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Contributions to Ideology-Critique of Neoclassical Economics: On the Apologetic Tendencies of Neoclassical Explanation

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Abstract:

Ideologiekritik als eine bestimmte Form der Kritik geht über reine Methodenkritik hinaus. Sie verlangt danach, ihr Objekt der Kritik, die Ideologie, gesellschaftlich zu verorten. Demnach besteht sie immer aus zwei Aspekten. Einerseits ist Ideologie als kausal aus den gesellschaftlichen Verhältnissen zu verstehen. Andererseits gilt es die Notwendigkeit ideologischen Denkens für die Existenz dieser Verhältnisse zu zeigen. Vernünftige Ideologiekritik kritisiert demnach immer sowohl die Ideologie, also das verformte Denken, als auch die dafür ursächlichen gesellschaftlichen Verhältnisse. In dieser Arbeit zeige ich die apologetischen Tendenzen neoklassischer Methodik, dem Gleichgewicht, welches wesentlich mit dem Konzept des Marktes und dem rationalen Individuum zusammenhängt. Dies verlangt nach einer historischen Definition des Gegenstands der Kritik. Dementsprechend muss die Vorstellung der sozialen Harmonie als über den Markt hergestelltes Resultat individuellen freien Güteraustausches als ihre geschichtliche Logik begriffen werden. Der neoklassische Selbstanspruch einer Wissenschaft, die positive von normativer Analyse trennt, also einer wertfreien Wissenschaft, kann nicht aufrechterhalten werden. Die inhaltliche Logik der sozialen Harmonie entspricht methodisch dem Erklärungskonzept des Gleichgewichts, eines ewigen Zustands gleichgewichtiger Kräfte. Gleichzeitig ist das Gleichgewicht eine methodologische Notwendigkeit. Erklärungen anhand des Gleichgewichtskonzepts und seiner angeblich universellen Anwendbarkeit sind zwanghaft, sie pressen das zu erklärende Phänomen notwendigerweise in eine bestimmte, ihm womöglich unangemessene, Form. Selbst die kritischsten Auslegungen neoklassischer Erklärung sind systematisch nicht in der Lage über das Bestehende hinaus zu denken und tendieren dazu, es zu rechtfertigen. Nichtsdestotrotz, macht es einen wesentlichen Unterschied, ob neoklassische Erklärung darin besteht, beobachtete Phänomene zu rationalisieren oder die logische Intelligibilität hypothetischer Welten zu untersuchen. Letztlich enthält jedoch jede Erklärung Aspekte von beidem, wogegen eine vernünftige Vermittlung beider Zugänge in der Neoklassik nicht gegeben ist. Diese ausstehende Vermittlung verlangt nach einer technokratischen Lösung. Entweder besteht Erklärung darin, das Bestehende zu rationalisieren und damit ganz grundsätzlich zu rechtfertigen. Oder aber darin, eine hypothetische Welt rational zu konstruieren, die keine Korrespondenz mit der Erfahrungswelt hat, in welchem Fall die technokratische Lösung darin besteht, die notwendigerweise wünschenswerte Modellstruktur der tatsächlichen, defizitären Welt aufzuzwingen.

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The process of writing this thesis took considerably more time than I intended to invest in it. This had several reasons. On the one hand I was frequently confronted with the usual self-doubt of demonstrating ones own thoughts, which let me re-structure the thesis over and over again. On the other hand, I was simply confronted with the material reality of the labor market's cruelty (personal experience in this respect very little corresponds to neoclassical theory). However, there were other circumstances that let me, again and again, recognize the insignificance of an academic degree. Some of them fortunate, others not so much. Finally, the usual but nevertheless extremely disconcerting fear of what comes after graduation, was a constant decelerator of the creative process. Still, I have come to complete the work and there are several people that I owe much gratitude. First and foremost my friend and supervisor, Konrad Podcizek. Not only did he give me all the possible freedoms in the whole process of conceptualizing and writing the thesis – with all the positive and negative implications such freedom necessarily entails – but he also provided lots of important impulses for the work. It is very rare, at least it was in my experience as a student of economics in Vienna, to have the possibility to engage intellectually with someone who has not only an extremely specialized knowledge in general equilibrium theory but at the same time of Marx' Critique of the Political Economy. Without the frequent discussions we had about both of those theories, I would probably be even less satisfied with the result of my work than I am now. Most of all, however, I appreciate the anti-hierarchical approach Konrad always had towards not only me, but all of his students. I consider this a necessity for the possibility to develop and pursue own ideas.

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1 Introduction

Neoclassical economics, in particular general equilibrium theory, is the contemporary dominant economic theory about capitalist society, or in its terms: the private ownership market economy. It provides fundamental theorems about the desirability of a society organized around markets and private property. Its role as the dominant thought-form, therefore, is similar to that of Classical Political Economy in the 19th century. Marx developed in his Critique of Political Economy in 1867 a critique of capitalist society (Political Economy) that was simultaneously a critique of its dominant thought-form (also Political Economy). From that critique several theorists have tried to extract a specific method of critique; that of ideology-critique. From the point of view of such a critique I reevaluate existing critiques of neoclassicism, as well as the neoclassical self-perception according to some of its theoretically most involved proponents. The aim of this thesis is to contribute to a historicization of an ideology-critique of contemporary capitalism and contemporary economic thought. Such a project, in all generality required, goes far beyond the scope of any one thesis alone. The focus of this thesis consists, in particular, of a critique of neoclassical methodology from the perspective of ideology-critique. This approach is different from orthodox debates about the philosophy of economics because it is not primarily concerned with the rational reconstruction of the scientific process. It does not require to ask, whether or not neoclassical models are explanatory. Rather, it takes its explanatory status as given, and asks what such explanation entails and how it relates to the phenomenon it seeks to explain. That the explanatory status is given is a social fact. There is dominance in the academia of that particular school of economic thought and economic policies are designed with reference to them. The power such thought societally has establishes its explanatory intelligibility. Criticizing neoclassical methodology as ideology makes it necessary and allows us to consider it as permeated by substantive and normative categories instead of as a neutral instrument for arbitrary political preferences. For a sophisticated critique of methodology it is necessary to understand the historical rationale behind the development of neoclassical economics. It requires to define its object historically and understand how this methodology relates to its object and how it became dominant. In this thesis, I show that neoclassical methodology, the equilibrium method, on the one hand tends to be apologetic of the status quo. On the other hand, even in its most critical versions, is limited with respect to its critical potential. The claim that the method is universally applicable and eclectic concerning what it explains is shown to be false in this thesis. At the same time, I reject reductionist or purely functionalist critique of neoclassical theory and methodology. As an ideology, it is not only apologetic of society the way it is, but it is considered to be specifically caused by that society. Considering it as ideological, in the end, means to take it seriously because ideologies are not only untrue but also true at the same time. They carry some promise of a good society based on rational grounds that constitute some societal consent. The critique takes that promise seriously in that it tries to show how it is systematically undermined by the very societal process it inhabits or by its own scientific standards. This means to reveal immanent contradictions in neoclassical theory. Neoclassicism falsely imagines itself to stand outside that societal process but its method is itself, to some extent, a product of it. Ultimately neoclassical methodology is very much tied to

the existing societal relations, in that it not only tends to be apologetic of but also systematically cannot think beyond them. In that sense, it is ideological. The structure of this argument is developed in this thesis in the following way.

In chapter 2.1 I briefly reconstruct the historical origins of modern ideology-theory and ideology-critique. The influence of Marx' critique of the Political Economy on it is emphasized. In chapter 2.1.1 I discuss the societal conditions under which ideologies can exist and how science itself can contain ideological expressions. What it means that ideologies are false, or at least in some sense not true, and what that tells about the underlying societal relations is discussed in chapter 2.1.2. A much-discussed illustration of how ideology-critique proceeds is provided in chapter 2.1.3. Marx' critique of the bourgeois normative ideals of freedom and equality is sketched in order to grasp the abstract definition more concretely. Also, this example will be referred to several times throughout the thesis since it is a main point of reference in the critical literature. Following this concrete illustration of the method of ideology-critique, in chapter 2.2 I then refer to contemporary Critical Theorists and Critical Realists and their understanding of the method of ideology-critique, which they claim to have reconstructed especially from Marx' critique of the Political Economy. There it is argued what it means that a belief is false, how that falsity can be caused by societal relations, and how a critique of the ideology is simultaneously a critique of the underlying relations. The characterized approach of ideology-critique is very broad and cannot be reasonably addressed within this thesis in all generality required. Therefore, I emphasize in chapter 2.3 a certain aspect of it that reasonably can be. I argue that the critique of immanent contradictions, contradictions between a theoretical claim and its systematic undermining by theory itself, is an important moment of ideology-critique. One that actually can be done mostly with reference to theory alone, although a fully developed ideology-critique requires a critique of contemporary societal relations as well. Nevertheless, division of labor in the broader project of ideology-critique is not only possible but also necessary. Conceptual issues with the approach of this thesis are addressed in chapter 2.4. In particular the speculative character of the method of ideology-critique as well problems with reconstructing somewhat a-historically a specific method of critique from a historically very specific critique are mentioned.

In chapter 3 I develop an elaborate definition of my object of critique, neoclassical economics. I argue contrary to many critics that the term neoclassical is neither useless nor overcome and I refuse the mere reference to the mainstream in 3.1. It is necessary to understand the object of critique historically. It can neither be defined purely on methodological grounds nor can it be narrowed down to a very specific historical period, that of early marginalism. The historical rationale behind the development of neoclassical economics, as developed in chapter 3.2, is a notion of social harmony achieved through commodity exchange on markets by rational self-interested individuals. I share this view of defining neoclassical economics historically with other critics, which I frequently refer to in my definition. However, I argue that the definition and critique is rarely extended to include general equilibrium theory. Extending the historical definition such that it understands general equilibrium theory as the historical and logical culmination point of neoclassical theory is the aim of chapters 3.3 and 3.4. Mainly regarding the self-perception of general equilibrium theorists I

characterize the ingredients of general equilibrium theory. Ultimately, the Fundamental Welfare Theorems constitute the modern and logically consistent version of the invisible hand argument of markets. It is shown, that general equilibrium theorists very well understand that historical lineage and are quite critical about their own theories. For instance, they acknowledge that neoclassical theory has very little to say about money, production, and dynamic laws of capitalist society. However, they do not draw conclusions from that, despite that the theory cannot be considered to support the desirability of a market system based on commodity exchange. Critics of neoclassical economics in general, and sometimes of general equilibrium theory in particular, draw more radical conclusions. In chapter 3.4 I show how they provide theoretical reasons for some immanent contradictions, such as the fundamental static character of neoclassical equilibrium. The fundamental lack of dynamism, for instance, is considered a result of the specific individualist method that neglects production and focuses solely on exchange. Some criticism, such as Bukharin's critique of early Austrian marginalism for instance, can be adopted to target general equilibrium theory as well, as I show there. Nevertheless, even among critics explicit ideology-critique of the methodology is rarely pursued. In chapter 4 I develop a specific critique of method. The mode of explanation of neoclassical economics is that of equilibration. It is shown that this not only has major technocratic implications but also that this methodology carries a lot of substantive content. It is not, as it might fit the neoclassical self-perception, eclectic and equally applicable to any phenomenon. The historical rationale of social harmony and its apologetic tendencies partly carry over to the method itself.

In the beginning, in chapter 4.1, I differentiate the explicit critique of methodology from more mainstream discussions of contemporary philosophy of economics. Those deal with the question of whether or not neoclassical equilibrium is explanatory at all. Contrary to such rationalization of scientific explanation, I consider its explanatory status as given. I am interested in what the economist claims to explain when she builds a theoretical model and what that mode of explanation entails. That the method of equilibrium entails no causal claims whatsoever is shown in chapter 4.2. To explain a phenomenon as an equilibrium outcome of the market, and any neoclassical explanation necessarily does so, means to define appropriate initial conditions and invariants that pin down the system of equations. An equilibrium is nothing but the solution to a system of linear equations, arising from individual constrained optimization. Hence, it becomes clear that explaining something never provides insights about how something came into existence but only under which conditions, i.e. assumptions on preferences, technology, and other invariants, the outcome could have been the solution to this system of equations. There is no room for dynamics because the axiomatic definition of the problem as such knows no history or temporal order. Equilibrium is imposed upon the phenomenon. That the imposition of an equilibrium immediately entails the imposition of a market structure is argued in chapter 4.3. This universal imposition of the market is already provoked by the abstract definition of the commodity space, according to which anything can be a commodity. This generalizes the mode of exchange to every possible aspect of reality. Everything that is explained is considered the result of mutually beneficial exchange. Chapter 4.4 serves to reveal the abstract apologetic tendencies of the status quo of such an entirely static mode of explanation. It is argued that the abstract reconstruction of any phenomenon as the equi-

librium outcome of mutually beneficial exchange renders that phenomenon permanent. Since there is no dynamic counterpart to the static equilibrium concept, and equilibrium is a situation of balanced forces, one where no individual can unilaterally be made better off without hurting someone else, the explanation is immediately apologetic of the status quo on an abstract level. The supposedly purely positive method of equilibrium is indeed normatively permeated and tends to justify what it explains. In chapter 4.5 I investigate what it means for the rational individual to inhabit such a world of permanent unchangeable existence. I argue that equilibrium constitutes for the individual an optimal adjustment strategy. Adjustment, however, means to accept the world as it is. Equilibrium, therefore, imposes conformity. The homo oeconomicus, the scientific version of the self-perception of the white bourgeois man of early modernity, with his purely instrumental subjective rationality, faces society as a naturalized or reified world. Society is, just as nature, an unchangeable brute force that one can only try to control by optimally adjust to it. Furthermore, this entails that also other individuals are considered mere instruments for pleasure satisfaction. The neoclassical economic subject is a pleasure calculating machine subordinated to its own preferences and threatened by other individuals and the world it inhabits. This means that an explanation entails guidelines about how an individual is supposed to act under given conditions. An explanation, therefore, makes the problem the economic subject faces, so to speak, permanent and has little to say why it faces this problem in the first place or how it could liberate itself from it. The supposed dichotomy of positive and normative economics cannot be upheld concerning the explanatory method. At the very end, in chapter 4.6, I introduce an analytical distinction within the spectrum of neoclassical explanation. This becomes necessary because neoclassical economists can approach reality very differently. On the one hand, such as shown with reference to general equilibrium theorists in chapter 3.3, they can have a very humble interpretation of their models. They can argue, that those models do not, and cannot, represent reality as it is. In that sense, formal model building is never a blueprint for direct political action, rather it serves as a judge of actual policy. Precisely by showing how narrow the conditions in the model are that are necessary for the existence of efficient equilibria, and that in reality such conditions can never prevail, general equilibrium theory becomes a critique of the idea of social harmony itself. Such explanation that deals with the intelligibility of hypothetical worlds, i.e. the conditions under which a specific equilibrium can even arise, without immediate correspondence to the phenomenological world, I call Platonic neoclassicism. In contrast, vulgar neoclassicism deals with actual observed phenomena and rationalizes them. Explanation then consists of identifying initial conditions and invariants that render the observed an equilibrium outcome. Vulgar neoclassicism is always immediately apologetic of the phenomenon it seeks to explain, it can never criticize what it explains because it makes what it explains the eternal rational outcome of individual optimization. Its explanation is affirmative. However, this duality constitutes a unity, in that every explanation has always aspects of both. There is never a model that has no correspondence to the factual world at all, and also never a model that corresponds to it perfectly. In chapter 4.6 I discuss those two poles with concrete examples in order to reveal their technocratic implications. Finally, I conclude the thesis in chapter 5 with a summary of the main findings and possibilities for further research.

2 Ideology and Ideology-Critique

2.1 Ideology-Theory, Marx and Necessary False Consciousness

Discussing the approach of ideology-critique obviously requires first to be clear about what ideologies are. Ideology-theory is its prerequisite. A detailed and elaborate introduction to it is provided by Eagleton (Eagleton, 1991). A contemporary introduction is given by Stahl (2016), where Marx' influence in the foundation of the project of ideology-critique, with his description of it as *necessary false consciousness*, is emphasized. According to Stahl, ideologies are sets of beliefs, attitudes, self-descriptions and conceptions of needs that influence not only individual and collective action of a society or particular social groups, but also categorical forms in which can be thought and acted upon. Furthermore, they are part of a social process (2016, p. 239). He characterizes the development of Marx' ideology-theory from his early works up until the *Capital* (MEW 23). Four aspects from Marx' theory are, as Stahl argues, still part of any contemporary ideology-theory. First, ideology means that the form or content of consciousness is in some sense false and can be corrected by critique. It is therefore a pejorative term. Secondly, ideologies are forms of consciousness that are specifically societally caused. Their critique, hence, requires knowledge of those societal causes. Third, ideologies are supportive of the social order and its reproduction, certain institutions or social groups or classes benefit from their existence. They are stabilizing for and apologetic of the status quo. And fourth, ideologies are not simply false in that they carry untrue content or have a false cause. Rather, they misunderstand themselves as autonomous from their societal causes. They are illusory about their independence (Stahl, 2016, p. 239). For understanding what it precisely means for an ideology to be false, it is necessary to consider the historical specificity of ideologies. It means to consider the question, under what societal conditions ideologies can exist.

