. The cashier provides a productive labour when their labour can be sold as a commodity on behalf of the job agency to the supermarket. As such, it

²⁶¹ Moraitis and Copley, "Productive and unproductive labour and social form", 107.

²⁶² *ibid.*, 106-7.

²⁶³ Marx, *Capital*, 1044.

²⁶⁴ Marx, *Theories of Surplus Value*, 1325.

²⁶⁵ Moraitis and Copley, "Productive and unproductive labour and social form", 107.

is the right to the labour of the cashier which is transferred. Similarly, the tailors labour is owned by the merchant, and sold to the person who requires cloth to be changed into pants.

Based on this discussion, I take the problem of services for neoclassical economics, to be that many services do not produce productive labour. Because of this they are fundamentally seen as not contributing to the economy or producing economic value. This is problematic for neoclassical methods of valuation, as they rely on exchange-value as the main measurement of value. The obvious question to ask now, is whether ES could be taken to be productive services.

5.4 Ecosystem services as unproductive services

Consider an example of an ES – the provisioning of timber. Who are the ‘economic units’ that take part in the rendering of this service? What economic unit is changing the condition, and of which unit or good? I would argue that what is being changed by the ES is the condition of the trees which are part of the ecosystem. What is causing this change could be taken to be a myriad of things – the growth time of the tree itself, the nutritional value of the soil, the amount of decomposer species, availability of water, availability of sunlight, the magnitude of pollinators to ensure that new saplings form, and so on. Taking this together we could argue that this it is the underlying structural elements of an ecosystem that are producing this change. As Daly and Farley point out:

[...] the structural elements of an ecosystem are stocks of biotic and abiotic resources (minerals, water, trees, other plants, and animals), which when combined together generate ecosystem functions, or services.²⁶⁶

To answer which units are involved in this service we would thus need to consider who is ‘combining’ these structural elements together. This combination, I would argue, is simply due to the functioning of the larger ecosystem. There is no external or specific unit which ensures that ES are produced, they are processes stemming from the ecosystems internal structure. As such, I would argue that the service is provided *for* the local ecosystem in question *by* the local ecosystem. This view entails that ES are not services which are explicitly ‘aimed towards’ human recipients. As Daly and Farley point out, ES are simply

²⁶⁶ Daly and Farley, *Ecological Economics*, 106-7.

ecosystem functions which have value, or are beneficial, for us humans.²⁶⁷ Their outputs and consequences might be beneficial to us as humans, and we value it as such, but it is not an output that is necessarily produced for our sake alone.

In his definition of services, Hill notes that it is possible that the producer and consumer of a service is one and the same economic unit. He is quick to add that this is not typically the type of case of services discussed in economics.²⁶⁸ As such, he does not expound further on what a scenario where the producer and consumer of a service is one and the same entails. Given what has been discussed so far though, I would argue that when a service is provided by and to the same unit, it is necessarily unproductive. This is because we have argued that for services to be productive a property-proxy is required, usually in the form of the right to the service worker's labour. This proxy needs to be exchanged for an exchange-value and a surplus. In the case of ES though, where a unit is providing a service for itself, no such proxy is derived from the production of the service.

The issue here is that the social relations of production of ES do not entail that there is an external capitalist or unit who owns the labour of the ecosystem. Because of this, exchange-value cannot be realized, as no one can rightfully sell the service labour of the ecosystem. The labour providing a change in the condition of timber, for example, cannot be sold to another economic unit to provide exchange-value for the service. This should not be confused with a capitalist selling the benefits of ES. We could imagine a scenario where a capitalist lays a property claim on an area of trees, or a water source. In these cases, they could be earning a surplus by leveraging the ES in the area, by selling the timber provided, or the water which might be naturally filtered. These, though, are only benefits derived from ES, and as such it is conceptually not the same as selling the labour of the ecosystem itself. Selling service labour entails that the labour provides the service for someone else. The tailor's labour is sold to tailor cloth into pants. This is not the same as selling ready-made pants, in which case the tailor would be a production worker and not a service worker.

Some might contend to the view that ES are provided for and by the same unit, by arguing that rather some structural elements of the ecosystem are providing a service for the ecosystem-as-a-whole. This view might be akin to holding that my liver produces a service for my body in general, which might seem strange as my liver is dependent on the existence of my body to perform its function. In this case, the labour provided is decoupled from the

²⁶⁷ Daly and Farley, *Ecological Economics*, 97, 103.

²⁶⁸ T. Hill, "On Goods and Services", 319.

ecosystem in general. Thus, it is possible to argue that there is in fact some property produced, in the form of the labour of the given structural elements. In this case, the ecosystem could be taken as the ‘capitalist’ owning that labour. Yet, even in such a view I would argue that ES do not provide productive labour, because the given ‘property’ is still not *realized* as exchange-value. Rather, the labour provided is entirely consumed by the ecosystem itself.

5.4.1 Unproductive services and neoclassical value

The crucial point here is that the Marxist conception of what ‘counts’ as productive labour under capitalism makes it clearer why some types of services, such as ES or informal domestic work, are systematically backgrounded or undervalued.²⁶⁹ The main problem is that these services do not necessarily provide property-proxies, such as the transferral of ownership of labour, or other exchangeable commodities. This is a required criteria if services are to provide exchange-value, and potentially a surplus. Because of this issue they might not be deemed to be contributing to or producing economic value. For neoclassical economists to be oriented towards something as being a service, entails that it is a flow which must be qualified by providing a related property-proxy for it to be of economic importance. In a way, if something is a service, it means that it is a theoretical problem for the neoclassicists as they need to find a conceivable way to derive property which can be stocked from it.

For neoclassical economists, this presents a problem for the valuation of ES. If, as argued earlier, neoclassical economical thought privileges exchange-values over use-value, and ES do not produce exchange-values, then there does not seem to be any solid basis on which neoclassical economists could base the ascription of economic values of ES. Hill, and other neoclassical economists, dismiss both the distinction between use-value and exchange-value, and between productive and unproductive labour.²⁷⁰ What I hold that the conundrum of ES reveals here though, is that such a dismissal is highly problematic if we attempt to value non-market goods which do not conform to economic standards. The next chapter expounds on these issues, as it focuses on the neoclassical assumptions in general, and

²⁶⁹ Note that I am here specifying informal domestic work, as this is what features in the case Jordhus-Lier discusses. Domestic work could in this Marxist interpretation certainly be seen as productive if sold as a commodity, e.g., from a work agency to a family.

²⁷⁰ Douai, “Value theory in ecological economics”, 260. T. Hill, “Tangibles, Intangibles and Services”, 434.

valuation methods in particular. I will be arguing that these methods and assumptions reveal that neoclassical economics encounters problems when valuating ES precisely because these do not provide exchange-values. Ultimately this entails that neoclassical thought is not consistently able to value ES.

6. Neoclassical value

This chapter focuses in detail on neoclassical valuation methods and axiomatic assumptions. I argue that these assumptions and methods are inadequate for valuating ES. They cannot make sense of values other than exchange-value. This leads to these methods backgrounding what Peterson terms vital values, a set of values which all other values, and the possibility for valuation in general, is ontologically and axiomatically dependent upon. This denial of dependence amounts to a both a theoretical and moral error, as it neglects existential conditions for both the economy, and for us as moral agents.