2.1.1 Ideologies and Science as Historical Products

As consciousness that falsely imagines itself as autonomous from a general societal process, ideologies do not exist in any societal formation. Specific societal circumstances give rise to such an imagination of a separation from consciousness and material practice. Such separation can only occur in societies with sufficiently advanced division of labor, where mental and physical work become sufficiently separated. Only then, consciousness even gets the opportunity to imagine itself as autonomous from societal praxis¹ (cf. Adorno, 1972a, p. 506f.; Stahl, 2016, p. 242). It is precisely the lack of this reflexive insight of the own positioning of theoretical reasoning within society, with all its conflicting interests and material coersions, that Horkheimer draws the distinction between Critical Theory and Traditional Theory (cf. Horkheimer, 1937; Jung, 2018, p. 131f.). Traditional Theory is subject to the imagination of being external to the society it aims to study. It will be shown frequently in this thesis, that neoclassical economics, even in its most critical vari-

1 "Von Ideologie läßt sich sinnvoll nur soweit reden, wie ein Geistiges selbständig, substantiell und mit eigenem Anspruch aus dem gesellschaftlichen Prozeß hervortritt. Ihre Unwahrheit ist stets der Preis eben dieser Ablösung, der Verleugnung des gesellschaftlichen Grundes. Aber auch ihr Wahrheitsmoment haftet an solcher Selbständigkeit, an einem Bewußtsein, das mehr ist als der bloße Abdruck des Seienden, und danach trachtet, das Seiende zu durchdringen." (Adorno, 1972a, p. 506f)

ants, sticks to a mode of reasoning that cannot be decoupled from markets and at the same time considers itself universally – in the sense of trans-historically – true. Critical Theory on the other hand understands itself as a part of society, it is never purely descriptive of its subject. Rather, it aims to intervene in the very process it is embedded in. Traditional Theory, or more generally science, can be ideological. For if ideologies have a historic specificity, ideological scientific theories have it as well. Science itself is a product of history. Critical Theory, which has its roots in Marx' critique of the political economy, has as an object of critique not only society, but also those ideological scientific theories that are apologetic of it (cf. Eagleton, 1991, p. 138).²

However, for consciousness to imagine itself as autonomous is not a complete illusion. Ideology is neither the whole truth, nor is it a lie. It is, as Adorno argues, true and untrue at the same time. This is precisely the reason, why it must be taken seriously. Its untruth lies in the self-proclaimed but *unrealized* autonomy of thought. At the same time, the claim of such autonomy, one that claims reason not to be merely the product of material conditions, is precisely the moment of truth it carries. This desire for and anticipation of real autonomy is its connection to truth (Adorno, 1972a, p. 506f.).

It was argued that ideologies are apologetic of and stabilizing for the status quo. However, that means that society, the status quo, in itself must be in need for such a mechanism in the first place. Ideologies, therefore, exist only in societies that are not liberated. A society without oppression is in no need of its own mystification or apologetics. Without the glimpse of the idea of justice that ideology correctly identifies, such mystification or justification is impossible³. Where the ideology identifies a problematic constitution of society, it does so with reference to that idea of justice. It recognizes injustice and justifies it with its own idea of justice. Ideology therefore carries an *immanent contradiction*. An important aspect of ideology-critique, as I will elaborate in more detail below, consists precisely of revealing such immanent contradictions.

A last but important note on the historic specificity of ideologies must be delivered at this point. Engaging in ideology-critique and confronting consciousness with its own standard of truth is only meaningful if that consciousness has a rational moment. Conspiracy theories, for instance, cannot be subject to the same critique as ideologies. They are deeply irrational. It is precisely the existence of such a rational moment, and hence the idea of justice or liberation, which allows to even form an immanent contradiction. In section 2.1.3 I will sketch how Marx developed such immanent critique for the case of the bourgeois ideals of freedom and equality. Note, however, that societies and their corresponding thought-forms need not carry any rational moment. One cannot reveal a rational contradiction between the completely irrational beliefs of the Nazi-Regime and its material practice (Adorno, 1972a, p. 498). There is no claim of rationality or consistency that

2 "Wie Marx die Gesellschaft kritisiert, so kritisiert er ihre Handlanger, die Theorien: Somit sind diese Ideen, diese Kategorie, ebensowenig ewig wie die Verhältnisse, die sie ausdrücken. Sie sind historische, vergängliche, vorübergehende Produkte." (Adorno, 1972b, p. 80)

3 "Als objektiv notwendiges und zugleich falsches Bewußtsein, als Verschränkung des Wahren und Unwahren, die sich von der vollen Wahrheit ebenso scheidet wie von der bloßen Lüge, gehört Ideologie, wenn nicht bloß der modernen, so jedenfalls einer entfalteten städtischen Marktwirtschaft an. Denn Ideologie ist Rechtfertigung. Sie erheischt ebenso die Erfahrung eines bereits problematischen gesellschaftlichen Zustandes, den es zu verteidigen gilt, wie andererseits die Idee der Gerechtigkeit selbst, ohne die eine solche apologetische Notwendigkeit nicht bestünde" (Adorno, 1972a, p. 498)

might be contested⁴. Dictatorships do not need, nor do they allow reason to consider itself outside the social process. There reason is an immediate instrument of subordination. In short, ideologies as an object of critique can and need to be taken seriously from a rational standpoint because they carry a promise of liberation, according to which they can be judged. It is known, and will be shown later, that this promise in the case of neoclassical economics is social harmony achieved through the institution of market exchange.

2.1.2 Societal Causes and Functionality of Ideologies

The understanding of ideologies that I refer to in the following are reformulations of Marx' necessary *false consciousness*. They are reformulated with the aim of clarifying some confusion that comes with Marx' definition, or at least interpretations of it. Some authors, in particular Jaeggi and Bhaskar, provide very similar definitions of ideologies, in their attempt to reconstruct Marx' method of ideology-critique. Their definitions of ideology can be termed as *systematic distortions of perceptions of societal relations* or *societally induced, distorted explanations of the social* (cf. Bhaskar, 1998a, 1998b; Bhaskar and Collier, 1998; Jaeggi, 2013; Lindner et al., 2017). Those definitions are elaborations of Marx' definition of necessary false consciousness. They are supposed to highlight the difference between ideologies as a specific mode of deteriorated reasoning and the common-sense use of the word. Whereas the latter use of the word frequently means something like a political preference or even an entirely irrational belief. The former considers ideologies as ideas about social reality that are specifically related to that social reality in that they are caused by it and play a role in its reproduction. They provide an interpretation or systematization of society that in some sense renders it rational, but in doing so, misrepresents it⁵. In that sense, ideologies provide for social actors also a reasonable self-perception of themselves in society. They provide a framework for potential action under given conditions of societal constitution.

This characterization is quite abstractly formulated and requires closer elaboration in order to explain what it exactly means that ideologies are societally induced and distorted or necessary and false. I will try to make this abstract definition more accessible by providing a concrete example of how Marx pursued such critique in section 2.1.3 below.

The above formulation indicates what was already argued before: that not only is an ideology interrelated with society and its institutions but it is in some specific sense also not true⁶. It is in some sense co-constitutive of that reality it provides ideas of or that it rationalizes. It is not simply a compilation of random ideas that we might have about the society we live in. In fact, ideologies are in some sense adequate of that society

4 "Die Kritik der totalitären Ideologien hat nicht diese zu widerlegen, denn sie erheben den Anspruch von Autonomie und Konsistenz überhaupt nicht oder nur ganz schattenhaft." (Adorno, 1972a, p. 499)

5 This misrepresentation can have various forms. According to Stahl, they can, among others, be pure cognitive errors, correct reflexions of a 'false' reality, functional for a 'false' constitution of society or the expression of particular interests that falsely claim generality (Stahl, 2016, p. 16f). Eagleton similarly provides a discussion on the different moments of falsehood ideological thoughts can have in his introductory book on ideologies (Eagleton, 1991, p. 24f).

6 "Unwahr werden eigentliche Ideologien erst durch ihr Verhältnis zu der bestehenden Wirklichkeit. Sie können »an sich« wahr sein, so wie die Ideen Freiheit, Menschlichkeit, Gerechtigkeit es sind, aber sie gebärden sich, als wären sie bereits realisiert. Die Etikettierung solcher Ideen als Ideologien, die der totale Ideologiebegriff gestattet, zeugt vielfach weniger von Unversöhnlichkeit mit dem falschen Bewußtsein, als von Wut auf das, was in sei's auch noch so ohnmächtiger geistiger Reflexion auf die Möglichkeit eines Besseren verweisen könnte." (Adorno, 1972a, p. 505)

and at the same time inadequate (Jaeggi, 2013, p. 241). They represent certain aspects of reality and neglect others. And those represented, are represented in a partially incorrect, or distorted, fashion. Eagleton summarizes the appeal ideologies as adequate beliefs have on the subject in the following way:

“In short, successful ideologies must be more than imposed illusions, and for all their inconsistencies must communicate to their subjects a version of social reality which is real and recognizable enough to be simply rejected out of hand. They may, for example, be true enough in what they assert but false in what they deny” (Eagleton, 1991, p. 15)

However, the misconception or misrepresentation of reality within an ideology has little to do with some intellectual defect of individuals or social entities inhabiting this reality. Rather, it is society itself, and the collective material practices we all engage in, that gives rise to an ideology and at the same time is in need for mystification. Ideologies understood like this are (i) produced by the social relations in question and (ii) are necessary for the continuing existence of those relations – its reproduction. Note how this precludes us from understanding ideologies as purely functional. They are not simply a tool of the powerful to oppress the masses. However, it is entailed in this definition that the concept of ideology only makes sense in societies that are in some sense ‘false’ themselves. This means that they, on the one hand build upon certain norms that are in conflict with their material structure, and on the other hand inhabit material contradictions. They rationalize, or naturalize, the exploitative or oppressive structure, which is social and can in principle be abolished, and legitimize it. This is the reason why ideology-critique is always critique of domination and subjugation⁷ (Jaeggi, 2013, p. 236). It is important to note, however, that ideologies are not produced in a conspiratorial sense. It is not the case of a few clever apologists coming together and developing a system of beliefs to justify the way society is constituted. Rather, society itself, due to its constitution, produces the ideology relatively independent of individual intentions. Criticism of such purely functional understandings of ideologies can be found for instance in Stahl (cf. Stahl, 2016, p. 16). Some prominent critics of neoclassical economics, or in their own words *mainstream economics*, like Tony Lawson, explicitly reject to consider neoclassical economics as ideological. Allegedly this would mean that neoclassicals, when building their models, consciously try to defend capitalism (O’Boyle and McDonough, 2011, p. 9f), which according to his narrow conception of ideology, he correctly asserts as ‘overly conspiratorial’ (in O’Boyle and McDonough, 2011, p. 10). This is clearly not the case for all, not even for most neoclassicals. A proper understanding of ideology, however, highlights the structural dimension of it. In that sense, it is not of particular interest whether neoclassical economists *want* to defend capitalism or not, ideology-critique is not an inquiry of political beliefs of certain scientists⁸. Consider for example the work of John Roemer, an analytical Marxist,

⁷ ‘herrschaftskritisch’ in the original.

⁸ Although quite some influential neoclassical economists were very open about their anti-socialist and anti-revolutionary sentiments. For instance Nassau Senior, the first ever ordinary professor for Political Economy (cf. Hunt and Lautzenheiser, 2011, p. 138ff), or Bastiat who developed his theories in a time of increasing spread of socialist ideas and politics (cf. Hunt and Lautzenheiser, 2011, p. 174ff). Also Marshall (cf. Hunt and Lautzenheiser, 2011, p. 298ff) and his student Keynes (cf. Hunt and Lautzenheiser, 2011, p. 398ff) were very open about that. Maybe the most significant example was Pareto, who is by some considered an intellectual precursor of fascism (cf. Cirillo, 1983; Zanden, 1960).

who tried to reformulate central results from Marx' critique of political economy in the modern axiomatic general equilibrium framework (Roemer, 1985). That general equilibrium theory is allegedly eclectic regarding the application of its method and central concepts – it supposedly can be applied by Marxists and right libertarians as well – might seem proof enough for the non-ideological character of it. As I will show in this thesis, however, neither is it eclectic, nor is it possible to formulate a dynamic theory of the law of motions of capitalism by it, as arguably Marx did. Method itself is ideological, as I claim to show in this thesis.

2.1.3 An Example of Ideology-Critique

Marx' influence in the project of ideology-critique is undeniable. At this point I want to briefly sketch Jaeggi's illustration of Marx' ideology-critique of the bourgeois normative ideals of freedom and equality (Jaeggi, 2013, p. 239ff) in order to make the elaboration so far more concrete.

The ideals of freedom and equality are essential for the self-understanding of bourgeois society, but they manifest within it in a contradictory way. According to Jaeggi, Marx shows how those ideals are, what was considered in the above with Adorno, true and untrue at the same time (Adorno, 1972a). They are true in the sense that individual freedom and equality by law must be and actually are prevalent in bourgeois society. Individuals with juridical equal rights face each other on the market and sign contracts voluntarily. The sphere of commodity exchange is indeed, according to Marx, a sphere of freedom and equality⁹. Freedom, since buyer and seller are constituted by a contract following their free choice. Equality, since they relate to each other only as equals, as owners of commodities. And that freedom and equality of exchange, culminating in social harmony, are guided solely by the private self-interest (MEW 23, 189f). However, the same system building upon and assuring juridical equality and individual freedom on the market produces material inequalities and coercion. Marx shows this in his analysis of the production process, which goes beyond the sphere of circulation¹⁰. The analysis of the production process reveals, according to Marx, how through the market system the very ideals of freedom and equality are undermined. Laborers are free, but in a double sense. They are not only free as individuals, but also free of any means of production. They are, in contrast to owners of production, forced into selling their only commodity, labor power, for their subsistence. The process of labor power consumption is one of exploitation for profit accumulation. Therefore, inequality is immanently produced by the same system that requires and assures (juridical) equality. Political economists theorizing only the harmonious sphere of circulation are not only subjected to ideology but (unconsciously) (re-)produce and justify it. Note, how ideological interpretations of reality are not made up out of thin air, according to Marx, but in some sense can capture certain aspects of it while neglecting others. They provide

9 „Die Sphäre der Zirkulation oder des Warentausches, innerhalb deren Schranken Kauf und Verkauf der Arbeitskraft sich bewegt, war in der Tat ein wahres Eden der angeborenen Menschenrechte. Was allein hier herrscht, ist Freiheit, Gleichheit, Eigentum und Bentham!“ (MEW 23, 189)

10 Or more precisely, is not within circulation and not not within circulation. It is not within circulation because commodities are only carried to the market (circulation) once they are produced. Production is in that sense a presupposition of consumption. However, it is also not not within circulation since labor power as a commodity needs to be purchased at the market. The purchase of the commodity of labor power constitutes the production process and only via circulation can the production process realize its purpose. This contradiction is resolved by the specificity of the commodity of labor power as being the only commodity creating value with its consumption. (MEW 23: 180ff)

us with an interpretation of reality that systematically misrepresents it. Nevertheless, and that is important, they still provide us with a structured explanation of the world around us and establish a frame for acting within it. Individuals actually understand themselves as free and equal, because in the sphere of commodity exchange they are. Hence, they are important for the self-conception of social entities in society and for the ability of social actors to act.

This can only be a sketch of how ideology-critique might proceed. In the following I review how critical theorists today claim that contemporary ideology-critique must operate, and in particular what aspects are relevant for my thesis. Also, I discuss conceptual issues with defining ideology-critique as a method as such. This in itself is to some degree, a-historic. Nevertheless, dealing with immanent contradictions of scientific theories, I think, is still a prerequisite for any critical theoretical work.

2.2 Ideology-Critique

The two main sources for this chapter are Jaeggi (Jaeggi, 2013) and Bhaskar (cf. Bhaskar, 1998a, 1998b; Bhaskar and Collier, 1998). They both try to reconstruct from Marx' and other critical theorists' work an abstract mode of critique as a method. According to them, very briefly, ideology-critique is a theoretical mode of explanation that works in the following way: First, it stands outside the positivist dichotomy of normative and non-normative statements or facts and values. It employs a mode of explanation that simultaneously analyzes and criticizes (Jaeggi, 2013, pp. 237, 242ff), or explains¹¹ and criticizes (Bhaskar, 1998b, p. 409f). Secondly, it tries to explain (and simultaneously criticize) the underlying social relation via a critique of the corresponding ideology. It is hence twofold in two ways: (i) explanation (or analysis) is always critique and (ii) critique of ideology is simultaneously critique of the underlying societal relation. An adequate ideology-critique, therefore, not only shows the necessity of an ideology emerging from the societal relations in question – this is the causal aspect of ideology-critique, seeking to explain how a distorted conception of reality is generated by the societal relations. This causal aspect corresponds to the aspect of *necessity* in the definition of ideologies as necessary false consciousness. At the same time it also seeks to explain how the relations in question depend upon the ideology, i.e. why it is necessary for their existence to systematically distort reality – the functional aspect of ideology-critique (cf. Bhaskar, 1998a, p. 241ff; Jaeggi, 2013, p. 242f). The emphasis of this double-aspect preserves the critique from a functionalist fallacy, according to which ideologies might be explained entirely by their functionality to the status quo. This is a conception that is overly simplistic and does neither allow for contingency in the formation of ideologies, nor for a clear conception of non-ideological beliefs (Stahl, 2016, p. 244f).

That a theory at the same time explains and criticizes, must appear absurd to the positivist educated reader. Her view of science is one that is supposedly purged from normativity and deals with it only instrumentally: any normative request can be addressed scientifically only insofar as science can provide the 'best'

11 Bhaskar and other proponents of the Critical Realist philosophy of science use the term explanatory critique instead of ideology-critique. I want to stick to the term ideology-critique, since it refers immediately to the object of critique and highlights the specificity of this mode of explanation and its historical lineage. However, both terms mean the same, as emphasized by german speaking critical realists (Lindner et al., 2017, p. 51).

(whatever that might mean in the particular case) way to achieve or evaluate it. Those economic methodologists that understand that ideology has its place in neoclassical science, believe it does so only due to external, unscientific disturbances, as Hausman and McPherson do:

“Economics can unfortunately do great harm, but we think that it can do good, too. It is a sharp two-edged sword that needs to be mastered and handled with care. Economics has done harm mainly because it has been misunderstood or misused by political and economic interests. There is little that philosophers or economists can do to combat powerful interests who are ready to exploit any theory – economic, political, even philosophical – to rationalize their ambition and greed. But philosophers and economists can clarify the interpretation of economic theory and thereby remove confusions and make its ideological misapplication at least a little bit more difficult.” (Hausman and McPherson, 2008, p. 226f)

The normative request or statement is here external to the scientific analysis, it is not more than an additional boundary condition. Scientific theories are instrumental in achieving this external normative request, according to Hausman and McPherson’s understanding of economics. However, authors engaged in the traditions of Critical Theory (cf. Horkheimer, 2004, 1937) or Critical Realism (cf. Bhaskar, 1998b) argue that proper scientific explanation overcomes this dichotomy, or stands outside of it. In particular, ideology-critique is a mode of explanation that does not require analysis as an instrumental *precondition* of critique (Jaeggi, 2013, pp. 237, 248). The analysis is critique. Yet how exactly is this possible? The issue might be raised, that any normative judgement must be grounded in an externally established normative system. This is, however, a positivist misconception of social reality.

It is argued quite differently among theorists, how the possibility of such a mode of explanation can be established. Jaeggi for example argues that ideology-critique does not introduce any normativity into the analysis but rather develops an *immanent critique* of the already normatively impregnated social categories of which the ideology is about. It does not introduce norms or values about how the world should be¹², but rather shows that existing norms and values systematically cannot be realized under the given social relations. This is possible, since any social theory or any ideology is entangled with or impregnated by normative categories, either explicitly or implicitly. Since ideologies are interpretations of and beliefs about the world and set the framework for possible action within the world, they are always normative. They ultimately prescribe what can be done and what not (Jaeggi, 2013, p. 248ff). Bhaskar similarly argues, that social scientific explanation, due to the quality of its object of inquiry, cannot uphold the strict dichotomy of normative and non-normative because frequently the best explanation of a social entity is necessarily evalua-

12 As for instance Hausman and McPherson do, when they argue that “Although welfare is obviously very important, so is freedom and so is justice. Normative economics might focus on them in addition to or instead of welfare. There are alternatives, and to choose among them requires ethical reflection.” (Hausman and McPherson, 2008, p. 229).

tive¹³. To illustrate this, Bhaskar refers to an example about the explanation of the Shoah given by Isaiah Berlin:

“[...] compare the following accounts of what happened in Germany under Nazi Rule: (α) ‘the country was depopulated’; (β) ‘millions of people died’; (γ) ‘millions of people were killed’; (δ) ‘millions of people were massacred’. All four statements are true. But (δ) is not only the most evaluative, it is also the best (that is, the most precise and accurate) description of what actually happened [at least of the offered alternatives].” (Bhaskar, 1998a, p. 237f)

This example illustrates how the self-restriction of theory to a purely descriptive statement about a social kind comes with less explanatory power (or no explanation at all), less precision, and that the most accurate explanation of it might be the most evaluative one. In general, describing a social relation as oppressive, provides us with insights about that relation and possible causal powers it can exert over individuals positioned in it. One can just think of trying to find a way of describing the relationship of a slave and her master in purely descriptive terms, not using terms like oppression, domination or the like, which no one will reasonably argue to be value-free.

Additionally to the value-impregnation of social facts, social scientific explanation, according to Bhaskar, overcomes said dichotomy already by the acceptance of truth being better than untruth. If a social institution or a set of societal relations can be shown to systematically produce untruths, an immediate critique of such institutions or relations is entailed in scientific explanation. Yet accepting truth as a normative standard cannot be controversial¹⁴. It is not only the condition for the existence of scientific activity but of any rational discourse in general (Bhaskar, 1998a, p. 242). Another quote by Bhaskar makes clear how one can pass from identifying relations as producing untruths to criticizing them:

“If [...] one is in possession of a theory which explains why false consciousness is necessary, then one can pass immediately, without the addition of any extraneous value judgments, to a negative evaluation of the object (generative structure, system of social relations or whatever) that makes that consciousness necessary (and, *ceteris paribus*, to a positive evaluation of action rationally directed at the removal of the sources of false consciousness).” (Bhaskar, 1998a, p. 241f)

Note that the given quote indicates how the evaluation of an object as necessarily producing false consciousness immediately entails the positive evaluation, the approval, of actions directed at the removal of that ob-

13 This argument is also brought up by Putnam, an analytical philosopher more akin to contemporary social science than materialist thinkers, when he discusses the dichotomy of facts and values in neoclassical economics: “The world we inhabit, particularly when we describe human beings for purposes other than the purposes of physics or molecular biology or some other exact science—certainly the world we inhabit when we describe the world for the purposes the economist is interested in—is not describable in ‘value neutral’ terms. Not without throwing away the most significant *facts* along with the ‘value judgments’.” (Putnam, 2003, p. 396)

14 Clearly, for entirely irrational societies this is not the case. Remember Adorno’s insight from above that ideologies are historically specific and operate only under specific conditions, of which not only a certain degree of division of labor is necessary, but also a self-commitment to some form of rationality.

ject. Thereby ideology-critique overcomes not only the dichotomy of normative and non-normative but also that of theory and practice¹⁵.

An important aspect of ideology-critique, and one that will be central to this thesis, is precisely to reveal the normative character of supposedly pure descriptive characterizations¹⁶. This is, again, not to employ other, better normative ideals that should replace the ones considered ideological. It is also not to appeal to the – not yet achieved – realization of certain norms under the given conditions. By showing how ideological norms are systematically undermined by the relations they correspond to, it cannot be appealed for their realization under the given constitution of society. Rather, the societal relations producing and being dependent upon the ideology ought to be transformed and the contradiction of norm and undermining relations ought to be resolved in something new. In that sense, ideology-critique has a transformative, dynamic character (Jaeggi, 2013, p. 251f).

Normative contradictions as described so far, however, are not the only relevant ones for critique and ideologies indeed do not carry only normative concepts. Contradictions do not exist only between norms and their systematic non-realization. Since ideologies enable and guide practical action – i.e. function as constitution of social practice – material practices themselves can be contradictory and false (Stahl, 2016, p. 251). Furthermore, it makes sense to distinguish contradictions regarding the systematic non-realizations of certain norms under given societal relations and theoretical contradictions. An example for the latter might be the use of capital as a purely physical quantity in a neoclassical production function. Such contradictions might be errors of logic inconsistency and might in principle be contested within ideological theories themselves, as will be shown was done in neoclassical economics. However, the distinction of different types of contradictions is rather an analytical one than a conceptual one. Those contradictions are typically fundamentally intertwined. The definition of capital as a purely physical quantity, for instance, is of course a central moment in establishing the marginal productivity theory of distribution and hence the justification of unequal remuneration achieved on competitive markets with unequal property relations¹⁷.

In this thesis, I will not deal with all kinds of contradictions equally. I narrow my focus to immanent critique of theoretical contradictions and the revelation of the implicit normativity of the allegedly value-free neoclassical methodology. How social actors actually perform contradictions based on ideological theories will not be dealt with explicitly here. Concrete economic policies, their effects and the relation of those effects to theoretical predictions will also not be evaluated concretely.

15 At least a strict version of it, according to which theory and practice have only an instrumental and hierarchical relation to each other. The actual relation between theory and practice was always subject of intense debates among emancipatory forces. Most notably, since Marx' famous 11th Feuerbach thesis (MEW 3, 7). Adorno, for instance, suggests that Marx has an overly deterministic understanding with respect to that issue and argues, that theory and practice are rather in a dialectical relation to each other (Adorno, 1969). Demirović provides a contemporary overview to the discussion of the relation between emancipatory theory and practice (Demirović, 2018).

16 The explication of the implicit normativity of certain concepts of Neoclassical Economics will be elaborated later on in this thesis.

17 The marginal productivity theory, its ideological aspects, its theoretical contradictions, as well as its theoretical resolution by general equilibrium theory will be discussed at length in the following chapters.

2.3 Revealing Immanent Contradictions as a Moment of Ideology-Critique of Neo-classical Economics

The method of ideology-critique I pursue in this thesis can be considered a systematic critique of immanent contradictions, or *immanent critique*. It aims to reveal contradictions that are immanently incorporated into the ideological theory, or that arise from a conflict of a self-perception and its non-realization in theory. Contradictions of the latter type will be central in chapters 3 and 4, where I argue that, although neoclassicism considers itself a dynamic theory about a dynamic object, the economy, it fails to provide a theoretical framework that adequately captures dynamic aspects. Other immanent contradictions that are of importance for this thesis are of the normative type. The claim of a strict dichotomy between positive and normative economics will be criticized and shown to be apologetic of the status quo. All such contradictions have in common, that they arise already out of the neoclassical self-perception and its theory, without the necessity of introducing external evaluative categories. External critique in the sense of judging neoclassical theory and its policies according to an external moral theory, such as the capabilities approach for instance (cf. Robeyns, 2003; Sen, 2009), will not be part of this thesis. Also, the discussion of alternative or heterodox theories will be mostly omitted for two reasons. On the one hand it would simply go beyond the scope of this thesis. On the other hand, and that is more substantial, from a point of view of ideology-critique, it is indeed to some extent irrelevant to deal with them. Ideology-critique is critique of the prevailing *dominant* forms of consciousness and such is neoclassical economics. However, important contributions in revealing immanent contradictions come precisely from heterodox authors. As will be shown in chapters 3.3 and 3.4, valid criticism of general equilibrium theory was frequently brought up by neo-Ricardian economists. Therefore, my reference to heterodox theorists is limited to the acknowledgment of their revelation of immanent contradictions within Neoclassicism, not with how they aimed to resolve those contradictions within their own theories.

2.4 Conceptual Issues with Historicizing Ideology-Critique

A (re-)historicization of the project of ideology-critique founded by Marx, in my opinion, is necessary for the following reason. If taken seriously, the concept of ideology-critique urges us to develop a critique of contemporary society that at the same time is a critique of society's dominant mode of theoretical self-conception. Marx dealt in his Critique of Political Economy primarily with the Classical School of Political Economy and only casually with the predecessors of Neoclassical Economics, and if so, mostly pejoratively as vulgar economists (cf. MEW 23, p. 95, footnote 32; p. 325). Back then, the classics were the most accepted scientists and those engaging in public debate and providing theoretical arguments for economic policies, like the famous corn-debate in Great Britain. Neoclassical economics was only on the rise and became the dominant doctrine in economics only within the decades after Marx published his main work in 1867 (cf. Heilbroner, 2011; Hunt and Lautzenheiser, 2011). He never dealt with Neoclassical Economics in the same systematic manner as he did with the classics. However, Neoclassicism replaced Classicism as the dominant

science long ago and authors in the spirit of Marx engaged in critique of Neoclassicism. However, a similarly sophisticated critique does not exist to my knowledge. Hunt and Lautzenheiser (Hunt and Lautzenheiser, 2011) in their readable history of economic thought provide an ambitious attempt. Their reconstruction of the development of economic theory is one that consistently highlights the relatedness of economic theory to society and illuminates immanent contradictions within neoclassical theory. Subjective theories of value are analyzed correctly in their confrontation with the objective labor theories of value and their apologetic tendencies for capitalist relations. Also, scientific developments, like the replacement of cardinal by ordinal utility theory, are not portrayed as purely due to increase in explanatory power but contextualized and examined from the aspect of their implicit tendencies to support or oppose distributional inequalities. However, I think that, although it is very convincingly argued how neoclassical economics in its different variants throughout history is apologetic of capitalism and veils capitalist relations, the analysis does not go far enough. Rarely arguments are provided on how Neoclassical economics is actually adequate to society, what are the moments of truth it carries. The question, why despite all the immanent contradictions and fallacies neoclassical economics still manages to remain untouched as the dominant scientific discipline concerning economic relations is not properly investigated. In light of the understanding of ideology-critique given above, it might be said, that it is missing to show how neoclassical economics is *necessary* false consciousness, and not simply false or apologetic consciousness. Other authors engaging in critique of neoclassical economics, if they deal with ideology, either only indicate how capitalism actually produces Neoclassical economics in a causal sense (cf. Büttner, 2007; Krätke, 1999; O’Boyle and McDonough, 2011), do not deal with neoclassical economics specifically (Bukharin, 1927) or have no concept of ideology (cf. Lawson, 2013; Shaikh, 2016).

Before proceeding to the next chapter, I need to stress two conceptual problems I face within this thesis. First, a genuine ideology-critique according to the characterization above is necessarily historically-specific but also empirically guided. It is of limited reason in such a project to talk about capitalist relations without engaging in genuine empirical investigations about how they articulate in the present. In the end, it is the interrelation of those relations with neoclassical economics that is of interest. This admittedly narrows the intelligibility of this thesis quite drastically. I can only indicate possible mechanisms linking neoclassical economics to the current relations of capitalism. Nevertheless, the current purely theoretical work is to some extent autonomously reasonable and might be a precondition for further research, since it reveals the immanent contradictions within neoclassical theory. Those exist relatively independent from the current formation of society. Some aspects, such as the neoclassical methodological impossibility to deal with dynamic systems can be revealed via critique of the theory alone. However, in what sense methodology itself adequately relates to contemporary capitalism cannot be answered purely theoretically. Or more general, it is possible to reveal certain immanent contradictions entirely with respect to theory alone. It is, however, not possible to relate those contradictions to contemporary society purely theoretically. This is a serious issue, but it seems to me that some sort of division of labor in this process of ideology-critique is at this point required.

Secondly, ideology-critique in some sense always operates under suspicion (Jaeggi, 2013, p. 237). In this thesis I, just as other critiques of neoclassical economics, presuppose an ideological role of it. That is, however, what still needs to be shown. This issue in my opinion arises from the fact that both, Bhaskar and Jaeggi, two of my main sources for the characterization of ideology-critique, try to work out an a-historical method of ideology-critique which they claim to distill from Marx' critique of the Political Economy. It is important to note, however, that Marx developed his whole critique about capitalist societies (Political Economy) via a critique of the back then dominant science of that subject (also Political Economy). Ideology-critique today, however, draws a lot on Marx' analysis of capitalism. This is of course no bad, it is reasonable to build on existing knowledge and not unnecessarily reinvent the wheel. Yet it begs the question to what extent the depicted method of ideology-critique can draw upon Marx' analysis and where it needs to develop its own categories and maybe even its own procedure. This resembles the question, to what extent capitalist relations changed over the course of history and with it the form of ideology. I think the solution to that problem can only lie in a historicization of ideology-critique¹⁸. It is precisely what is at stake. How does our knowledge increase through a critique of the currently dominant science? In this thesis I will sometimes refer to categories developed by Marx and other marxian thinkers, however, I will not introduce them without justification and try to be transparent on the possibility and necessity of using them. The critique from time to time, therefore, will appear, or actually be, external critique rather than immanent critique.