6.1 Marginal utility

Neoclassical economists hold that value is primarily a function of *marginal utility*. That is, what determines the value of a given good is the additional utility associated with acquiring one more unit of that good.²⁷¹ As such, it could be taken to be a fundamentally utilitarian position. Ali Douai argues that this fundamental assumption has the effect of making all values commensurable.²⁷² Philosopher Ruth Chang notes that commensurability of values implies can be measured by a shared cardinal unit.²⁷³ In the case of neoclassical thought, energy economist Georgescu-Roegen argued that neoclassical economists assume that ‘utility’ is a common denominator and measure which can describe all possible preferences, wants, and values.²⁷⁴

Philosophically Chang notes that it is often argued that ethical positions which assume such commensurability are implausible. Most notably only early traditional forms of utilitarianism hold such positions.²⁷⁵ According to Nitzan and Bichler, early neoclassicist were aware of the philosophical untenability of such a position.²⁷⁶ Many of them agree that it is practically impossible to actually measure, or even conceptualize, a universal version of utility. As such a definite quantifiable commensurable measure seems impossible to define.²⁷⁷ Nitzan and Bichler argue that faced with this challenge neoclassical economists simply assume that utility is the underlying source of value, rather than rejecting that values are

²⁷¹ Dooley, *The Labour Theory of Value*, 3, 187.

²⁷² Douai, “Value theory in ecological economics”, 260.

²⁷³ Chang, “Value Incomparability and Incommensurability”, 2.

²⁷⁴ Gowdy and Olsen, “Further Problems with Neoclassical Environmental Economics”, 162-63.

²⁷⁵ Chang, “Value Incomparability and Incommensurability”, 2.

²⁷⁶ Nitzan and Bichler, *Capital as Power*, 128-29.

²⁷⁷ *ibid.*

Bruno Frey and Matthias Benz note that early utilitarianists and economists would make attempts at defining universally quantifiable utility functions. See “From imperialism to inspiration”, pp. 63-64.

commensurable. Instead of being directly measurable as a universal function, though, they take utility as possible to quantify by referencing the behaviours and choices of individuals.²⁷⁸ This is the philosophical and theoretical basis of most neoclassical valuation methods.

As Bruno Frey and Matthias Benz point out, this response to the problem of commensurability can be understood as a move from a cardinal to an ordinal concept of utility.²⁷⁹ Rather than referencing a general measure of utility, neoclassical economists only appeal to the revealed preferences of individuals. Because of this, utility has no further meaning than the preference of a person, for example, preferring good A over good B.²⁸⁰ As Frey and Benz write:

Utility thus just becomes a number without any further substantive meaning whatsoever, and it only serves to explain the choices made by individuals between various goods.²⁸¹

As it does not necessarily entail that we can express various preferences according to a universal cardinal unit, it could be argued to avoid value commensurability. The unit referred to is now rather an ordinal, relative, scale of preferences, rather than definite units measuring utility. As such, individuals can have different utility functions. I would argue that this is, to an extent, a theoretical feint. This is because neoclassical economists maintain a general cardinal unit of measurement which makes values commensurable, even if their view of utility has shifted to being ordinal.

6.1.1 Willingness to pay

Referencing the revealed behaviours of individuals begs the question of what type of behaviour is seen as relevant. With regards to this, critical economists Muhammad Dore and Michael Prior argue that the neoclassical economic model depends on the concept of ‘*willingness to pay*’ (WTP), that is, what consumers are willing to pay for a given good or service.²⁸² Neoclassical economist Marshall posits this in his work *Principles of Economics*:

²⁷⁸ Nitzan and Bichler, *Capital as Power*, 128-30.

²⁷⁹ Frey and Benz, “From imperialism to inspiration”, 63-64.

²⁸⁰ *ibid.*, 64.

²⁸¹ *ibid.*

²⁸² Dore, “The Problem of Valuation”, 65. Prior, “Economic Valuation and Environmental Values”, 433.

Utility is taken to be correlative to Desire or Want. It has been already argued that desires cannot be measured directly, but only indirectly by the outward phenomena to which they give rise : and that in those cases with which economics is chiefly concerned the measure is found in the price which a person is willing to pay for the fulfilment or satisfaction of his desire.²⁸³

Thus, the main type of behaviour neoclassical economists focus on is the economic behaviour of individuals when they are engaged in exchange. That is, it is the behaviour exhibited when buying and selling goods in the market. Because of this, money is taken to be the fundamental measure which reflects all individuals' values, preferences, and utility functions. As such, in neoclassical thought, even if utility is ordinal, we could take money to be a cardinal commensurable unit.²⁸⁴ All utility functions can be compared and measured according to this unit. Douai argues, though, that this theoretical assumption made by neoclassicists is flawed, as nothing theoretically substantiates that money can be taken to be a general measure of utility.²⁸⁵ He states that this problem:

[...] has not been addressed satisfactorily, and raises the following question: what enables the economic valuation approach to assume that money is the objectivation of the utility of things?²⁸⁶

Douai gives two reasons for why neoclassical economists might be able to maintain such a position. On one hand, quoting Marx and Engels, he argues that neoclassical economists simply assume that: “[...] money represents the value of all things, people and social relations’.”²⁸⁷ On the other hand, Douai also note that neoclassical economists reject the theoretical distinction between use-value and exchange-value.²⁸⁸ By rejecting this distinction, neoclassical economists effectively imply that exchange-value is identical to use-value. That is, that the quantitative value of a good is representative of its qualitative utility. Because of this rejection, money, as a measure of exchange-value, is mistakenly understood as a cardinal unit of all values, thus representing utility.

²⁸³ Marshall, *Principles of Economics*, 78.

²⁸⁴ Other have raised a similar critique that WTP implies that neoclassicists maintain a cardinal measure, and not ordinal. See, Wegner and Pascual “Cost-benefit analysis in the context of ecosystem services”, 498.

²⁸⁵ Douai, “Value theory in ecological economics”, 260.

²⁸⁶ *ibid.*

²⁸⁷ Karl Marx and Friedrich Engels quoted in Douai, “Value theory in ecological economics”, 260.

²⁸⁸ Douai, “Value theory in ecological economics”, 260.

Taking these considerations together, it could be argued that neoclassical economists effectively focus on exchange-value, and specifically on monetary values, for measuring economic value. This is due to their reliance on the WTP of individuals as a fundamental measure of value. More than just a prioritization of exchange-value ahead of use-value, as Peterson and Kovel argue, I would assert that this seems like a totalization of exchange-value as the only plausible value measure. This position has problematic consequences for how neoclassical methods can value environmental goods, and especially ES.