3 Neoclassical Economics – Definition and Critique

This chapter provides a critical review of the literature on the definition and criticism of neoclassical economics in the light of ideology-critique, as defined in the previous chapter. The aim is to elaborate an adequate definition of neoclassical economics that situates it in capitalist society. This necessarily involves a historical approach, since neoclassical economics, just as capitalism, is historically specific. Its development and rise as the hegemonic science of the economic system, as historians of economic thought argue, is deeply interconnected with the development of capitalist relations (cf. Heilbroner, 2011; Hunt and Lautzenheiser, 2011). I will discuss criticisms of Neoclassical economics and reevaluate them in the context of ideology-critique. In particular, I try to highlight the most promising attempts in revealing its ideological status. However, if critique comes close to that, i.e. identifies immanent contradictions, those are typically not resolved. It must be noted at this point, that although many critics characterize neoclassicism as ideological, it is rarely made clear what exactly is understood as ideology and even less so, how a mode of ideology-critique proceeds. Understanding ideologies as more than pure apologetic beliefs of societal relations, but as *necessary false consciousness* being always also (co-)produced by and adequate to them, requires to reexamine existing criticisms. In other words, I will analyze which arguments in the literature go beyond a purely

18 "Über der Dynamisierung geistiger Gehalte durch die Ideologiekritik pflegt man zu vergessen, daß die Ideologienlehre selbst in die geschichtliche Bewegung fällt und daß, wenn nicht die Substanz, so doch die Funktion des Ideologiebegriffs sich geschichtlich verändert, der Dynamik unterliegt. Was Ideologie heiße und was Ideologien sind, läßt sich ausmachen nur so, indem man der Bewegung des Begriffs gerecht wird, die zugleich eine der Sache ist." (Adorno, 1972a, p. 491f)

functional understanding of neoclassical economics and highlight where further critique is most promising in my opinion. Also, I will consider those criticisms, that seem relevant for a specific critique of neoclassical methodology. Before that, a brief comment on the structure of the chapter seems appropriate.

The elaboration starts with some a-historical definitions of neoclassical economics by prominent critics. I try to emphasize the inability of such approaches to adequately define the object. Then, I give a brief account of some work in defining neoclassicism historically. This historical path is subsequently extended to contemporary axiomatic general equilibrium theory. General equilibrium theory and the Fundamental Welfare Theorems are argued to lie at the core of neoclassical theory and ‘the mainstream’. This is what makes neoclassicism a theory of society, provides genuine economic content and determines the development of economic sub-disciplines considered ‘mainstream’, such as game theory or behavioral economics. Those need to be understood in the light of the issues of and their relation to general equilibrium theory. The discussion of general equilibrium theory specifically begins with a critical review of the self-perception of influential neoclassical theorists themselves and is then extended to the perception of critics.

3.1 Neoclassical Economics and ‘The Mainstream’

Neoclassicism as a term for a specific school of thought seems not only to be somewhat unpopular among some historians of thought. Colander for instance even proclaims the ‘death of neoclassical economics’ (Colander, 2000). Also among some critics, especially those considering themselves as part of the *heterodoxy* the term *neoclassical* is frequently rejected (cf. Lawson, 2013). According to Lawson, a prominent proponent of the critical realist philosophy, the term neoclassical is analytically too blurry and it cannot be grasped reasonably in the context of economic research today. There are too many contingencies in its ingredients, even supply-and-demand modeling are supposedly not essential features of it. Too many variants of rationality exist as to precisely associate a particular notion of it with neoclassicism (Lawson, 2013, p. 31). Therefore, Lawson prefers to talk about the *mainstream*, which in his opinion is on the one hand broader than what is historically identified with neoclassical and on the other hand can be defined quite precisely on ontological grounds. He argues that the term neoclassical actually was first used ontologically, not substantively¹⁹. Ontological rather than genuinely on the level of content, because Lawson in his discussion of neoclassicism and the mainstream emphasizes the tension between the mainstream’s (rather than neoclassicism’s) implicit ontological commitment and conflicting epistemological and methodological instruments. The underlying conflict in the mainstream is that on the one hand economists commit (at least implicitly) to a dynamic and evolutionary understanding of their object of investigation (the economy or the society) but inadequately produce theories and methods solely based on mathematical deductive reasoning, which is es-

19 Lawson discusses Veblen’s use of the term and sticks to that interpretation.

entially static (Lawson, 2013, p. 23)²⁰. Deductive methods work only under conditions of systemic closure²¹ (like an experiment in physics), whereas the ontology of the social reality is open, in the sense that there is always multiple co-determination and no single causal mechanism works in isolation. It is exactly this tension that seems to be inherent in the whole academic practice, which Lawson characterizes as mainstream. Although he does acknowledge that rationality, although contingent in its specific formulation, modeling in terms of supply and demand and equilibrium as a solution concept frequently arise in the mainstream (in order to produce systemic closure), he does not want to define neoclassicism on those grounds (Lawson, 2013, p. 31ff). I consider this criticism to be correct and the role of the static mode of explanation will be discussed at length in this thesis, in particular in chapter 4. However, it is precisely the inter-relation with the genuine content of neoclassical theories that make it relevant for ideology-critique, and as will be argued, determine its static methodology to some extent. It does actually matter, what exactly and how precisely something is described and characterized in a static fashion. Rationality and equilibrium in their specific articulations of neoclassicism, as will be discussed later on, complemented with a static theory of society produce supposedly a-historic universal truths about the harmonization of conflicting interests via the institution of the market.

Similar arguments to the ones provided by Lawson, are brought up by Colander (Colander, 2000). Neoclassical according to him describes a very specific branch of economic thinking, primarily the marginalists²², and has little to do with what Colander identifies as *modern* economics today. Whereas neoclassical is described in terms of specific features, each of those features allegedly vanished from what modern economists nowadays do (Colander, 2000, p. 134f). Perfect rationality presupposed in neoclassicism in modern research is supposedly replaced by bounded rationality, methodological individualism is challenged by complexity economics and heterogeneous agent modeling, utilitarianism made place for Pareto-normativity and so forth. It is interesting, however, that all of those aspects in modern research that Colander brings up, deal only partially with aspects that are key ingredients of general equilibrium theory in its modern form and its fundamental theorems. Hence, the development of modern research cannot be understood without understanding and highlighting its relation to general equilibrium theory and its deficiencies. Similarly, the development of general equilibrium theory cannot be understood without reference to the development of capitalist societies.

Still, Colander comes to a similar conclusion as Lawson does, namely that modern economics (or mainstream economics) is primarily defined by mathematical modeling. He summarizes this view quite drastically:

20 The Critical Realist Philosophy, of which Lawson is a prominent proponent, argues that ontological reasoning determines epistemological, which in turn determines methodological reasoning. It means, very loosely speaking, that the way reality is structured determines the ways of attaining knowledge about it and that in advance determines what adequate tools for that task are, hence the right methods. As a consequence, an a-historic scientific procedure is rejected in the critical realist philosophy and the historicity and sociality of science as a production activity are emphasized. For a comprehensive overview with contributions of several important critical realists consult the introduction edited by Archer (Archer, 1998).

21 Conditions of systemic closure in this context refer to a situation where all but one causal factor or mechanism are isolated.

22 In the subsequent section the historical role of the marginalists and the continuity of their reasoning in modern neoclassical economics will be discussed.

“If content does not define modern economics, what does? It is method. The same modern economics that is enormously broad in its acceptance of various assumptions and content is extremely narrow when it comes to method.” (Colander, 2000, p. 137)

This quote immediately begs the question of what then separates the mainstream from traditions like Neo-Ricardianism, Post-Keynesianism or Analytical Marxism. All of them use mathematical models, all of them use exclusively deductive methods. From Colander's point of view, those would probably (correctly) not be subsumed under modern economics. The answer is of course, that modern economics is not as eclectic regarding the content as Colander portrays it to be. The base-line for modeling is still general equilibrium. Every theory or model in modern economics uses it either directly (implicitly or explicitly), or adopts just partial aspects of it, as for example the notion of rationality that is altered in game theory or bounded rationality.

From a critique's point of view, however, it is troublesome to define the economics profession simply via mathematical modeling. It does not allow for any *substantial* differentiation between economic theories that not only have very different understandings of how for instance value is created and distributed but also guide very different policies. If the term mainstream and its counterpart heterodoxy²³ should have any meaning, it should be able to capture that difference. Unfortunately, it cannot, because it carries no economic substance. In particular, it cannot answer the question of why some theories, such as general equilibrium theory, game theory or behavioral economics, are hegemonic, publish in the main journals, make up almost all professional economists today and are consulted for policy design and evaluation while others are not, like for instance Neo-Ricardianism or Post-Keynesianism. That problem immediately invokes the question in what relation economic theory, and the way it is hegemonically used and taught, is to the economy itself. And that is clearly a question that cannot be addressed without reference to actual content of economic theories which in turn requires a historical definition of the object of interest.

I agree with Lawson that the contemporary economics profession is characterized by a specific methodology and an implicit ontology but I disagree with him on that the method is simply mathematical deductivism. Similarly, I disagree with Colander that the method is eclectic on the level of content. To justify this disagreement, I consider in detail what the method is and what it has to do with content.

The following definition of neoclassical economics, by Arnsperger and Varoufakis, can be interpreted as a reaction to the alleged emptiness of the term ‘neoclassical’ that scholars such as Colander claim and thereby protect it from criticism. Arnsperger and Varoufakis aim at providing a precise definition of it, so that most economists cannot reject being labeled neoclassical (Arnsperger and Varoufakis, 2006, p. 5f). However, they unwillingly in their article ‘*What is Neoclassical Economics?*’ themselves blur the lines between neoclassical and other dominant branches of economics such as behavioral economics or the like. Although they aim at providing a broad definition of Neoclassical economics, they in fact end up characterizing methodologi-

23 Of course the more adequate dichotomy here would be orthodoxy/heterodoxy which is also used frequently but since Lawson speaks of the mainstream I stick at this point with that term.

cally what Lawson calls the mainstream or Colander calls modern²⁴. This is due to the same restriction of defining the object solely in terms of methodology and with no reference to the theoretical content. Nevertheless, I consider their definition more adequate than the ones by Colander and Lawson. Their definition consists of three methodological axioms, and is indeed quite accurate of the mainstream. The first is methodological individualism. It captures the idea that any social phenomenon is modeled solely as the result of some behavioral interaction of individuals, be it strategic or not, with some notion of rationality, be it perfect or bounded. The second axiom is methodological instrumentalism, it complements the first axiom in that it requires the modeled individual behavior as being “understood as a means for maximizing preference-satisfaction” (Arnsperger and Varoufakis, 2006, p. 8). The third axiom is that of methodological equilibration. It accounts for “the axiomatic imposition of equilibrium” (Arnsperger and Varoufakis, 2006, p. 10) in economic analysis. This means that the coordination of individual actions according to the first two axioms is only theorized in terms of an equilibrium. Although I consider this definition more adequate to the economics profession than the previous two, there are still issues with it.

First, it is too eclectic about the differences between, say general equilibrium theory and behavioral economics or game theory. Instead of highlighting the relationship between contemporary research and general equilibrium theory, it subsumes them. The authors do not motivate why it is important to give a definition as broad as possible to label the whole mainstream as neoclassical in the first place²⁵. I consider it rather to be of special interest in what sense sub-disciplines relate to general equilibrium theory and why they emerged. Those might be considered the reactions to immanent contradictions of general equilibrium theory. As I will argue throughout this thesis, all the major, in the academic discourse accepted, economic sub-disciplines deal only with partial criticism of general equilibrium theory. Although, they do so for a high price. Ultimately they do not produce any substantial economic content on the level of the whole economy, let alone on the dynamics of capitalism. This aspect is veiled by Arnsperger and Varoufakis’ purely methodological definition. Summing up, one could conclude that Colander’s definition understands the historic character of neoclassicism, but fails to grasp its historical trajectory. Hence, the relation between neoclassicism and what he calls modern. To the contrary, purely methodological definitions, in particular that by Arnsperger and Varoufakis, understand the methodological ground of what is considered mainstream, but fail to differentiate among it. Early marginalism by such definitions cannot be differentiated from modern game theory. Secondly, the axiom of methodological equilibration is not precise enough in defining the specific kind of equilibria common in economics. At this point, Lawson’s emphasis on the static nature of economic explanation is helpful and I will devote quite some length to the discussion of the static character of neoclassical equilibria.

24 In the article they actually use the terms ‘neoclassical’ and ‘mainstream’ synonymously.

25 Apart from this quote right at the beginning of the paper: “There is nothing more frustrating for critics of neoclassical economics than the argument that neoclassical economics is a figment of their imagination; that, simply, there is scientific economics and there is speculative hand-waiving (by those who have never really grasped the finer points of mainstream economic theory).” (Arnsperger and Varoufakis, 2006, p. 5). Although this might be true, I consider it to be the wrong response to provide an inescapable definition of what economists do. Rather, it needs to be understood, how historically contemporary hegemonic economic science relates to general equilibrium theory and capitalism.

Another approach to define Neoclassical economics, is to analyze it historically. Only through historically informed analysis can it be answered in what relation general equilibrium theory stands to the famous invisible hand argument and capitalist society. Only then we can identify a rationale between the change from cardinal to ordinal utility or the change from strict utilitarianism to preference utilitarianism and yet understand those changes as part of the same process²⁶. Historical analysis allows us to define neoclassical economics as the result of a conflicting process which is in constant interdependence with capitalist society. To be more concrete, critique of the object of investigation, neoclassicism, not only *requires* an accurate definition, its definition *coincides* with its critique. It is therefore necessary to precisely develop such a definition and not dismiss this task because the object is allegedly too difficult to define. The neglect of the term neoclassical from the point of view of ideology-critique is therefore inadmissible. Consequently, the next section deals with the historical origin of neoclassical economics and its development up to the axiomatic formulation of general equilibrium theory.

3.2 Neoclassicism: A Historical Definition

“Science today, its difference from other intellectual forces and activities, its division into specific fields, its procedures, contents, and organization, can be understood only in relation to the society for which it functions.” (Horkheimer, 2004, p. 41)

This section reviews the history of economic thought from a specific viewpoint. I am interested in highlighting the ideological status of changes in scientifically accepted explanations of the economy and fundamental economic categories. Hence, the task of rationalizing the development of economic ideas as underlying only scientific progress is not of my primary interest. This means for instance, that understanding the replacement of a cardinal utility theory of value by one of ordinal utility is not understood solely as the replacement of a theory with relatively less explanatory power (in a positivist sense in terms of predictive power) by one with relatively more of it. Rather, I will highlight the need of changing ingredients under the rationale of maintaining a theory producing harmonious statements about the current social and economic formation. In fact, it seems very convincing to me that what problem is considered worthy or necessary of explanation in the first place, or what kind of explanations are considered sufficient, cannot be answered without reference to societal categories. Science is a social activity, the production process of scientific theories and explanations not only always take place in the complex structure of society itself, but always takes an (implicit or explicit) evaluative stand towards it. This was shown already in the discussion on the normatively impregnated character of social categories in the chapter on ideology-critique. Lengthy discussion of the critical rationalists, probably the most dominant philosophical tradition in the history of economic thought, and their interpretation of the development of science as (in general) progressive, therefore, will not be pursued here. The interested reader might for this purpose consult Blaug’s classic *Economic Theory in Retrospect* (Blaug, 1997).

²⁶ Contrary to Colander’s opinion, Pareto normativity can be understood as the equivalent to earlier forms of utilitarianism, each being complemented by different value theories, but ultimately in combination being crucial in the production of a theory of social harmony.

This section on the historical development of Neoclassicism and its arrival at General Equilibrium Theory is followed by a detailed discussion of General Equilibrium Theory itself, as the historical culmination point in the process of the formalization of the invisible-hand-argument.

The origin of Neoclassicism is frequently characterized by the rise of the *marginalists* in the 1870's. Most prominently, Walras, Menger, and Jevons, who independently from each other developed around the same time a marginal-utility theory of value. It marks the definite success of a subjective theory of value, the utility theory, over an objective one, the labor theory (cf. Blaug, 1997; Büttner, 2007; Colander, 2000; Hunt and Lautzenheiser, 2011; Krätke, 1999). The labor theories of value of Smith and Ricardo, in different versions²⁷, argued that value is ultimately produced by human labor, and human labor alone. Tools and stock were considered products of labor themselves, and insofar as they contributed to the creation of value, they did so as embodied labor. Different classes earn different kinds of income. The classes of capitalists, landlords and workers earned profits, rents and wages respectively. Due to the fact that labor alone was understood as the producer of value, the non-producing classes' income was considered a portion of the produce of the laboring class. Therefore, capitalist societies inhibit a fundamental distributional conflict, a class conflict, as all the produced value needs to be distributed between the classes of laborers and owners of capital and land respectively. According to labor theories of value, the distribution of the remuneration of labor, wages, and the remuneration of owning capital, profit or interest, and owning land, rent, is a zero-sum situation. Higher wage shares mean necessarily lower profit (or rent) shares and vice versa²⁸. Neither Smith, nor Ricardo developed from that underlying conflict a critique of the capitalist formation of society. Hunt and Lautzenheiser show how Smith and Ricardo's thinking is imbued with quite heavy contradictions. On the one hand, they acknowledge the distributional conflict between capital and labor (and land), on the other hand they understand the institution of the market as one that harmonizes conflicting interests, famously illustrated by Smith's invisible-hand-argument (Hunt and Lautzenheiser, 2011, p. 611f). It took for Marx to radicalize the labor-theory, develop a notion of exploitation and make the class-struggle a central category in his explanation of capitalist dynamics (Hunt and Lautzenheiser, 2011 chapter 9). Nevertheless, Smith and Ricardo had successors in both camps, the labor theories and the utility theories of value. Whereas proponents of the former, such as Marx, developed the theory around the class conflict further, proponents of the latter got rid of the labor theory aspects in Smith's (and Ricardo's) thinking in order to be able to establish a theory of social harmony, as Hunt and Lautzenheiser argue:

“[...] proponents of the labor theory of value view class conflict to be of fundamental importance in understanding capitalism, while the utility theory of value sees social harmony as fundamental and leads inevitably to some version of Smith's invisible-hand argument. Only insofar as Smith abandoned the labor theory of value was he able to argue for the invisible hand and social harmony.” (Hunt and Lautzenheiser, 2011, p. 61)

27 For a detailed discussion on the differences on Smith's and Ricardo's labor theories of value, see for instance Hunt and Lautzenheiser (Hunt and Lautzenheiser, 2011 chapters 3 and 5).

28 To be more precise, the distribution of newly created wealth among those three kinds of remunerations.

This divide in the history of economic thought is essential for the understanding of neoclassical economics. It is exactly this notion of social harmony, around which utility theories of value developed and which ultimately gave rise to marginalism and general equilibrium theory, which essentially is considered to be the rigorous version of Smith's invisible-hand-argument. Crucial for the divide is the fact that labor theorists had a focus on production. It is where they considered value to be created. Whereas utility theorists "claim that value is constituted in the process of exchange, and originates in consumption. The value of a good is then perceived as being determined by the extent to which a scarce good can satisfy the wants of the buyer of the good, the consumer." (Kuiper, 2010, p. 180). Although, *process* of exchange is misleading, rather one should consider it as the *act* of exchange. Exchange as such is instantaneous, there is no process. Creating theories and corresponding methodologies that focus only on either of two spheres, production or consumption, alone are necessarily incomplete. As Tinker et. al argue, utility theories of value and labor theories of value differ first at the level of abstraction. Where the former abstract from a commodity everything but its utility, the latter considers commodities primarily as products of social labor (Tinker et al., 1982, p. 175f). Marx very well understood that commodities have both aspects, his theory of the double character of commodities captures its use value, as well as its exchange value (MEW 23, 49ff). Neoclassical economics in contrast abstracts from a commodity's character to be the result of labor and considers it purely with respect to its utility, its use value. That this has fundamental methodological consequences will be shown later.

Clearly, the arrival at general equilibrium theory as the modern version of social harmony, was a long and often contradictory path. This path cannot be reconstructed entirely in this thesis. Hunt and Lautzenheiser in my opinion provide a comprehensive history of economic ideas in this respect (Hunt and Lautzenheiser, 2011). Although discussion of contemporary general equilibrium theory is scarce. They show, how the orthodoxy in economics historically always centered around the notion of social harmony²⁹. It is argued throughout the book, that capitalist relations are in need of an intellectual justification and that changes in central building blocks of theories can be understood in the light of their adequacy for that task. More concretely, certain methodological assumptions that were dropped from today's orthodoxy were so, because of unintended political consequences they implied. Think of the change from cardinal utility theory to ordinal utility theory. Cardinality, allowing a metric comparison of inter- and intrapersonal utility, was not considered a major problem by most proponents of the utility theorists before the so-called marginalist revolution in the 1870's. As its name indicates, it was considered a scientific break-through, and the marginalists were cardinalists themselves. They did improve the logical consistency of utility theories, they were first able to resolve the diamond-water paradox from a utility perspective. Beforehand, it seemed paradoxical, how commodities with the highest utility, like water, can have the lowest value, and vice versa for diamonds. Marginalists introduced the notion of marginal utility, and thereby cemented the role of scarcity in economic science. Value was not anymore considered to be determined by absolute utility, but by marginal utility, i.e.

29 Max Horkheimer argues that Socrates' Philosophy marks the birth of western reasoning, it positions the individual in opposition, in conflict, to the hellenic state and its environment. Already post-socratic hellenic philosophy tended towards harmonious reason and consolidation of conflict. (Horkheimer, 2004, p. 91). Certain historical roots for neoclassic thought might hence be found in the very foundational texts of what is considered western civilization.

the pleasure that one gets from the last unit of consumption of a commodity. That marginal utility was diminishing in nature. This means that every additional unit of any commodity yields less pleasure than the previous unit of that same commodity. Water is compared to diamonds in fact very useful, but also readily available and therefore has little marginal utility, whereas diamonds are scarce, which makes them valuable.

What is interesting at this point, is that issues with the concept of a measurable utility as such were raised by critics from the beginning but were not considered problematic by its proponents until the political consequences were fully unfolded. Keeping a cardinality principle and at the same time arguing that value is determined by marginal utility had major re-distributional implications. If a wealthy person consumes a commodity, less value is created than when a poor person consumes that very same commodity, since her marginal utility must be higher. Therefore, the marginalist version of utility theory unintendedly supported redistribution and was even used for arguments in favor of socialism at that time. Krätke calls those the *socialist consequences* of marginal utility theory (Krätke, 1999, p. 6). It was only then, when the principle of cardinality came also under wide-spread attack among utility theorists. Suddenly, the issue of measuring such a thing as utility became a serious scientific problem and was replaced by Pareto's ordinal utility theory, which only requires subjective rankings of alternatives without specifying levels of utility or comparing levels across individuals (cf. Hunt and Lautzenheiser, 2011 chapters 6,8 and 10). It is fairly safe to say, that for Pareto personally, adjusting the theory in a way such that it got rid of its socialist consequences was a central motive. Pareto hated liberal democracy and most of its progressive accomplishments. "In particular he had a mortal fear of socialism and believed that society stood on the brink of a trade union despotism." (Zanden, 1960, p. 405)³⁰. However, one must be cautious with such an interpretation of scientific change, because it might tend to reduce scientific theories to pure apologetic instruments. I have argued that ideologies are more than justifications to the status quo, they are in some sense adequate, true in some sense. One must not neglect the intra-scientific elimination of contradictions. Replacing cardinality by ordinality indeed did get rid of certain immanent contradictions, the context in which it became necessary to do so however, was not purely intra-scientific. Scientific change cannot be reduced rationalistically to mere progress in explanatory power, isolated from the historical process it inhabits. At the same time, it equally cannot be reduced to a mere instrument of power and dominance. Even if some theorists, like Pareto, might have very consciously worked against the socialist consequences of early neoclassical theory, it does not follow from that why his theories had such resonance, politically and scientifically. Among neoclassicals there were also always progressive, even socialist, figures. Most notably, Walras (cf. Cirillo, 1980) or the late John Stuart Mill (cf. Hunt and Lautzenheiser, 2011, p. 194ff). They adopted the very same methods and theories as the admirer of Italian fascism, Pareto. A radical critique, therefore, has also to show how the apologetic moment carries over to methodology as such.

Hunt and Lautzenheiser discuss the whole history of economics in this light, i.e. they trace changes in scientific explanations and standards not only to explanatory power, but to the ideological use of certain expla-

³⁰ Zanden shows Pareto's closeness to fascism by emphasizing his anti-intellectualism, his antipathy to democracy, his glorification of force as a tool for maintenance of power and his reactionary theory of elites (Zanden, 1960).

nations, assumptions or methods. Their definition of neoclassical economics is derived at in this way. According to them, neoclassical economics evolved in terms of changing scientific standards and hence cannot be defined primarily by its method, since the method is a historical product itself. Rather, changes in methods were necessary for being able to maintain the main ideological defenses of capitalism and still provide a rational explanation of it. The three core ideological tenets Hunt and Lautzenheiser identify at the heart of neoclassicism are 1) the harmonization of all interests by the invisible hand of competitive markets, 2) the automatically achieved full-employment by the forces of free markets and 3) the marginal productivity theory of distribution. According to the authors, those tenets were inherent theory blocks in every stage of neoclassical history and are deeply apologetic of capitalist class relations. As mentioned above, the idea of social harmony guaranteed by the invisible forces of the competitive market is taken already from Smith, and formalized gradually³¹. Accordingly, exchange is the only mutually beneficial mode of economic interaction and production is considered simply a moment of exchange. The second ideological tenet is the concept, that perfectly functioning markets will automatically adjust to full-employment, a version of Say's Law. Lastly, the theory of distribution according to the marginal productivity of the different production factors, capital and labor. According to that, markets reward each factor of production, capital and labor, according to their contribution to the production process. Therefore, conceptualizing capital as a mere physical quantity, that enters production in the same way that labor does, was a key aspect in the development of neoclassical economics.

In its dispute with Keynesianism – and its refutation of Say's Law – and the Great Depression from 1929, neoclassic hegemony shifted towards a general acceptance of an active role of the government. Previously to that, most of neoclassicals favoured laissez-faire capitalism and the propagation of free markets. However, this should not evoke the picture that Hunt and Lautzenheiser claim all previous neoclassicals to be conservative. In fact, they dedicate lengthy discussion to the role of progressive reformers among the utility theorists of value, like the already mentioned John Stuart Mill for instance. Their focus, however, is correctly on the theoretical limitations such progressive reform can be reasoned from an a-historic utility theory perspective. For a detailed discussion on that, one might consult especially chapter 8 of Hunt and Lautzenheiser's history of economic thought (Hunt and Lautzenheiser, 2011 chapter 8). I will not review the dispute among Mill and his conservative counterparts, foremost Bastiat, here, but one that mirrors it and that is more important for the task of this thesis. In the post-war period Hunt and Lautzenheiser identify a divide in the neoclassical school, one between liberal (most notably Paul Samuelson) and conservative (Chicago School and Austrian School) neoclassicals. The liberals accepted certain criticisms of neoclassical theory as valid. Macroeconomic instability, put forward by Keynes, the existence of oligopolistic and monopolistic structures and the immanent role of externalities, which relates to the social consumption of public goods. According to

31 Hunt and Lautzenheiser do not devote too much discussion to general equilibrium theory, but it is obviously clear that the fundamental welfare theorems inhibit this notion of harmonizing conflicting interests. Although, they provide space for more interpretation and equally support a centralized command economy as they do a free market economy. This will be discussed further below.

Hunt and Lautzenheiser, the liberal school introduced the government as a *deus ex machina*, which serves to resolve the aforementioned issues, as argued for instance in the following quote:

„Government becomes a *deus ex machina* that conveniently allows liberals to recognize the validity of many of the objections to neoclassical theory while still defending their faith in the three fundamental ideological tenets of neoclassicism. They concede that the invisible hand is not by itself sufficient. [...] They [liberal neoclassicals] conclude [...] that although the invisible hand, helped along by the visible fist of government, is not perfect, it is the closest thing to perfection that current levels of human knowledge allow.” (Hunt and Lautzenheiser, 2011, p. 471)

Governments enforce competition, provide public goods and regulate business cycles via monetary and fiscal policy. With such a government, the notion of optimal exchange and remuneration according to the marginal productivity of production factors is reconstructed. It is the visible fist of the government that supposedly allows to achieve the ideal results of the invisible hand of the market. This divide reflects according to the authors, the political struggle between republicans and democrats in the USA. The correspondence of the two intellectual schools to the two established political parties reflects that both economic schools are severely limited in thinking beyond the existing relations of capitalist society and private property. They do differ in their theory of the government, but both of them neither questions the government as the protector of property relations (as Smith already did), nor questions the underlying property relations themselves. Meaning, both schools have no explanation of the government, they treat its existence as a-historically given. Capital is in both traditions equally a-historically considered to be any physical good used in production besides labor. This obscures the difference between labor and capital, as well as between wages and profits. Exchange is thought of as one between equals, and formally not distinguishable actors who simply happen to be endowed with either labor or capital. This point is stressed several times by the authors. The assumed symmetry between capital and labor in neoclassical theory blurs the differences between classes and gets rid of any notion of class conflict. The a-historic, methodologically individualistic and proclaimed value-free approach in scientific explanation is inherent in both schools. Neoclassical economics, according to Hunt and Lautzenheiser – if we combine their claim of the three ideological tenets with the two discussed methodological assertions – in all its versions consists therefore of the following: 1) methodological individualism, 2) a-historicism, 3) a notion of the full-employment adjustment of markets, either automatically or via an active interventionist government, 4) the harmonization of conflicting interests via mutually beneficial exchange and 5) the distribution of wages and profits according to the marginal productivity of labor and capital respectively. This divide among more liberal and more conservative neoclassicals, according to the authors, is articulated contemporarily in the dispute between New-Keynesianism and rational-expectations-micro founded macroeconomics in the fashion of Lucas. It was ultimately resolved in the universal acceptance of dynamic stochastic general equilibrium theory (DSGE) models, where the general framework is agreed upon but the conflict becomes a matter of assumptions: perfect vs. imperfect competition or rigidities

for instance (Hunt and Lautzenheiser, 2011, p. 459ff). Although I consider Hunt and Lautzenheiser's work extremely valuable in understanding what neoclassicism is and how it became to be, several aspects seem problematic.

First and foremost, although they provide a definition of neoclassicism centered around its ideological stance towards capitalism and use the words 'ideology' or 'ideological' over 150 times throughout the book, they not once provide a definition of what they consider an ideology precisely to be. However, from its use it can be concluded, that ideology is either used as being a privately held political belief, in which case it is useless for the underlying project of ideology-critique, or as a synonym for apologetic or defense. The latter notion is captured very clearly in the following quote, discussing the ideological status of utilitarianism and utility theories of value:

„[...] utilitarianism provides the philosophical foundation for the neoclassical utility theory of value and [...] the latter theory supports a general view of the harmony of all interests. This intellectual tradition represents the most elaborate and profound intellectual *defense for, or ideology in support of,* the status quo of market capitalism.“ (Hunt and Lautzenheiser, 2011, p. 162 emphasis added)

Ideological in that sense is being apologetic to the existing, to capitalist relations. Although, considering the definition of ideology in chapter 2, this reflects only one aspect of ideologies. If ideologies were merely apologetic of the current formation of society, it would seem quite incomprehensible how and why they become so wide-spread. Ideology-production then indeed becomes the voluntary delusional act of reactionary intellectuals. This view is not only implausible, but also at least prone to conspiracy theories. It is to say, that it misses to capture the necessity in necessary false consciousness. I do not think, that Hunt and Lautzenheiser believe that ideology production works in such a limited way, since they devote lengthy discussion to the socio-economic circumstances that give rise to certain beliefs. They discuss the very same aspect of Marx' work that Jaeggi discusses and that I sketched in the previous chapter, where the sphere of circulation, or exchange, actually appears as a sphere of free and equal agents:

”Finally, an exchange economy also *appeared* as a system in which actions motivated by pure, egoistic self-interest were channeled, "as though by an invisible hand," into a socially harmonious whole.“ (Hunt and Lautzenheiser, 2011, p. 205 emphasis added)

The fact, that the sphere of circulation actually appears as one of freedom and equality indicates, that bourgeois economists do deal with actual reality as they perceive it. They are just not able to grasp it fully. It is in the being of capitalism, that ideologies root. However, it is at least confusing that this issue is not resolved by Hunt and Lautzenheiser, since the term ideology is used in quite different fashion throughout the book and mostly not in the sense that was illustrated with the example of Marx' critique of Political Economy. Ideologies do in fact reflect certain aspects of society, but do not penetrate to its root and hence remain systematically distorted explanations of them. They furthermore serve as self-rationalizations of the existing.