6.2 Market valuation and indirect valuation methods

Dore argues that even if we grant that WTP might accurately reflect current market prices, and the price formation in existing markets, this basis of valuation does not necessarily apply to environmental goods such as ES. This is because these are predominantly non-market entities.²⁸⁹ This makes it problematic for a WTP model to accurately reflect the economic contribution of such things. M. Peterson and T. Peterson argue that economists have traditionally employed methods for valuing environmental goods which directly values the market commodities derived from them. As they note:

To determine the value of a stand of timber, for example, one can ascertain what price the logs would fetch at a sawmill, add to this the economic benefits the logging and milling operations contribute to the community, and subtract the cost of building roads into the area, felling and bucking the trees, and hauling them to the mill. What is left is the value, or 'net economic surplus'.²⁹⁰

The problem with this method though, is that market prices are not directly indicative of the value of the underlying environmental good. Neoclassical economic models tend to argue that market prices are based on the independent supply and demand of a given good – price formation happens at the equilibrium point where these two factors meet. Yet, as economist Ron Baiman argues, the idea of a supply independent of demand is hypothetical and fictitious. In fact, most supply within the economy is based on company choices based on

²⁸⁹ Dore, "The Problem of Valuation", 67.

²⁹⁰ M. Peterson and T. Peterson, "A Rhetorical Critique", 50.

existing cost of production and market demand.²⁹¹ Thus, Baiman argues, price formations within most economies actually:

[...] are subjectively determined, socially embedded choices that reflect institutional and class power, constrained by objective conditions, that result in unstable and generally socially nonoptimal equilibrium price and quantity outcomes [...].²⁹²

The point here is that the way a stand of timber is mediated and realized as exchange-value is through a process that is largely influenced by social relations within the market. As such, the stock-proxy, the market price of timber, is to a large extent influenced by how, for example, a logging company goes about presenting the stock of timber to the market, their pricing strategy, and other social aspects of exchange.

In addition, if we consider the argument made that ES are flows which do not produce exchange-values, then there does not seem to exist any market commodity which can be directly derived from these. Consider the example of the provisioning of timber again. Assessing the economic benefits from a related activity, such as the importance of logging for the local community, might inform us partly about the economic impact of this ES. Yet, I hold that there is a logical distinction to be made here, which highlights the flaw of such a market-based valuation method. The distinction I want to draw is that there is a marked difference between the value of a given stock, and the value of the process that ensures that the stock exists. To put this another way, to value a stock of timber is not the same as valuating the existential conditions that ensure we have stocks of timber in the first place. What is being valued with market-based valuation could be argued to be a market-proxy, the total supply of timber in the economic market, and not strictly the value of provisioning of timber by the ES.

The point here is that without the ES, the stock of timber would not exist, and so valuation of this stock would not be logically impossible. In Peterson's terms we might argue that the value of the stock of timber is ontologically dependent upon the flow of the ES. The timber would not exist at all if the ES did not. As such, the underlying flow might represent a more fundamental goods value, than the exchange-value of the timber. Valuating an ES solely based on the market commodities derived from it does not inform us about the value of this underlying ontologically necessary goods value. Even in neoclassical terms, individuals

²⁹¹ Baiman, *The Morality of Radical Economics*, 94-109.

²⁹² *ibid.*, 117.

WTP for the existence of timber, might be something entirely different than their WTP for a piece of lumber on the market. Because of this, market valuation methods seem inaccurate, as they only capture the exchange-value marketable proxies and not the non-exchangeable goods value of the ES.

Neoclassical economists also employ other methods of valuation that rely on market-based substitutes, such as indirect valuation methods.²⁹³ These include, for example, travel cost methods, which are based on calculation of the price that consumers pay to travel to a given environmental site, the availability of substitute sites, cost of on-site time, and more.²⁹⁴ Yet, even if these consider a broader spectrum of market behaviours rather than just the direct price and impact of market commodities extracted from an environmental good, they are still reliant upon market-based proxies. As such, I would argue that a variant of the argument presented so far still holds, since these methods do not either value the underlying ES. Interestingly though, we could make the case that while direct methods focus on market commodities which are ontologically dependent upon the underlying ES, indirect methods could be argued to focus on commodities that are axiologically dependent. The market behaviours, such as travel, might exist without the given environmental good, but these behaviours can only be taken to be expressions of value preferences if we presuppose the existence of a valuable environmental good.

In addition, as M. Peterson and T. Peterson²⁹⁵ argue, many economists find indirect methods lacking, as they rely on there being some market behaviour that is related to an environmental good from which one can indirectly quantify value.²⁹⁶ For many environmental goods though, there might not always exist market-based behaviour from which one can infer WTP.

6.3 Contingent valuation: The neoclassical risk of foregoing a market proxy

Neoclassical economists also employ direct valuation methods, the most common one being *contingent valuation* (CV). This method focuses on directly surveying what people would hypothetically be willing to pay for an environmental benefit.²⁹⁷ Usually, this method is also

²⁹³ M. Peterson and T. Peterson, "A Rhetorical Critique", 48-50.

²⁹⁴ *ibid.*

²⁹⁵ Note again that M. Peterson refers to Markus Peterson. T. Peterson refers to Tarla Rai Peterson. Where necessary I will be referring to these with initials, so as not to confuse them with Keith Peterson.

²⁹⁶ M. Peterson and T. Peterson, "A Rhetorical Critique", 50-51.

²⁹⁷ Bardsley et al., "Why economic valuation does not value the environment", 1.

based on substituting the environmental good with a related commodified recreational experience.²⁹⁸ For example, they ask respondents the maximum cost they would pay for a fishing license in a certain area, or what respondents would hypothetically be willing to pay as a maximum to visit a specific forest.²⁹⁹ This, though, would evidently seem to run into much of the same problems noted above about using proxies as substitutes in valuation, and in that it captures what consumers believe the environmental value of a good to be, and not necessarily its actual economic contribution.

Yet, CV methods might also directly query what people are willing to pay to protect, obtain, or maintain a given environmental good.³⁰⁰ As Dore argues, aside from methods of valuation that seek to ‘uncover’ WTP, economists also consider another approach, namely *willingness to accept* (WTA). WTA methods are a variant of WTP, but rather than asking what a respondent is willing to pay for an environmental good, it asks what respondents would be willing to accept as compensation for the loss of the given good.³⁰¹ The point though, is that with both methods one might avoid using a market-based proxy.

On the face of it, such a method might allow individuals to make value ascriptions based on what they perceive the value of the underlying flow of an ES to be, instead of a market-proxy. Yet, I would argue that because this method rejects using a proxy, it reveals that neoclassical economic methods have no possibility to value ES. The reason for this is that, in practice, they cannot make sense of other kinds of value than exchange-value. This leads to neoclassical economists positing what I hold to be a confused line of questioning, which makes it difficult for the individuals who are queried to make value ascriptions.

Gowdy and Olsen argue that according to neoclassical economics, economic agents act within can be termed ‘an area of indifference’.³⁰² Such areas are often modelled as *indifference curves*, graphed curves that show the various combinations between two goods, for which a given individual is equally satisfied.³⁰³ As Gowdy and Olsen exemplify: “[...] the consumer might be equally happy with ten X and five Y, or eight X and eight Y.”³⁰⁴ The

²⁹⁸ Dore, “The Problem of Valuation”, 67. M. Peterson and T. Peterson, “A Rhetorical Critique”, 51.

²⁹⁹ Dore, “The Problem of Valuation”, 67. M. Peterson and T. Peterson, “A Rhetorical Critique”, 51.

³⁰⁰ Burkett, *Marxism and Ecological Economics*, 59-60.