Therefore, they also fulfill the task of rendering the world around us meaningful. This means, that neoclassicals do not engage simply, although certainly some of them do³², willingly in the defense of capitalist relations and their theories are not simply wrong. In order to unfold a critique of economic theory that equally criticizes contemporary societal relations requires to show how those theories *necessarily* are apologetic of them.

Secondly, there is a limited role for the discussion of method. The authors argue several times that values determine the theoretical interest and that depending on the interest in the process of abstraction different aspects of reality will be abstracted from. However, they do not engage in systematic critique of axiomatic-deductive reasoning. Rather, the view is invoked that tools and instruments with which scientists approach the world are universally applicable, but it is mainly some sort of diluted interest that results in the production of ideology. The following quote illustrates this:

“If one believes his or her theory to have any importance whatsoever [...] that person must believe that he or she has abstracted from, or ignored, irrelevant or unimportant facts and focused on relevant and important ones. But the questions of relevance and importance have no meaning at all unless one asks, relevant or important with respect to what problem? Thus, the social or economic issue or problem to which a theory is addressed is crucial in determining what aspects of reality the theoretician ignores and what aspects he or she focuses on in a "few general propositions." But what constitutes an important problem or an important issue is a judgment based entirely on the values of the theoretician.” (Hunt and Lautzenheiser, 2011, p. 143)

It is not controversial that research interest is guided normatively and that norms are themselves societally caused. A systemic research interest in particular problems is convenient (like for instance the focus on exchange). Nevertheless, I would argue that methodology might equally be caused societally. Serious ideology-critique must, therefore, necessarily engage in methodological dimension in the same way as it does in the normative and substantive dimensions. In total, genuine methodological critique, in the sense of considering it ideological itself, is scarce. Although the method is described as a-historic and methodologically individualistic, the consequences of that are not elaborated. What does it mean to model purely in deductive terms and to abstract from time, and not only history? How is production theorized in a deductive and static methodology? And in what relation does method stand to the industrial society? And especially, what immanent contradictions cannot be resolved by the underlying methodology. Those are questions, that add another dimension of ideology-critique, the dimension of method.

A third issue, and that is also a major one, is that little discussion is dedicated to general equilibrium theory per se. In particular, since a lot of criticism is devoted to the neoclassical production function and the impossibility of aggregating capital as a factor of production (Hunt and Lautzenheiser, 2011 chapter 16). The whole reswitching debate and the Cambridge capital controversies, however, deal with contradictions that

32 Think of Friedman's 'Capitalism and Freedom' (Friedman, 1962). Or Pareto, who is considered a precursor of fascism (cf. Cirillo, 1983; Zanden, 1960)

general equilibrium theory has formally overcome. Axiomatic general equilibrium theory does not rely on the aggregation of capital or labor in advance, it does not even need the notion of a production function, the choice category is a production set instead. The discussed work therefore needs not only to be extended to a broader concept of ideology, but also historically, to capture the immanent contradictions of the most sophisticated version of neoclassicism, general equilibrium theory. Its discussion follows later on and it will be discussed what aspects of the definition of neoclassicism provided by Hunt and Lautzenheiser carry over to it.

Krätke also considers neoclassicism as the intellectual stream aiming to overcome the immanent class-conflict in labor theories of value, and claims that it was a reaction to labor movements and the increasing threat of socialism (Krätke, 1999, p. 4). It is the intellectual program of the formalization of the concept of social harmony, and it deals only with exchange and exchangeable quantities. Concerning the method, Krätke argues that neoclassicism oriented towards the role model of contemporary physics and aimed to develop economics into an exact and formalized science that produces exact and quantifiable predictions of its categories. Jevons, Walras and Pareto, according to Krätke, explicitly emulated mathematics and physics and theorized their central concepts of value, commodity, utility, marginal utility, equilibrium and so on in resemblance to the physical categories of particle, space, force, energy and so forth (Krätke, 1999, p. 3f). This is also argued by the historian of economic thought, Philip Mirowski (cf. Mirowski, 2005, 1989). Krätke is explicit about the fact, that marginalism was not created out of apologetic motives, but was a necessity for developing a scientific theory similar to the role model of the natural sciences. And that role model implied producing mathematically accurate theories of the – as quantifiable assumed – economic categories (Krätke, 1999, p. 5f). Although theory is not understood as being purely apologetic, the ideological role of method is also not discussed in detail. It is not obvious why in the physical sciences this particular mode of explanation of empirical prediction became dominant and especially, why in economics there was the need to resemble that mode. Why did it become necessary to produce theories in terms of predictable and quantifiable results, and what does it mean to predict and quantify social entities? Such questions remain unanswered if methodology is not addressed adequately.

Contrary to such methodological adaptations due to changing – but unexplained – scientific standards, Krätke identifies certain adaptations as being purely ideological, where under ideological he means apologetic (Krätke, 1999, p. 6). Such changes in methodology were for instance the changes in utility theory due to the socialist consequences of marginal theory, which gave rise to Pareto's indifference curves and an ordinal concept of utility. It is important to stress once more, that according to Krätke as well as to Hunt and Lautzenheiser, the very-well known criticism of the implausibility of a concept of utility that is inter-personally comparable became only relevant to utility theorists, once the unintended political consequences were developed. Hence, *up to a certain extent*, scientific standards in economics changed according to their apologetic value.

A consequence drawn from the shift to ordinal utility theory, was that value as a relevant category vanished from scientific explanation and prices could not be explained anymore, but rather had to be taken as givens, or at least the structure of the explanation of prices changed. Since utility, and hence value, is no

longer observable and measurable, prices cannot be predicted on this basis anymore. Rather, the explanatory focus shifts towards explanation of existence of equilibria and corresponding prices and centers around the notions of optimality and efficiency. This means that of interest is no longer what actual prices will be in specific markets, but rather for what price vectors an efficient equilibrium allocation exists. This theory has its historical and logical culmination point in general equilibrium theory. It is the logically consistent axiomatic theory, that relates to capitalist society in a similar way that utility theories of value did over the historical course of economic thought and it will be discussed in detail in the subsequent section. Critiques of general equilibrium theory will be discussed below. Before considering external critics, I first want to discuss the self-perception of general equilibrium theory according to some of its most prominent proponents. Obviously critique requires to know its object of critique and it will be clear that influential general equilibrium theorists are very well aware about some deficiencies of their theories. A serious discussion, I think, begins with the discussion of those fallacies accepted by the proponents of general equilibrium theory themselves.

3.3 General Equilibrium Theory – the Neoclassical Self-Perception

That neoclassicism needs to be understood historically, and that the welfare theorems of general equilibrium theory relate to the capitalist formation of society in a similar (but unintendedly different) way that Smith's theory did, is not only clear for critics. Mas-Colell, Whinston and Green in their famous graduate textbook *Microeconomic Theory* (Mas-Colell et al., 1995) are very explicit about that historical heritage when they argue that

”[...] the first fundamental theorem of welfare economics, [is] a formal expression for competitive market economies of Adam Smith's claimed “invisible hand“ property of markets“ (Mas-Colell et al., 1995, p. 545)

Fisher is even more explicit about the relation of neoclassical theory to capitalism and the status of the welfare theorems, stating that:

“The central set of propositions that economists have to offer the outside world – propositions that are, in a real sense, the foundations of Western capitalism – comprises the two Welfare Theorems. These theorems elucidate the relations between general competitive equilibria on the one hand and Pareto-efficiency on the other. They underlie all the looser statements about the desirability of a free-market system.” (Fisher, 2005, p. 74)

General equilibrium theory is, as understood by some of its most prominent proponents, a scientific justification or legitimation for the existing formation of society. It is not only the logically most consistent version of the so called invisible-hand argument since the rise of neoclassicism because it does not entangle with the

issue of utility comparison and does not rely on the apriori aggregation of capital³³. It is also free of *logical* contradiction. This logical precision, however, laid out also in a precise fashion the extremely narrow conditions under which it actually can be expected to hold that markets produce desirable outcomes. Hence, it also reveals the *implausibility* of the invisible hand argument. In that sense, there is indeed a relatively strong critical moment within general equilibrium theory itself. However, despite its logical consistency, general equilibrium theory is plagued by other severe issues. Before I consider those criticisms, I will discuss how general equilibrium theorists themselves understand their theories. In particular, I will consider the elaboration of Mas-Colell, Whinston and Green in their *Microeconomic Theory* (Mas-Colell et al., 1995), as it is the most frequently used graduate textbook on the subject, and some theorists' considerations collaborating in a book on general equilibrium theory, edited by Hahn and Petri (Petri and Hahn, 2005), on prospects and problems of contemporary general equilibrium theory. Frank Hahn is a general equilibrium theorist who is known to have engaged extensively in methodological discussions and the anthology edited together with Petri contains quite some self-criticism from general equilibrium theorists³⁴.

3.3.1 On Generality

First, let me discuss what is actually meant by generality, why it is considered a *general* equilibrium theory at all. Mas-Colell, Whinston and Green argue that generality has two aspects. A methodological and a substantive one. Although I consider such a distinction invalid and show in chapter 4 that method and substance are fundamentally intertwined, for the time being let us consider Mas-Colell, Whinston and Green's characterization of generality. At the methodological level, generality consists of describing the economy as a closed and interrelated system. Equilibrium values for all endogenous variables are determined simultaneously and the set of exogenous variables is reduced to a minimum, the authors talk about those exogenous variables as "a small number of physical realities" (Mas-Colell et al., 1995, p. 511). Those consist of the set of economic agents, available technologies, preferences and endowments. Note, that the authors consider preferences and technologies to be physical rather than social realities. This naturalizes both categories and veils their societal character. What role neoclassical methodology plays in the naturalization and affirmation of the existing is discussed in the following section. That methodology is indeed very particular instead of general or universal will be discussed extensively in chapter 4. For the time being, we acknowledge that neoclassicals consider their theories to be methodologically general specifically *because* of the lack of explanation of technology and preferences (or needs). Those are considered explanans, not explananda. On the substantive level it is considered "a theory of determination of equilibrium prices and quantities in a system of perfectly competitive markets." (Mas-Colell et al., 1995, p. 511). Such markets are called Walrasian mar-

33 The former of the two inconsistencies was briefly discussed above. The latter, the criticism of the neoclassical need to aggregate capital before determining prices in order to feed the neoclassical production function with its two inputs, labor and capital, was object of the famous Cambridge capital controversies. Hunt and Lautzenheiser provide a chapter in their book on this debate (Hunt and Lautzenheiser, 2011 chapter 16). A critical reconsideration of it after the rise of general equilibrium theory is pursued by Petri (cf. Petri, 2005a, 2005b).

34 It also contains plenty external criticism, especially from Neo-Ricardians. I will refer sometimes to those criticisms, the focus, however, lies on the illustration of general equilibrium theory from the point of view of its proponents.

kets. Within the framework of general equilibrium theory, Marshall's concept of partial equilibrium can be considered a special case with the appropriate assumptions on preferences³⁵. Hence, it becomes possible to identify the importance of certain assumptions, driving the theoretical results. We will see, that certain assumptions that are absolutely necessary for establishing the welfare theorems are at least highly questionable, as admitted by neoclassicals themselves. The generality stems also from its abstract formulation, which employs the concept of abstract commodity spaces. This allows different interpretations of the theory. The standard case is to interpret every dimension in the commodity space as representing one particular commodity. A commodity space of dimension three for instance may then consist of all the possible quantities of the three commodities computers, bottles of water and bikes. However, a temporal interpretation of the very same model with an abstractly identical commodity space of dimension three could consider the availability of only one commodity but at different points in time. A dimension might then correspond to computers today, the second to computers tomorrow and the third to computers in one year. Similarly, a spatial interpretation considers the availability of the same commodity at different geographical locations. The spatial and the temporal interpretation can obviously be combined and complete markets according to that interpretation require a market for each commodity at each location at every point in time. Additionally, it can be specified at which state of the world the commodity is available. More concretely, this means that there must exist a market (in the present, since exchange takes place immediately and only once in the model) for computers in London on the 13th of December 2061 if there is an earthquake in Vienna on the day before. This is considered generality in the sense, that for instance the abstraction from time and the sole focus on the spatial dimensions of commodities establishes the theory of international trade. Obviously complete markets in the combined interpretation of spatial and temporal differentiation of commodities then require infinitely many dimensions³⁶. Accinelli discusses issues with such large models, in particular intertemporal models, in detail (Accinelli, 2005). It suffices here to acknowledge that issues from the finite-dimensional case carry over to infinite case and additional issues arise (Accinelli, 2005, p. 36). Therefore, I focus on the discussion of the case of finitely many dimensions, since the criticism also carries over to the more general case.

3.3.2 A study of Private Ownership Economies

According to Mas-Colell, Whinston and Greene, the study of equilibrium can be decomposed into a normative and a positive, or prescriptive, analysis. The former consisting of the desirability of market outcomes, Pareto optimality and the welfare theorems and the latter dealing with the existence and uniqueness of equilibria (Mas-Colell et al., 1995, p. 512). In both cases, if the strict separation is accepted at this point of elaboration, the relevance of the theory depends upon the relation of theory to reality, of which is surprisingly little said. It is argued that general equilibrium theory is useful for studying the 'performance' of an entire economy. It is more useful than, say partial equilibrium theory, because it is more general and therefore supposedly more realistic (Mas-Colell et al., 1995, p. 512). However, what makes a model more or less *realistic*

35 Quasi-linear preferences are those that will do the job, since they do not allow for wealth effects and therefore the demand for one commodity is independent of the price of every other commodity.

36 Even uncountably infinitely many, since both, space and time are continua.

is left to the reader's imagination. Interestingly, Hahn very explicitly rejects the idea that general equilibrium theory is useful or practical in this sense. He writes:

"I myself have always had a rather modest view of economic theories. In the first place they are Gedanken Experiments and a substitute for real experiments which to put it mildly are hard to perform in economics. In the second place they are a sort of quality control...they enable one to spot nonsense in policy arguments. These seem to me sufficient rewards and there is no reason to try and save our [economic theorists'] self respect by applying our theories *tout court*." (Hahn, 2005, p. 30)

Hahn does not however, based on the insight that economic models do not represent reality empirically, consistently question what that means for capitalist market systems, which are according to his colleagues only justified by those very same thought experiments. If one accepts Hahn's humble interpretation of those models, wouldn't that imply at least great skepticism regarding the optimality of the capitalist market system? This is actually the point, where the critical potential of general equilibrium theory has its limits. If one comes to the conclusion that markets in general are far from being efficient and economic policies are typically based on fundamentally wrong theories one must conclude that society as it is must be in some sense irrational and undesirable itself. In chapter 4 I show that more elaborate critique, critique that requires to think beyond the existing, cannot be achieved by general equilibrium theory because it is in itself methodologically tied to the existing.

Let me discuss those 'Gedanken Experiments' in detail, to see what they actually claim about markets and social desirability. What is it actually that general equilibrium theory states, and how are those statements formulated? I will discuss the basic model verbally without formal notation for the reason that I want to highlight the substantial content without distracting from it by complicated mathematical expressions. If Samuelson is to be believed and there is a "Strict Equivalence of Mathematical Symbols and Literary Words"³⁷ (Samuelson, 1952, p. 56), this should not distort or misrepresent the theory in any sense.