³⁰¹ Dore, “The Problem of Valuation”, 67. Burkett, *Marxism and Ecological Economics*, 56-57, 62-63.

I hold that whether we consider a WTP or WTA approach makes little difference regarding what I am going to be arguing here. Yet, it should be noted that there is a WTA-WTP gap, as consumers often report far higher monetary values as compensation for the loss of an environmental good, than what they are willing to pay to maintain it. As Burkett points out, this has led to much controversy among CV analysts.

³⁰² Gowdy and Olsen, “Further Problems with Neoclassical Environmental Economics”, 162.

³⁰³ Petri, *Microeconomics*, 185-87.

³⁰⁴ Gowdy and Olsen, “Further Problems with Neoclassical Environmental Economics”, 162.

central point here though, according to Gowdy and Olsen, is that what might be called indifference here, can also be understood as a *willingness to trade*.³⁰⁵ This willingness is a fundamental premise for neoclassical economics. Without a willingness to trade, a willingness to make trade-offs and compromises, there cannot meaningfully be any WTP/A.

In CV queries, though, this assumption becomes an obstacle. Gowdy and Olsen observe that because of the focus on indifference, neoclassical economists often exclude what can be called *lexicographic preferences*. These preferences denote instances in which a consumer is not willing to trade.³⁰⁶ To rephrase this, we could say that lexicographic preferences describe situations where agents are decidedly not indifferent. Due to ethical, religious, or other convictions, they are not willing to allow for any trade-offs, and thus, they have no possible indifference curve when considering specific goods. Gowdy and Olsen note that neoclassical economists, exemplified by Edwards, often exclude such preferences from valuation methods and models, as they “[...] do not match rigorous notions of economic values.”³⁰⁷ In CV methods specifically, as Burkett and Prior note, such preferences have been observed to impact the answers of consumers, leading people to be unwilling to ascribe monetary values in such surveys or to ascribe infinite value.³⁰⁸ Burkett observes that neoclassical economists often will deem such value ascriptions as ‘irrational’ and simply discard them:

[...] the dominant tendency among CV practitioners is to ignore the questions raised by the environment’s public good character, and to proceed on the basis of ‘plausible’ WTP estimates that commensurate the environment with Twinkies, Big Macs, cell phones, and the numerous other ecologically disastrous products generated by the market system. Any survey responses contradicting such commensuration are typically thrown out [...].³⁰⁹

As such, it seems to be the case that if individuals make value ascriptions which are not in the form of an exchange-value, or in line with the assumption that everyone has a WTP for everything, their answers are deemed as implausible by neoclassical theorists. Because of this, it could be argued that in practice neoclassical economists maintain the idea that all values are commensurable, as they all can be expressed by the cardinal unit of money, even if they theoretically might not assume this by holding an ordinal view of utility. Clearly, the

³⁰⁵ Gowdy and Olsen, “Further Problems with Neoclassical Environmental Economics”, 162.

³⁰⁶ *ibid.*

³⁰⁷ Edwards quoted in Gowdy and Olsen, “Further Problems with Neoclassical Environmental Economics”, 164.

³⁰⁸ Burkett, *Marxism and Ecological Economics*, 70-71. Prior, “Economic valuation”, 435.

³⁰⁹ Burkett, *Marxism and Ecological Economics*, 77.

neoclassical view presupposes a certain orientation towards values, as only exchange-values are deemed to be ‘rational’ representations of individual preferences.

The problem here is that in lieu of lacking a market-proxy, rather than admitting that some environmental goods, like ES, do not have an exchange-value, neoclassicists simply ask individuals to place an arbitrary price on what they would pay for the good. This runs into some problems of knowledge, as Dore argues, as individual consumers often have miniscule information about the ecological functions of environmental goods and areas and might thus not be properly equipped to make such value ascriptions.³¹⁰ More importantly though, I would argue that the focus on exchange-value in all of the mentioned methods here admits to an underlying problem with neoclassical thought, namely that in the neoclassical view, nature holds no economic value. Thus, we could argue that the valuation methods are ad hoc value determinations of something which is fundamentally denied as being of economic import.

6.4 Neoclassical futility

Burkett notes that neoclassical economics treats non-market entities and phenomena as ‘externalities’ – they are not part of the economy.³¹¹ The environment is assumed to be one such externality.³¹² The assumption that the environment as something external to economics, becomes evident if we consider how exchange-value is constituted.

As noted earlier, Bjerg argues that neoclassical exchange-values only come into being when they are exchanged or imagined to be exchanged in a market. This presupposes the (hypothetical) existence of a seller, a buyer, and an object of property. What is exchanged must be a commodity which legally can be transferred between buyer and seller.³¹³ The problem with this relation though, as Bjerg points out, is that it leads neoclassical economists to not count environmental goods as being part of exchange, because nature is external to the economy: “[...] the fish does not have a price prior to being caught and the acquisition of the fish is not recorded as an exchange but rather as a unilateral appropriation.”³¹⁴ When something is extracted from nature, nothing is given or demanded in return at least not by neoclassical economists, and as such there seems to be no exchange happening.

³¹⁰ Dore, “The Problem of Valuation”, 69.

³¹¹ Burkett, *Marxism and Ecological Economics*, 58-59.

³¹² *ibid.*

³¹³ Bjerg, *Parallax of Growth*, 103.

³¹⁴ *ibid.*, 104.

In this way, it would seem that neoclassical economics denies that nature in general produces anything which has exchange-value. And indeed, on this position, it is only when environmental goods are claimed as property and introduced to the market by an economic agent that they gain exchange-value.³¹⁵ When considering ES, this view is problematic, as they often constitute axiological and ontological conditions for economic values. This creates problems when neoclassical economists ask the question: ‘What is the economic value of ES x ?’. From a neoclassical view, I would argue that we might assess this question in two different ways, but that neither can give satisfactory answers.

Firstly, we could take the question to be asking: ‘What is the economic impact or contribution of ES x ?’. In order to answer this question, we might measure quantifiable exchange-values related to the ES, by way of market-based and indirect methods. As mentioned earlier, though, such methods do not reflect the relationships of dependence that these exchange-values have to the underlying ES. As such, the methods ignore the fact that ES have qualitative impacts for the economy, in the sense that they are ontologically constitutive of economic values.

If an economist considers how a specific company impacts the economy, they might ask questions like: How much surplus does the company’s production generate? What is its monetary cost of labour and production? How do these monetary values circulate to employees and stakeholders? What is the turnover of the company? These are all exchange-values which are produced by the operating processes of the company. We might also supplement this with values which are not directly monetary, like the amount of people the company employs, the proportion of employees in relation to the national workforce, and so forth. Labour power, though, is a commodity with an exchange-value. The issue is that the economy and economic values are not constitutionally dependent upon any specific companies. If Coca-Cola ceased to exist, the economy would still go on, and other companies would produce soda. If the provisioning of timber ceased to exist, on the other hand, all economic activity related to and reliant upon lumber would also cease. Ecological economists Herman E. Daly and Joshua Farley similarly point out that: “It is impossible to create something from nothing; all economic production requires a flow of natural resources generated by a stock of natural capital.”³¹⁶ Their point is that the economy is dependent upon the existence of nature, without nature, natural capital, and ES, we could not have an

³¹⁵ As nature and natural processes are external to the economy, I take them to not be included in the typical neoclassical designation of ‘economic agent’.

³¹⁶ Daly and Farley, *Ecological Economics*, 107.

economy.³¹⁷ As such, the economic contribution of an ES is not limited to the exchange-values we derive from it. I would argue that logically the contributions of ES also include the qualitative benefits which the economy receives in the form of the possibility for economic activity relating to that ES to exist. ES have a use-value for the economy in general.

Let us consider the other way in which neoclassical economists might understand the question: ‘What is the economic value of ES x ?’, namely as ‘What do people believe that ES x is worth?’. As has been discussed with CV, this is also problematic for neoclassical economists, as they exclude any non-monetary or ‘irrational’ answers to this question. Anything that is not in line with the assumption that money is a commensurable unit for all value is outright rejected. Yet, this question highlights another dependence relation that Peterson points out. Peterson argues that there is a type of goods value called *vital values*. These are not only axiological and ontological conditions for other values but distinguish themselves from other goods values in that they are necessary for the existence of valuation in general.³¹⁸ Fundamental vital values include “[...] living things, processes, species, and even biotic communities and ecosystems [...]”.³¹⁹ These must necessarily exist for evaluation, and thus for other values, to exist at all.³²⁰ If goods values, such as exchange-values, always are a good ‘for’ something alive, then living beings necessarily must exist for goods values to exist.

I would argue that we can take many ES to be vital values. They are not only ontological and axiological conditions for other values, but for valuation as a whole. The fact is that the degradation of many ecosystem services would not adhere to the survival principle in Peterson’s axiological ethics. Daly and Farley note that: “Many of these ecosystem services are essential to our survival.”³²¹ Some critical ES are central for sustaining human life, and as such without them we would not exist. They are thus, not just ontological conditions for values, but for humans to exist as valuers. As the MA states: “The human species, while buffered against environmental changes by culture and technology, is fundamentally dependent on the flow of ecosystem services.”³²²

This argument might seem more evident in the case of some ES than others. While we would be logically dependent upon photosynthesis or the provisioning of food, for example

³¹⁷ Daly and Farley, *Ecological Economics*, 19.

³¹⁸ K. Peterson, *A World Not Made for Us*, 108.

³¹⁹ *ibid.*

³²⁰ *ibid.*

³²¹ Daly and Farley, 76.

³²² MA, *Current State and Trends*, vii.

through croplands, we could keep on surviving without pollination services.³²³ Yet, this does not exclude the fact that pollination services, even if not a vital value for us, might be a vital value for other conative valuers. In addition, even if not a direct vital value, any change in a given ES could have profound effects on the ecosystem as a whole, and thus other ES. For example, many pollinators are insects, which also are important for providing decomposition services.³²⁴ As Daly and Farley note:

Owing to the complex nature of the whole system, as structural elements of an ecosystem are lost, in most cases we cannot say for sure to what extent ecosystem functions will be affected.³²⁵

I would argue that the interconnectedness of the structural elements of ecosystem functioning implies that most ES to some extent can be taken to be vital values. Either for us, for other valuers, or indirectly as ontological conditions for ES with direct vital import. That is, even if some ES are not directly vital values for us, they might be processes which other vital values rely on. There is in a sense here of what Peterson terms a relation of *diffuse dependence*. This concept refers to relations of dependence where something is not necessarily dependent upon one singular causal concretum, but multiple interconnected processes.³²⁶ For example, we as humans depend upon ES for our existence, but no singular ES alone would be sufficient for our survival. This makes them diffuse, as they are difficult to grasp.³²⁷ This diffuse dependence entails that while we might have the capability substitute particular functions of an ES, we cannot necessarily substitute the entirety of their processes. This is because the borders, interdependencies, and synergies, between various ES are difficult to delineate.³²⁸

The critical point here is that the neoclassical view on nature and value is theoretically not able to truly recognize the importance of vital values. On one hand, neoclassical thought denies the dependence relations of the economy upon nature. More profoundly, it could also be taken to deny the existential conditions for economic valuation at all to exist, as it only commits to value judgements based on exchange-values, instead of the more fundamental

³²³ Palmer, "The Bee-Free Diet".

Many food crops we rely on, like grains, are not dependent upon pollinators. Admittedly, though, without pollinators we might have both a less varied and smaller food supply, but we as humans could potentially keep on existing.

³²⁴ Goulson, interview.

³²⁵ Daly and Farley, 97.

³²⁶ K. Peterson, "Ecosystem services", 16. K. Peterson, *A World Not Made for Us*, 164.

³²⁷ K. Peterson, "Ecosystem services", 9.

³²⁸ K. Peterson, *A World Not Made for Us*, 168.

vital values. This, though, is not just a theoretical issue, but according to Peterson is also a moral mistake.

6.4.1 The moral mistake of denying dependence

By arguing for the importance and existence of fundamental vital values, Peterson implies that the existence of living matter is the general condition for constitutional valuational relationality. Because values always are for someone, it follows logically that *living conative valuer must exist* for values to exist. Both human and non-human beings are preconditions for the existence of values.³²⁹ This not only implies that vital values are conditions for goods values, but also for moral values. Both because moral values are ontologically dependent on goods values, and on the existence of a valuer capable of second-order valuation, such as humans.³³⁰

The effect of this, according to Peterson is that it is a moral mistake to consistently background vital values, as one is effectively denying the value of the conditions for all other values.³³¹ A position which denies vital values is inconsistent and morally untenable.³³² From this Peterson posits the following ethical principle:

One ought not consistently value (in developmental duration) the necessary condition for producing, reproducing, and developing human and nonhuman life less than one values the developed life itself. In other words, since many goods values depend on vital values as their conditions (and moral values depend on both), persistently backgrounding or denying the value of the conditions becomes a moral error.³³³

As mentioned earlier, I do not take Peterson's view to be a full-fledged ethical theory. Our moral values are in axiological ethics socially determined and are not necessarily directly defined by the theory. As such, I take the argument about vital values, to prescribe a fundamental ethical criterion, which must hold in order for us to have moral values in the first

³²⁹ K. Peterson, *A World Not Made for Us*, 110-11.

³³⁰ *ibid.*, 108.

Note, while it has been stated that I take a humble anthropocentric position here, Peterson's definition of moral agency, while practically only extending to humans, it does not exclude that we might in the future recognize or encounter other beings capable of second-order valuations.

³³¹ K. Peterson, *A World Not Made for Us*, 110-11.

³³² *ibid.*

³³³ *ibid.*, 110.

place. The point is that whatever moral system and prioritization we employ, for our position to be tenable, we cannot deny or background vital values.

Based on this discussion, I hold neoclassical economics to be an untenable theory when it comes to valuating ES. As earlier mentioned, it is practically inconsistent, as it undercuts the ontological preconditions for the economy in general, and for the act of economic valuation itself. Yet, by failing to recognize the importance of these vital values, neoclassical economics is also morally untenable as it denies the ontological basis for moral values and agency. The issue here is that neoclassical thought cannot make sense of vital values, as these are not exchange-values. Since the vital conditions for life are existential preconditions, they cannot be treated as exchangeable. Treating them as having exchange-value fails to recognize the vital importance that these values have for us. We cannot sell our ecosystems.