The object of interest for general equilibrium theory are competitive economies, where agents act as price-takers, meaning that nobody has influence on- and nobody sets the prices in the market. Those economies are private-ownership economies, where consumers' wealth is determined by the ownership of initial endowments and claims to profit shares (Mas-Colell et al., 1995, p. 545). The economy consists of a number of consumers, a number of producers and some available technologies, an initial assignment of externally, or exogenously, given endowments and claims to profit shares. Those ingredients are formally captured in the individual preference sets on the different consumers' consumption sets, production sets for the different producers, an endowment vector for each consumer and a vector for the claim for profit shares. This means, that there is some apriori given world with lots of different commodities, at first they need not be produced, they simply exist. Consumers can rank any combination of consumption bundles that they can afford under given prices consistently. Producers have a given set of possibilities according to which they can transform

³⁷ Which seems highly debatable, I would say. Clearly any mathematical expression can at least in principle be stated verbally, but to claim the reverse seems somewhat heroic. Anyways, for the elaboration at this point, the former is sufficient.

input commodities into output commodities, which captures the technological limitation of production. This technological limitation of production also simply exists, it is neither caused by economic agents or forces, nor can it be changed. Consumers are assumed to act according to choosing their most preferred consumption bundle under the restriction of a budget constraint, which is determined by the initial endowment of the consumer and her profit shares from the producing firms. Producers are assumed to act according to choosing the most profitable input-output combination out of the available combinations. Some commodities can be pure production goods, some can be purely for consumption, some can serve both³⁸. The restriction on producers consists in the apriori limited and fixed set of such available combinations. Both, consumers and producers take market prices as given, they are price-takers. Consumers own the producing firms, because the shares of claims on every producer's profit are completely distributed among all consumers. It is not required to specify in which way those are distributed. The shares of every firm might be claimed by one consumer, but also equally by all consumers or in any other exhaustive fashion (Mas-Colell et al., 1995, p. 546f). In that sense, specific property considerations are *not* central to the characterization of Walrasian markets, as long as *everything* is owned by *someone*. An equilibrium for such a price-taking competitive private-ownership economy is called a Walrasian equilibrium.

3.3.3 Pareto Optimality and the Fundamental Theorems of Welfare Economics

The formulation of the mutually beneficial character of exchange via markets requires reference to a normative concept, according to which market outcomes can be considered beneficial in the first place. The required concept is the already discussed notion of Pareto optimality. It evaluates allocations of resources. Allocations are specifications of consumption bundles for each consumer and production activities for each producer. Of those, only the feasible ones are of interest. Feasibility simply means, that what is ultimately to be consumed in quantity does not surpass what is produced and what is initially owned by the whole economy. An allocation is Pareto optimal or Pareto efficient if there is no other feasible allocation that satisfies the needs of all consumers equally well but at least that of one consumer strictly better (Mas-Colell et al., 1995, p. 547). Note that the according notion of Pareto improvement captures *mutually* beneficial reallocation of resources. A Pareto improvement is a change from one allocation to another, where *all* consumers are at least as good off as before and at least one is strictly better off, in terms of their preference rankings. According to Mas-Colell, Whinston and Greene „[a]n allocation is Pareto efficient if there is no waste: It is impossible to make any consumer better off without making some other consumer worse off.“ (Mas-Colell et al., 1995, p. 547). As they argue, it is not in itself concerned with distributional issues, extreme inequality can be Pareto efficient, just as perfect equality can be. I will discuss the implicit normativity of Pareto optimality below. However, note at the moment that establishing a single standard as the foundation of the normative analysis and giving it a scientific status renders any other normative discussion unscientific and establishes a hierarchy among normative considerations, which is not rationally established. Hence, neoclassi-

³⁸ The theory works without production as well, pure exchange economies fit perfectly into the framework. In fact, Mas-Colell, Whinston and Greene in the development of their theory introduce every concept first for the case of pure exchange economies. The introduction of production in the analysis is considered to be a mere generalization of the established exchange economy.

cal's silence about distribution is in fact quite treacherous. In particular, when such normative principles are not rationally established. Mas-Colell, Whinston and Greene introduce it taciturnly: "A notion of a socially desirable outcome that we focus on is that of a *Pareto optimal* allocation." (Mas-Colell et al., 1995, p. 547). The intelligibility of Pareto optimality supposedly does not require any argument. It seemingly just is. There does not seem to be much intra-scientific reasoning why it is of more interest than, say, material equality. One can only refer to the already discussed necessity to avoid the socialist consequences of utility theory.

This discussion will be pursued further below. For now, it is important to note that Pareto optimality is at the very heart of general equilibrium theory and the Fundamental Theorems of Welfare Economics. With the definition of competitive markets, their ingredients and the normative concept of Pareto optimality, the fundamental welfare theorems can be established.

3.3.4 Fundamental Theorems of Welfare Economics

3.3.4.1 The First Fundamental Theorem of Welfare Economics

The First Fundamental Theorem of Welfare Economics deals with the conditions under which Walrasian equilibria are Pareto optimal. A *Walrasian equilibrium* is defined by an allocation and a price vector, i.e. a price specification for every commodity, with the following properties:

- i. Every producer maximizes profits under the given prices and the given allocation³⁹.
- ii. Every consumer gets the consumption bundle that maximizes her preference relation on the budget set given the prices.
- iii. The sum over all consumption bundles of all consumers exactly equals the sum over all production activities of all producers and what is initially owned by the whole economy.

The condition under which such an equilibrium is Pareto optimal is local non-satiation of consumers preferences⁴⁰. This condition means, roughly speaking, that for any consumption bundle, there exists an arbitrarily similar consumption bundle that is preferred to the initial bundle by the consumer. Where being similar refers to containing the same commodities but slightly (even arbitrarily small) different quantities of at least one of them (mathematically it means that for each consumption bundle in the commodity space there exists another consumption bundle arbitrarily close to it that is preferred to the initial bundle). If there is at least one commodity that is actually a good and not a bad, this reflects the notion of 'more is better'. For whom the conditions of this theorem seem quite generous, might be warned because besides this single *additional*

39 Profit is in this model the product of the price vector and the chosen production vector. According to the sign-convention which characterizes input commodities with a negative sign and output commodities with positive sign, the profit vector product yields the sum over all revenues minus the sum over all costs.

40 The proof of this theorem is somewhat more general, since it proves that every price-equilibrium with transfers is Pareto optimal under this condition. Walrasian equilibria are special cases of such price-equilibria with transfers and hence the theorem holds particularly for Walrasian equilibria. Since the concept is not necessary for making the point here, I chose to discuss it only when it becomes necessary – hence, when discussing the Second Welfare Theorem – and leave it out at this point. Chapter 16 of Mas-Colell, Whinston and Green's *Microeconomic Theory* (Mas-Colell et al., 1995 chapter 16) leads through all the technical details in a mathematically rigorous manner.

assumption of local non-satiation, the typical assumptions of price-taking and complete markets are presupposed. Nevertheless, even if taken those assumptions for granted, or as a ‘useful’ approximation to reality, this theorem already describes plenty of reasons for market outcomes to not be Pareto efficient: market power, externalities and asymmetric information (Mas-Colell et al., 1995, p. 550). A critical interpretation of the theorem reads as follows:

“Only if there are no external effects, only if all markets are competitive, and only when all markets are in equilibrium is it true that a market economy will yield a Pareto optimal outcome.” (Hahnel, 2007, p. 1141)

This means that oligopolistic and monopolistic structures (either on the demand or supply side) render market outcomes inefficient, one might also think of big unionized strikes affecting the wage (supply-sided). Externalities are such a broad category and they capture lots of phenomena such that it is extremely implausible to believe in the notion of approximation of reality by the model. Not only do they capture the notion of public goods such as education, infrastructure or the like, but also any sort of spillovers, be they environmental spillovers, knowledge spillovers or network effects. Interest in other people, or altruistic preferences, in the framework of general equilibrium is also an externality. Asymmetric information is probably getting more and more important, as data becomes increasingly a valuable resource in contemporary capitalism⁴¹. Taking, therefore, the First Fundamental Theorem of Welfare Economics quite literally, seems then quite in contrast to the proclaimed generality of Smith’s invisible-hand argument. Dealing with this, however, neoclassical economics developed sub-disciplines like competition policy and others, as already argued in the review of Hunt and Lautzenheiser’s history of economic thought⁴². In sum, when one interprets the theorem quite literally one comes very straight forward to ask one self the following question, that Hausman and McPherson pose:

“Who cares whether a perfectly competitive economy, which is not possible, is Pareto efficient and whether such an impossible economy could, as a consequence of an infeasible initial distribution, also result in an equitable distribution of income?” (Hausman and McPherson, 2008, p. 242f)

However, to answer said question already requires ideology-critique, at least implicitly. We have seen that the welfare theorems are considered to be the foundational justification of western capitalism, at the same time they are highly implausible with respect to depicting actual reality. The ideological and technocratic consequences of equilibrium methodology will be discussed in chapter 4.

41 For a contemporary discussion about the changing nature of capitalism in the light of platform-based production and distribution and new technologies such as artificial intelligence consult for instance Srnicek (Srnicek, 2018).

42 An immensely important theoretical reaction to the issue of externalities was clearly the Coase Theorem (Coase, 1960), which provided conditions under which the internalization of externalities, which ultimately is the extension of market relations, still assures Pareto efficient outcomes. Basically it states, that if property relations can be enforced on the factors causing externalities, the market will still assure efficient outcomes. Irrespective of the specific allocation of property rights.

3.3.4.2 The Second Fundamental Theorem of Welfare Economics

The Second Fundamental Theorem of Welfare Economics provides conditions under which any Pareto optimal allocation can be implemented through competitive markets and is in this respect inverse to the first theorem (Mas-Colell et al., 1995, p. 556). It basically states, that any Pareto optimal allocation can be supported as a price-equilibrium with transfers⁴³. Essentially this means that some authority wishing to implement a specific Pareto optimal allocation can do so by reallocating wealth (in terms of initial endowment) via lump-sum taxation and then let the market do the rest. The necessary assumptions are more strict than for the first theorem, it requires additionally to local non-satiation of preferences all individual production sets and all individual preference relations to be convex. Note, that production sets are convex, when they exhibit non-increasing returns to scale. In other words, when production is of such a structure that a higher productive capacity does not result in more efficient production. Increasing returns to scale support ‘natural monopolies’, typically argued to be managed efficiently only by some benevolent centralist authority, favoring nationalization of that monopoly. A conclusion that made already Marshall drop this assumption (Hunt and Lautzenheiser, 2011, p. 292ff). Note, how a central authority managing economies of scale supposedly opposes the idea of free-competitive markets and the welfare theorems. This neoclassical anti-authoritarianism, however, is self-contradictory and inconsistent. For, even if market power and the necessity for ‘natural monopolies’ are ruled out, the free competitive market does require a centralized planning authority, as we will see in the following.

3.3.5 Prices and Planning – The Planning Authority

Interestingly, when Mas-Colell, Whinston and Green talk about the implementation of a Pareto optimal allocation according to the second welfare theorem they are quite skeptical:

“[A] first observation [...] is that *a planning authority* wishing to implement a particular Pareto optimal allocation must be able to insure that the supporting prices [...] will be taken as given by consumers and firms. If the market structure is such that price-taking behavior would not automatically hold (say, because economic agents are not of negligible size), then the *planning authority* must somehow enforce these prices [...] a second observation is that the information of a planning authority that wants to use the second welfare theorem must be very good indeed.” (Mas-Colell et al., 1995, p. 556f emphasis added)

The planning authority, which is an interesting entity to be introduced in the context of competitive markets, not only depends upon the right market structure (the same issues as with the first theorem) but additionally needs to know all individuals’ preference structures, endowments and all feasible technologies in order to

⁴³ A price equilibrium with transfers is a generalization of a Walrasian equilibrium. It allows additionally for consumers’ wealth to be determined not only by their initial wealth and the claims to profit shares but also through lump-sum wealth transfers. The only restriction is that total taxation levels out, meaning that it is redistributed between the consumers in a zero-sum fashion. The Walrasian equilibrium is the simple case, where the taxation for each consumer is zero.

compute the according equilibrium prices and wealth levels. Even if such an authority exists and can collect all such data, it needs to have the power to actually enforce such a tax system upon all agents (Mas-Colell et al., 1995, p. 557). Hence, the dream of social harmony achieved through markets is revealed, precisely by general equilibrium theory itself, to depend upon a centralist authoritarian entity. One might ask whether the bourgeois democratic ideal of individual freedom has any place in the ‘private ownership market economy’ enforced by such an all-powerful authority. It was already clear to Walras himself, although as a positive utopia for him, that perfect competition requires a very active state (cf. Cirillo, 1980, p. 301). The desirability of the invisible hand argument always required the iron fist of a centralized entity, the government⁴⁴. And such an entity is not only required for the second welfare theorem, but also for the first one. For in the model structure, due to the assumptions of price-taking and the static method of equilibrium description, there is no one left to actually set the prices in the market but the fictional authority of the Walrasian auctioneer. The Walrasian auctioneer is a fictional figure that is imagined to cry out all possible price vectors and collect the according supply and demand data in the economy and then set the equilibrium prices. Those prices where supply and demand plans coincide in the aggregate. The necessity of such a fictional powerful authority to actually establish equilibrium in markets resulted in the planning debate already back in the 1930’s, where it was argued that the results of general equilibrium theory support a socialist planning economy just as much, or even more, as they do a free market system. It requires a central coordinating authority and the results are compatible with any initial distribution of wealth (Gintis, 2005, p. 178).

3.3.6 A Positive Theory of Existence and Properties of Equilibria

So far, I have presented what neoclassicals consider to be the normative aspect of their theory – the fundamental welfare theorems. They establish a certain relationship between market equilibria and efficiency. However, the flip side of the coin is the analysis of the existence of equilibria. The invisible-hand argument is only complete, once it can be guaranteed that an equilibrium even exists. Such analysis is considered to be the positive aspect of equilibrium theory and supposedly deals with “the theoretical predictive power of the Walrasian equilibrium model” (Mas-Colell et al., 1995, p. 579). The Walrasian equilibrium is considered to be

“a positive prediction for the outcome of a system of markets in which consumers and firms are price takers and the wealth of consumers derives from their initial endowments and profit shares.” (Mas-Colell et al., 1995, p. 579)

⁴⁴ Walras, one of the founders of general equilibrium theory and neoclassical economics had a quite utopian interpretation of that fact. He thought that the free competitive economy together with a central state could get rid of any oppression. According to him, a state that nationalized land could finance through the achieved rents to abolish all taxes on wages and salaries. Then, proletarians, whom he considered contrary to his utility theory of value oppressed, could become small capitalists by saving the money they would have otherwise paid in taxes. The state should assure that no monopolies can arise and the true conditions for a perfectly competitive market system hold (cf. Cirillo, 1980). Walras, who considered himself a democratic socialist (Cirillo, 1980, p. 300), had an utopian vision of society that corresponded very closely to the second fundamental theorem of welfare economics. However, he had no critical analysis of the state as an institution of upholding and enforcing oppression. For an introductory overview of Walras’ work, that goes beyond his accomplishments in mathematical economics consult Bürgenmeier. (Bürgenmeier, 1994)

Nevertheless, a prediction according to the deductive-nomological mode of explanation⁴⁵ requires the prediction from *observed* or *known* premises. In such an explanation, if the premises are true, and the deductive reasoning is correct, the conclusions must hold true as well. However, price-taking as the general mode of behavior – which is basically no behavior – cannot in principle be observed (but is a logical premise for the argument), prices must come from somewhere⁴⁶. Also, preference structures need to be assumed, they cannot be observed. Simply note that the prediction of equilibria rests on the actions of the Walrasian auctioneer, since there is no positive theory on price formation other than that. I want to argue, and I will elaborate on that in detail in chapter 4, that neoclassical explanation typically involves rationalization instead of prediction and is deeply entangled with the normative affirmation of the status quo. For now, however, consider how this positive aspect of theory is formulated, as summarized by the historians of economic thought, Colander and Su:

“In their positive work economists see themselves as technicians for society – carrying out theoretical or empirical analysis that can be used by anyone. It is this technical empirical work that economists discuss when they discuss methodology, and what they have in mind when they say they are doing positive economic analysis.” (Colander and Su, 2015, p. 167)

Mas-Colell, Whinston and Green show that competitive equilibria are actually solutions to a system of linear equations (Mas-Colell et al., 1995, p. 579f)⁴⁷ and the natural question that first comes to mind faced with such a problem is whether this system has a solution. This is what they refer to “as the *existence problem*.” (Mas-Colell et al., 1995, p. 584). If it is the case that a solution exists, i.e. a Walrasian equilibrium exists, then it is of interest whether this equilibrium is unique. Note, that the welfare theorems are meaningless as the foundations of Western capitalism, as Fisher puts it, if there are no such conditions that guarantee the existence of equilibria.

Finding conditions that assure uniqueness of equilibria is of particular importance, not only for predictive success but also because it is deeply tied to the notion of stability. If lots of equilibria exist and, in neoclassical vocabulary, a shock hits the economy and drives it out of equilibrium (assuming it ever was in equilibrium), there is no reason to believe that the prices and quantities will adjust in such a way that synchronizes utility and profit maximization. However, being precise, stability is not guaranteed by uniqueness of an equilibrium. In simple terms, stability requires that given the economy is in equilibrium, small disturbances (or shocks) will not cause the economy to permanently drive out of equilibrium but rather adjust back to the ini-

45 The deductive-nomological mode of explanation is the role model mode of explanation for economists, taken from the natural sciences and supported by critical rationalists. For a critique of that mode of explanation and the underlying ontological fallacies, consider once more Bhaskar (Bhaskar, 1998c, 1998d).