6.5 Mutual indifference

I hold that neoclassicists hold a fundamentally untenable position. They posit exchange-value to be the fundamental expression of value. This type of value can only be realized in economic exchange between economic agents. Yet, they attempt to ascribe this type of value to environmental goods like ES, which on their own are never part of relationships of exchange. Fundamentally, they are seen as valueless externalities to the economy.

Because of this, neoclassical economists do not and cannot properly value ES and other environmental processes. Their economic thought is fundamentally indifferent to nature, as nature itself does not on its own provide any exchange-value, even if it might be the source of this. Even if natural resources might be exchangeable, ES, as they are services, are not. Thus, for neoclassical economists, even if they might capture the economic value of a mineral deposit, because ES are defined as ‘services’ they are necessarily commodified. Neoclassical methods cannot rely on anything else than arbitrarily ascribing monetary exchange-values based on the related benefits of ES or ad hoc ascriptions based on the direct responses of individuals. None of these reflect the actual importance of ES as vital values, or the dependence of the economy upon nature and ecosystem functioning.

At the same time, nature presents us with the inverse relation. Peterson argues that nature is fundamentally indifferent to humanity. As he writes:

[...] the idea of the indifference of the lower strata to that which they support. In other words, the physical world does not exist for the purpose of being taken up into the organic, just as both do not exist to “service” human beings. The physical world is indifferent to the fact that life somehow emerged from it, just as the bulk of living and nonliving natural processes could happily continue on without the existence of human beings.³³⁴

In relation to this, we might argue that nature does not care whether the economy exists or not. If the economy was gone, nature would persist. As such, nature could also be taken to be indifferent to the economy. Human ecologist Alf Hornborg notes an interesting point in this regard, namely that money is entirely a human artifact.³³⁵ He puts this quite pointedly: “Nature has no use for money.”³³⁶ The point I want to make here is that nature is indifferent to economic exchange and trade, it does not participate in it. Even if we attempt to include environmental goods and processes in economic valuations, we cannot turn nature into an economic agent. Nature in general and its processes, do not necessarily conform to economic ideals. At the same time, regardless of whatever environmental valuation methods we as humans choose to rely on, nature does not respond to our choice – either resisting or accepting our valuations. Thus, there is a mutual indifference between the neoclassical economy and nature. The problem with this is that we have humans, and the economy, as asymmetrically dependent upon the functions of nature. We need economic approaches that consider care and consider nature as a necessary supporting structure for economic activity as a whole.

Given what has been discussed so far, it should now be more evident that the operative concept of ES is shaped by neoclassical institutions, which mistakenly presuppose that exchange-value is the only sound representation of value. Yet, given the nature of ES I would argue that this is an inadequate measure of their value, which is both theoretically and morally problematic. ES are vital flows, which logically cannot be exchanged. While they might indirectly provide exchangeable commodities, such as in the provisioning of timber, the market worth of this benefit is not the same as the value of the process. When we only attribute exchange-value to ES we are making a category mistake, as these processes have vital qualitative use-values for us as well.

³³⁴ K. Peterson, *A World Not Made for Us*, 165.

³³⁵ Hornborg, *Nature, Society and Justice*, 1.

³³⁶ Hornborg, “Post-Capitalist Ecologies”, 69.

Having made the case that the assumptions of neoclassical economics make it problematic to properly value ES, I will now move on to the last chapter. Informed by the discussion so far, the following will be an attempt at outlining some general considerations for a new economic approach based in axiological ethics.

7. Anticipating an axiological ethical economic framework

As mentioned in the theoretical assumptions made in chapter 2, this thesis is an attempt at applying philosophical methods in practice. It is a philosophical inquiry, which ultimately aims to contribute to a discussion on how economics can be understood. I have taken the operative concept of ES to be shaped by the discursive context it is employed within. This context has been taken to be the paradigm of neoclassical economics. Based on the work of Fisher, I argued that this paradigm sets some mental boundaries for our capacity to think of viable alternatives to it. Because of this, the main part of this thesis has tried to uncover the untenability of neoclassical thoughts. From our current position, having pointed out the fundamental problematic assumptions which neoclassicists make, I believe we might begin to propose an alternative economic approach. Keeping in mind the problems of the neoclassical tradition, I will now raise some final considerations concerning how an economic approach based on axiological ethical concerns might avoid the problematic issues neoclassical thinking is faced with when valuing ES. This might help us imagine a new discursive context, based on ethical concerns, in which we might employ the operative ES. These final sections are meant as brief attempts at putting the discussion so far into a broader perspective, as such, the focus is on presenting some topics and considerations which should be discussed further in the future.

7.1 Plural values in valuations of ecosystem services

We might now begin to assert an alternative conception of economics which avoids repeating the mistakes of the neoclassicists. Most notably, if such a conception is rooted on Peterson's axiological ethics, we need to allow for pluralistic valuations. As Peterson argues:

Opening up the domain of values in a pluralist way is indispensable for coming to terms with the pervasive problem of priorities – one that we face everywhere we experience conflicts of values – in a manner that reveals the need for cooperative communal conversation about them.³³⁷

A pluralist approach would allow us to avoid the totalization of exchange-value which neoclassical thought adheres to, leading to the problems discussed so far when valuing ES.

³³⁷ K. Peterson, *A World Not Made for Us*, 160.

Some neoclassical economists might object that if there is no commensurability, then there is no comparability. If values cannot be held up to a common scale or measure, then we cannot meaningfully compare them. Yet, from a philosophical position, Chang argues that incommensurability, that values cannot be represented in a singular cardinal scale, does not necessarily lead to incomparability. For example, one could compare justice and mercy, which have no shared unit of measure, in relation to their ability to provide security for a city.³³⁸ Bearers of value might themselves also be comparable, even if they carry incommensurate values. Chang states: “A state policy of proportional punishment is better than a meter maid’s merciful act of not writing someone a parking ticket with respect to achieving political legitimacy for the state.”³³⁹ Because of this, even if values are incommensurable, they might be compared by appealing to what Chang calls binary value relations: “One thing x, might be better or worse, than y with respect to V”.³⁴⁰ Chang refers to this as a covering consideration, values are never directly comparable as values: “[...] they are always comparable in some respect or respects.”³⁴¹ X might be better at y for the legitimacy of the state, my individual health, taste wise, and so on.

The idea of covering considerations echoes Peterson’s position in that a value is always a value that is ‘good for’. Because of the sustained possibility for comparison in this case, ecological economists Martínez-Alier et al. argue that it is feasible to commit to plural value schemes in economic valuations. As they note:

A location is not evaluated as good or bad as such, but rather as good, bad, beautiful or ugly under different descriptions. It can be at one and the same time a ‘good W’ and a ‘bad X’, a ‘beautiful Y’ and an ‘ugly Z’.³⁴²

Valuating ES in this way could entail multiple feasible approaches. Deciding between different course of action, for example, we might use the ES as a covering consideration to ask which of these might best entail the continued functioning of the ES. Employing a CV approach would then not be based on WTP but allow for respondents to attribute whatever values they feel relevant to a given ES or let them choose between multiple different

³³⁸ Chang, “Value Incomparability and Incommensurability”, 206-8.

³³⁹ *ibid.*, 207.

³⁴⁰ *ibid.*, 208.

³⁴¹ *ibid.*

³⁴² Martínez-Alier et al. “Weak comparability”, 278.

criteria's.³⁴³ In such a view, according to Martínez-Alier et al., we can maintain that value conflict is inevitable, but it is still compatible with rational choice. We just have to employ practical judgement, instead of simply comparing monetary values.³⁴⁴

Such value schemes might involve conflicting appraisal in many scenarios, and the valuers must find compromise solutions in the scenarios when they are making decisions based on these value schemes as there is not necessarily any single solution that optimize all criteria.³⁴⁵ To take this deliberative aspect further, we might hold that in the view of axiological ethics covering considerations are defined by our moral values. These considerations though are socially enacted and defined, and not necessarily prescribed by axiological ethical theory. As such, these criteria for comparison, alongside the decision-making process, could also be taken to be products of deliberation and collective social processes.

This tendency highlights the latter part of Peterson's argument above. As has been shown earlier, according to Peterson moral values are constituted in social acts. Taken together with the plural experience of value and the ontogeny principle most value prioritizations and judgements could be taken to be socially enacted. Because of this, a plural value scheme based on axiological ethical concerns needs to incorporate social practices of value attribution. Instead of individual preferences, the focus needs to be on the collective deliberations, and the compromises as Martínez-Alier et al. note. Valuation based on such a method does, in a sense, become political as it relies on deliberative and communicative practices for value attributions. As plural and deliberative, it also acknowledges that the values we attribute to ES might not necessarily be utilitarian, as people might assign values they find beneficial, but which do not have direct utility for them – for example aesthetic or psychological values.³⁴⁶ While the neoclassical view is explicitly based on the idea of marginal utility, basing our economic methods on a pluralist position on values undercuts the critique mentioned in 4.3 from environmental philosophers who hold that ES is strictly utilitarian.

In such a pluralistic value scheme, we might consider the ethical principles Peterson has forwarded to judge various value attributions and justify some prioritizations. This ensures that acts of value attribution are not solely deliberative. For example, we might ask if

³⁴³ Martínez-Alier et al. "Weak comparability", 281.

³⁴⁴ *ibid.*, 278.

³⁴⁵ *ibid.*, 280-81.

³⁴⁶ See, Wegner and Pascual, "Cost-benefit analysis in the context of ecosystem services", (2011).

some of the values are dependent upon others to help us prioritize. Yet, the central point I want to argue going forward here is that monetary valuations cannot be uncritically employed in such pluralist value schemes. Peterson's axiological ethical position invites us to consider how our value prioritizations impact our moral outlook, our orientations to goods and moral values, and our attitudes towards them. As such, I believe it is in its place to ask: What does neoclassical monetary valuation methods *do to us* as valuers? What orientation towards the world and the values that saturate it does monetary valuation imply?

7.2 The problem with money

Many economists, not limited to neoclassicists, and others might hold that we need to ascribe monetary values to nature and its processes, so that we can be made aware of their importance for the economy. I disagree with this. While exchange-value itself might be adequate to measure part of the value of nature, following the works of Ole Bjerg and Alf Hornborg, I want to point out what they highlight, namely that 'money itself is a problem'. The argument to be made here is that that the way money is structured currently is not a neutral representation of exchange-value, and this raises important questions for an axiological ethical approach. How money is structured in our economy makes it a problematic basis for value ascription, as it presupposes certain orientations and attitudes towards values. Because of this, I hold that we should dispense of monetary valuation, as long as our monetary system is structured in the way it currently is.

Peterson, drawing on the work of Peter Taylor, argues that our actions and thinking are shaped both by our mental ideas, theories, concepts, and so forth, *and* by our practical activity and material embeddedness.³⁴⁷ Let us first consider the mental aspect of this in relation to money – what does the idea of money entail? As mentioned earlier, in neoclassical theory money is a cardinal unit which makes all values and preferences commensurable. This is the idea of modern *general-purpose money*, which functions as a universal representation of economic value.³⁴⁸ Ole Bjerg notes that according to neoclassical economists' money is simply a commodity which makes exchange easier, as it symbolizes the exchange-value of other commodities.³⁴⁹ Thinking of extreme cases though, this idea seems absurd. A chocolate

³⁴⁷ K. Peterson, *A World Not Made for Us*, 156-57.

³⁴⁸ Hornborg, *Nature, Society and Justice*, 1.

This contrasts to special-purpose money, which can only be employed within specific areas of exchange. The central point here is that general-purpose money is the form of money under capitalism.

³⁴⁹ Bjerg, *Parallax of Growth*, 165.

bar and a nuclear bomb can be expressed by the same unitary measurement. We can measure abstract phenomena like health by the cost of hospitals and health services, or war by its impact on GDP or the profits from weapon sales. Hornborg puts this pointedly noting that: “[i]t makes it possible to trade Amazonian rainforests for Coca-Cola and the lives of African children for dividends on Wall Street.”³⁵⁰

Monetary values do not only imply commensurability between values, but also universal *convertibility*. As Hornborg argues, the idea of money is also: “[...] the assumption that anything you have can be exchanged for anything else.”³⁵¹ The point here is that money is not just a cardinal commensurable unit of measurement, but also a representation exchange-value. This contrasts with, for example, a cardinal scale of utility. Even if utility is taken to be a commensurable measure, and this might entail its own problems, it does not necessarily represent exchange-value. It could be argued that by an object having an exchange-value, it is implied that that object is OK to sell and buy. At the very least it could be taken to imply ‘if this thing *could* be sold it would be worth x amount of money’.

The issue here is that we need to be reflective about what the idea of money entails for our orientations as valuers. How does money change our prioritization of different values? As Lina Isacs notes, there is empirical evidence suggesting that the use of monetary measures in valuation exercises has the effect of making people more self-regarding.³⁵² This could be an issue if we ask people to value ES monetarily, as it might influence them to value ES which they directly benefit from more than ES which they only are diffusely dependent upon.

Hornborg points out another way in which the idea of money might affect our value judgements. In the valuating of environmental goods, scholars often argue that one of the issues is that these goods are unpaid or underpaid.³⁵³ As Isacs argues, it is commonly held that we just need to value environmental goods to the ‘correct value’, so that we can recognize their importance.³⁵⁴ Hornborg though, notes that ideas of ‘underpayment’ could be taken as examples of how the idea of money limits our thinking.³⁵⁵ These discussions, about how the idea of money changes how we value, are at this point nascent, but coming from an axiological ethical position we can stress that these are important to have going forward.

³⁵⁰ Hornborg, *Nature, Society and Justice*, 7.

³⁵¹ *ibid.*, 5.

³⁵² Isacs, *Deliberating Value*, 111.

³⁵³ Hornborg, *Nature, Society and Justice*, 166.

³⁵⁴ Isacs, *Deliberating Value*, 16.

³⁵⁵ Hornborg, *Nature, Society and Justice*, 166.

With regards to our practical activity, we might ask what the ascription of monetary values *does* to us as valuers. Aside from the effect the idea might have on us for our value ascriptions, the act of conferring monetary value on to something might itself be a practice which shapes us as valuers and moral agents. Schmidtz notes an example of this, with the dilemma of the novel *Sophie's Choice*:

Sophie's two children are about to be executed by a concentration camp commander. He will kill both children unless Sophie picks one of the two to be killed, in which case the commander will spare the other. To Sophie, each child is beyond price. She does not value one more than the other. In some sense, she values each more than anything. Nevertheless, she does in the end pick one for execution, thereby saving the other one's life. The point is, although her values were incommensurate, she was still able to rank them in a situation where failing to rank would have meant losing both. [...] Of course, the decision broke her heart. As the sadistic commander foresaw, the process of ranking her previously incommensurate values was devastating. At some level, commensuration is always possible, but there are times when something (our innocence, perhaps) is lost in the process of commensurating.³⁵⁶

I hold that this idea, that the practical act of valuation might have impacts on us as valuers, is ripe for further exploration. The point here is to note that from an axiological ethical approach, this question is important to find answers to as we are interested in how we prioritize between values.

Because of these issues, I would argue that we should not uncritically employ monetary valuations as part of pluralistic methods when valuing ES. We need to be aware that the idea of money might itself affect us as valuers, and our value judgements. As such, the act of employing money as a measure of value might impact how we view ES. This is a topic which I hold will need more discussion and research going forward.

7.3 Axiological ethical economics

Outlining a complete system of axiological ethical economics is a tall order. Yet, based on what has been discussed so far, I hold that we might at least endeavour to make headway on such a project. To avoid the problems that neoclassical economics lead to, we fundamentally need to take a pluralistic view towards values where these are seen as incommensurable. We

³⁵⁶ Schmidtz, "Value in Nature", 393-394.

must also recognize that some values are ontological and axiological preconditions for others. Not all values are exchange-values – some are, in a sense, more fundamental. This entails committing to a dynamic mode of valuation, where we are mindful of the prioritizations we make between values. In this view, we cannot, and should not, equate all value judgments to a general scale.

Valuation based on axiological ethics would have to remain sensitive to the difference between goods values and moral values. Rather than following neoclassical economics, which is explicitly based on the moral value of utility, it should not presuppose specific moral values as axiomatic for its approach. Instead, moral value considerations should be an overt part of valuation. Due to the axiological dependence relation, moral values entail specific goods values. As such, we need to clearly state what intentions are valuable. This is so that we can make judgements and economic decisions based on what might be the most effective course of action, given what we intend. These intentions cannot be stated prior to our decisions or economic descriptions, like neoclassicists do when assuming that maximizing marginal utility is the intention of all actions.

An axiological ethical economics would be mindful of the four ethical principles which we initially noted that Peterson set out. By espousing pluralistic valuations, we adhere to the relativist principle. Yet, Rolston's principle and the survival principles gives us reasons to justify making initial meta judgments about the value ascriptions made in valuation. Can the objects or entities materially bear the value qualities we ascribe them? Are the ascriptions of these value qualities temporally contingent? By clearly stating our moral values, and which goods values they entail, we make the ontogeny principle clear, as these values might be conditioned by our social habits and structures. In addition, our valuation methods must be collectively informed. Moral value judgements are part of social acts, not of individual behaviours or preferences.

Taken together, I would argue that this is a politization of economics. As we make our value considerations clear and employ valuation methods which are sensitive to the social nature of moral values, economic approaches become acts of value prioritizations, rather than just descriptive endeavours. This allows us to propose plans and strategies based on what we posit to be valuable, while also facilitating reflection on our moral value judgements. In this way, an axiological ethical economics should include metaethical considerations in its economic approach. Regarding metaethical questions, we also need to grapple with questions about how our quantifiable measures of value, for example money, affects the prioritizations

we make. We cannot uncritically attempt to attribute quantitative units to ES, without being sensitive to how the use of such unit might impact our final judgements.

Lastly, this axiological ethical approach to economics gives us rational tools for justifying the favouring of some value judgements and prioritizations ahead of others. As we remain sensitive to axiological and ontological dependence relations between values, we ensure that we do not background 'lower' and more fundamental values in favour of 'higher' ones. Ultimately, this should recognize that vital values are the foundational prerequisite for the existence of acts of valuation in general. As such, it would need to emphasize the special qualitative importance that these values provide. Valuing ES based on this kind of discursive context and economic approach, might avoid the mistakes that neoclassical methods make.

8. Conclusion

The focus of this thesis has been to uncover some problematic philosophical and theoretical assumptions within neoclassical economics. This has been done by discussing how neoclassical thought and methods shape the valuation of ES. In chapter 5 I discussed that ES can be understood as a type of flow, rather than an environmental good. I argued that neoclassical economists conceptualize flows in a way which make the relationship between these, and exchange-value, strained. Most flows do not directly correlate or provide an exchangeable commodity and require a property-proxy to be evaluated by neoclassical methods. Paired together with the arguments that neoclassical economists sole measure for value is exchange-value, this effectively makes their methods incapable of recognizing the qualitative importance, the use-values, of ES. For neoclassical and capitalist production, ES are essentially unproductive forms of labour, that on their own does not produce economic value.

This problem has been further substantiated in chapter 6 by discussing the neoclassical criteria and basis for value in depth. Neoclassical thought fundamentally assigns to value to nature, all value originates from exchange. Related to this assumption they maintain an idea of money being a cardinal measure which can express all other values. This entails that all individuals have a WTP for various objects, phenomena, goods, and services. By these assumptions neoclassicists prescribe an orientation towards value where exchange-value is held as the only rational expression of worth. This leads to problems for the methods they employ, as they either inadequately value ES by referencing exchangeable commodity-proxies, which does not recognize the vital value of the underlying process of the service, or they resort to arbitrary commodifying practices like CV which ad hoc assigns exchange-value. Based on this, I concluded that neoclassical practice necessarily leads to commodifying ES, as it has no other options than affixing arbitrary exchange-values.

Fundamentally, it has been argued that neoclassical economics does not recognize the vital values of ES – the fact that they are ontological and axiological preconditions for both the economy as a whole, for our continued human existence, and for the process of valuation at all. Following these insights, I have proposed some considerations which an alternative economic practice, based on axiological ethics, must incorporate to avoid making the same mistakes as neoclassical economics.

The larger project here has been to engage philosophically with economic thought, to point out that economics is a discipline which presupposes some moral and philosophical assumptions. Yet, these assumptions are only theoretically predetermined, and not given

based on the topic economics deal with. Because of this, we are free to conceptualize new economic paradigms, based on what we find morally valuable. The larger metaethical consideration for such creative philosophical endeavours, though, is that they need to recognize the ontological preconditions for valuation itself. Economics cannot tenably deny the value of the conditions that make the economy, or the act of valuation, possible. Moral values are socially determined, and a morally informed economic approach can thus take many forms. What I hold to be the main takeaway from an axiological ethical perspective, though, is that there are some logical and rational limits which could be argued hold in general for these possible mutations of economic theory.

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