46 The escape of observing relatively small market participants as an instrument for price-taking behavior does not work. This is due to the fact that universal price-taking behavior is conceptually not possible. If there is no agency of price, there is no price. That is the whole point of introducing the Walrasian auctioneer.

47 The equations in question are excess demand functions and a solution consists in a price vector that yields the value of zero for the aggregate excess demand function. An excess demand function is positively valued if, given the prices, the quantity demanded is higher than the quantity supplied, i.e. if there is a shortage. It is negatively valued if there is a glut, i.e. if the quantity supplied exceeds the quantity demanded.

tial equilibrium. At this point I will not discuss in detail the relation between uniqueness and stability of equilibria because stability is a property that describes how the economy might behave, when it already finds itself in an equilibrium. This, however, presupposes that the economy gets in equilibrium somehow in the first place, for which no theoretical argument exists within general equilibrium theory. Nevertheless, even if this argument is ignored and it is assumed that equilibria are stable (at least locally⁴⁸) and unique, according to the *Sonnenschein-Mandel-Debreu Theorem*, the desirability of market equilibria cannot even be rationally established in the ideal world of Walrasian markets. The theorem, stated in its first versions for a two commodity economy by Sonnenschein in 1972 and 1973 and generalized by Debreu and Mantel in 1974, induced an intensive discussion about the scientific status of general equilibrium theory and in particular its rather positive portrayal of markets and market outcomes (cf. Ackerman, 2002; Rizvi, 2006). The reason that it caused so much discussion is that it is considered to be rather negative in the sense that it, among other arguments within general equilibrium theory, relativizes the invisible hand argument. According to it, only few unspecific properties of aggregate demand behavior can be deduced from individual demand behavior, as long as the number of consumers surpasses the number of commodities. Loosely, according to Ackerman, it states that

“almost any continuous pattern of price movements can occur in a general equilibrium model, so long as the number of consumers is at least as great as the number of commodities.” (Ackerman, 2002, p. 3)

To be more precise about what ‘almost any continuous pattern’ means, we consider again Mas-Colell, Whinston and Greene’s *Microeconomic Theory*. Any function that is continuous, homogeneous of degree zero and satisfies Walras’ Law⁴⁹ can coincide with the aggregate excess demand function of an economy for all feasible price vectors (non-negative prices) in its domain (Mas-Colell et al., 1995, p. 602f). The authors interpret the results of the theorem as “Anything satisfying the few properties that we have already shown must hold, can actually occur.” (Mas-Colell et al., 1995, p. 598). This means, that in particular, uniqueness and stability of equilibria are not typically the case. Furthermore, even if all individuals are perfectly rational in terms of maximizing their preference relation, the aggregate does not need to be. Even the assertion of a decrease in quantity demanded with an increase in price need not hold in the aggregate⁵⁰, hence downward-sloping excess demand curves are not guaranteed. ‘Anything goes’ is, typically enough, the header of the

48 Local uniqueness is guaranteed by finitely many equilibria, since one equilibrium cannot get arbitrarily close to another. However, local uniqueness does not guarantee that the economy does not transition from one equilibrium to another in case of a shock, if the shock is sufficiently large. Stability is therefore not assured by local uniqueness.

49 Walras’ Law states that an economy with n commodities is in equilibrium if the markets for $(n-1)$ commodities are in equilibrium. This means that excess demand or excess supply cannot exist in one single partial market if all but one markets have zero excess demand. In terms of a function, a n -dimensional function that yields value zero in all but one dimensions must yield value zero for the last dimension automatically.

50 Hildenbrand, an acknowledged general equilibrium theorist, argued that the utility maximization principle, i.e. the microfoundation of economic aggregates, is utterly useless and empirically empty. Instead of making assumptions on individual behavior, which are in the end only validated by the aggregate behavior they yield, one should make assumptions on the aggregate in the first place. Those are more easily justifiable and have actual empirical content. (Hildenbrand, 1985)

section discussing the theorem in *Microeconomic Theory*. To summarize the problems revealed by this theorem, consider Rizvi's interpretation of it:

"It is also a deeply negative result. SMD [Sonnenschein-Mantel-Debreu] theory means that assumptions guaranteeing good behavior at the microeconomic level do not carry over to the aggregate level or to qualitative features of the equilibrium." (Rizvi, 2006, p. 230)

This is, indeed, quite impressive since it contradicts, or at least drastically weakens, the idea of social harmony achieved through individual self-interested behavior on markets around which general equilibrium theory was developed in the first place. Note that it states that even under ideal conditions and the assumptions of perfectly rational individuals with complete preference orderings, perfectly competitive markets and no externalities, there is no possibility to actually reasonably predict a specific equilibrium for the aggregate economy. There is a plethora of equilibria with all kinds of properties for any specification of the system of equations on the individual level. More so, even the all-mighty planning authority cannot simply install a particular desirable equilibrium, because general equilibrium theory gives no answer of how different equilibria relate to each other. The development of economic sub-disciplines is crucially linked to the insights of this theorem (Rizvi, 2006, p. 230). However, as Ackerman argues, admitting those destructive results gets the profession in trouble:

"General equilibrium is fundamental to economics on a more normative level as well. A story about Adam Smith, the invisible hand, and the merits of markets pervades introductory textbooks, classroom teaching, and contemporary political discourse. The intellectual foundation of this story rests on general equilibrium [...] If the foundation of everyone's favorite economics story is now known to be unsound [...] then the profession owes the world a bit of an explanation." (Ackerman, 2002, p. 126)

The problem might be, that the profession does not seem to have an explanation. The more theoretically involved economists even acknowledge the limited explanatory power of their theories, especially when it comes to understanding dynamics of economies. Besides Frank Hahn's quote regarding the practicability of general equilibrium theory above, Mas-Colell, Whinston and Greene admit that economics has not much to offer about dynamics and that static investigation of the equilibrium equations is at the very core of neoclassical economics. The focus is on "recognizing a state of equilibrium" but not so much on "predicting precisely how an economy in disequilibrium will evolve." (Mas-Colell et al., 1995, p. 620). Accinelli argues similarly that other sciences devote more attention to the dynamic formation of their subject (Accinelli, 2005, p. 44). However, it is not the case that neoclassicals do not deal with changing economies. This was always an aspect of their theories, but they deal with them either in terms of comparative statics or intertemporal equilibrium theory. The lack of genuine dynamic reasoning in neoclassical methodology and its consequences will constitute one of the main criticisms in chapter 4.

3.3.7 The Dynamics of Neoclassicism: Intertemporality and Comparative Statics

Comparative statics investigates how the solutions to the system of equations change, if an exogenous shock happens, i.e. when there is an unexplained or assumed change in parameters of the model. Comparative statics allows for comparing the properties of different equilibria, depending upon different sets of parameters. It does not, however, enable to theorize the transition from one equilibrium to another. Whereas modern general equilibrium theorists share this limited explanatory scope of comparative statics (see the quotes above from Masc-Colell, Whinston and Green or Accinelli), early marginalists were much more optimistic. Von Mises, for instance, argues that

“One must not commit the error of believing that the static method can only be used to explain the stationary state of an economy, which by the way, does not and never can exist in real life; and that the moving and changing economy can only be dealt with in terms of a dynamic theory. The static method is a method which is aimed at studying changes; it is designed to investigate the consequences of a change in one datum in an otherwise unchanged system. This is a procedure which we cannot dispense with.” (in Kurz and Salvadori, 2005, p. 224f)

The axiomatic formulation of general equilibrium theory and the characterization of equilibria as the solution to systems of equations makes clear that von Mises’ interpretation is wrong. Formally, two different systems of equations are two different things. They are not related to each other beyond the similarity of their structure and hence we cannot conclude anything about their possible transitions without a more general dynamic theory. On the incompatibility of the deductive method employed in neoclassical economics and a dynamic society remember Lawson’s definition of neoclassicism, which is based exactly on this ontological-methodological contradiction.

Intertemporality, on the other hand, is the aforementioned consideration of commodities distinguished according to their availability at different points in time. It should be clear at this moment of elaboration, however, that this specific interpretation of the abstract model does not change its static structure in any way. The only change one might consider is that of increasing dimensions in which case additional problems arise in characterizing equilibria⁵¹. This interpretation is important, however, since it allows theorizing risk and uncertainty, which is considered essential in explaining capital in neoclassical theory (Kurz and Salvadori, 2005, p. 228). According to Kurz and Salvadori, Hicks thought that dealing with the economy, which he considered to be a process in time, is dealt best with in terms of a sequence of temporary equilibria, where each equilibrium depends upon the individuals’ expectations of the future (Kurz and Salvadori, 2005, p. 228). In their discussion of Debreu’s *Theory of Value* from 1959, one of the founding works of axiomatic general equilibrium theory, Kurz and Salvadori highlight the static character of intertemporal models. Ex-

51 One aspect which does not seem to be discussed in the literature, at least not to my knowledge, is in what sense the Sonnenschein-Mantel-Debreu theorem applies to intertemporal models with infinite dimensions. Since the theorem requires at least as many consumers as commodities, a model with infinitely many commodities and finitely many consumers seems not to be confronted with that issue.

change (and also production plans) takes place only in the very first period, “the beginning of history” (Podczeck and Yannelis, 2008, p. 159). In fact, the correct interpretation is that actually only one period exists, because once market equilibrium is established, in consideration of all future events, nothing else happens. The system is pre-determined and deterministic. However, Podczeck and Yannelis emphasize the necessity for and additional central authority in order for such an economy to be considered consistent.

“Briefly (and condensed), Debreu’s model can be described as follows. There is a “beginning of history” where all price formation and contract trading takes place and, in particular, all individual choices are made. From then on, all actions made by the agents are determined by the choices made at this “beginning of history.” In particular, there is no revision of the strategies implied by these choices.” (Podczeck and Yannelis, 2008, p. 159)

However, if contracts are made in the beginning, who assures that in the following periods individuals will stick to their contractual obligations? Who can enforce the contracts, if individuals refuse to bear the risk they engaged in exchanging in an uncertain environment? It requires an additional central entity. This entity must not be confused with the Walrasian auctioneer. The auctioneer *only* required to know all market responses to any possible price vector. This entity, however, needs to have the actual power to force individuals to stick to what they committed to do and not change their behavior. Furthermore, an uncertain environment involves some uncertain states of the world. If exchange depends upon the realization of certain states of the world, there is also an authority required to identify the actual state of the world, since each party can claim the outcome that benefits its own contractual obligations to be true⁵². Therefore, any contractual act under uncertainty requires always a higher authority to settle potential disputes and potentially punish deviation from the contract (Podczeck and Yannelis, 2008, p. 160). This is an important insight. Inter-temporal exchange under uncertainty with its sequential character somehow gets the glimpse of the necessity of some sort of coordinating authority – either by brute force or subtle mechanisms – that assures that individuals continually behave according to the rules of the game. We see that the idealized world of perfectly competitive economies is in fact a world of centralized power.

Although, a detailed discussion of modern macroeconomics will not be pursued here, it should be noted that all of the criticisms brought up against general equilibrium theory, apply in particular to the modern so-called Dynamic Stochastic General Equilibrium (DSGE) models. They are basically extended versions of the intertemporal interpretation⁵³ of Walrasian equilibrium. Since it is an extremely important point to stress, let me quote another influential economic theorist, Alan Kirman, who states that “Walrasian equilibrium is really a static notion and we [general equilibrium theorists] have little to say about the “Invisible Hand Process””. (Kirman, 2005, p. 473). The importance of the correct assertion of the fundamental static charac-

52 The logic is that simple. If two people bet – and exchange under uncertainty is basically a bet – on the toss of a coin, they can disagree on the outcome. There needs to be a neutral party identifying the true outcome of the toss.

53 Important extensions for instance are an infinite-time horizon and the analysis of steady-states and the convergence of the economy on the equilibrium path towards that steady-state. However, there is also no theory on what happens outside of equilibria or off the equilibrium path, how prices are determined in the first place and why the aggregation of demand functions should properly work.

ter of general equilibrium theory cannot be underestimated. In chapter 4, I argue that this is one of the reasons why neoclassical theory as such is very fundamentally tied to the status quo and tends to be apologetic already on the methodological level. Before turning to criticism from non-neoclassicals, I consider one more aspect, that of production.

3.3.8 The Neoclassical Black-Box: Production

If one goes through the textbook presentation of modern economic theory, as with the mainly discussed body of *Microeconomic Theory*, the pattern of developing and establishing the models is the same throughout the book. Every concept and result is first discussed in the case of a pure exchange economy, i.e. an economy that does not involve production. The only aspect is that of efficiently allocating the initial endowments through market transactions. Once the discussed result is established, the discussion extends to a production economy. Note, that neoclassical theory treats economies with and without production structurally almost the same. In both cases the whole variety of the (possibly infinitely large) commodity space, containing production commodities such as machines and computers and consumption commodities such as food and entertainment articles, exists in advance and need not be produced in the first place. With production economies, at least some commodities need to be exchanged in order to produce other commodities. However, even in that case, the production is pre-determined by an apriori given production set, or technology. This models production basically as exchange (with nature) and is not able to fundamentally differentiate between production and consumption. This structural similarity, or symmetry, between exchange and production is also captured in the theorem of Trout Rader, which states that for any production economy satisfying the standard convexity assumptions on production technologies, one can construct an “equivalent exchange economy” (Kirman, 2005, p. 475). Quite honestly, the theory of production in general equilibrium theory is summarized by Kirman, when he states that “General equilibrium theory has remarkably little to say about production.” (Kirman, 2005, p. 474)

3.3.9 General Equilibrium Theory: A Theory of What?

The discussion above was mainly, although not entirely, one of general equilibrium theorists themselves about their theories, the in-sufficiencies of their theories and the normative role of those in the portrayal of markets. It makes sense for the following, and particularly from an ideology-critical perspective, to recapture what exactly the theory is about. And more importantly, about what it remains silent.

Following the discussion above, it is justified to characterize general equilibrium theory as a static, a-historic theory of the existence and properties of market equilibria with price-taking individuals. It is a-historic since it establishes results based on laws that are considered to hold space-time independently and fails to situate itself within society. The existence of markets, different property relations, technology and technological advance, the existence of a state or government or the institution of wage-labor are all taken as given and are not explained, if they are considered at all. Money and capital are not genuinely explained, money is

not even a necessity in the explanation of market mechanisms in the standard formulation of general equilibrium theory. It is static in the sense, that it does not provide any dynamic arguments about the formation of market-equilibria, nor the transition from one equilibrium to another. Prices are not explained, not in terms of their formation, there is no agency of price. Equilibria are not primarily the object of investigation, but a methodological necessity in addressing reality. Only when equilibria exist, anything relevant can be stated about economic reality, there is no theory of states outside of equilibria. This characterization follows, if not explicitly at least implicitly, the self-description of general equilibrium theorists themselves. As for instance in this quote by Frank Hahn, who asserts the failings to ideological deteriorations:

“It has been found that in general there are too few markets for the invisible hand to do its job, in particular its intertemporal job. One cannot in general exclude multiple equilibria, in the canonical version there is no room for fiat money, indeed exchange or interaction of any kind is not modelled, and so on and so on. Although I never believed it when I was young and held scholars in great respect, it does seem to be the case that ideology plays a large role in economics.” (Hahn, 2005, p. 27)

At this point, we can also reevaluate Hunt and Lautzenheiser’s characterization of Neoclassicism in all its versions: A-historicism, methodological individualism, full-employment adjustment either automatically or via the iron fist of the government, harmonization of conflicting interests and the marginal theory of distribution. The discussion so far makes clear that most of those aspects hold for general equilibrium theory as well. What, however, needs to be discussed is the role of the government in light of the welfare theorems and the theory of distribution according to marginal productivity. This is done in the following sections.

Although it has been demonstrated, that some general equilibrium theorists are quite skeptical and critical of their theories themselves, some external critiques are more explicit about the apologetic function of general equilibrium theory. Furthermore, they provide *explanations* for certain fallacies in general equilibrium theory. The following section is devoted to a discussion of those criticisms.

3.4. Exploring Immanent Contradictions

We have seen in the above that influential general equilibrium theorists have quite a skeptical interpretation of their theories and models, in particular with respect to its empirical relevance. This skepticism regarding empirical adequacy, and hence its scientific status according to the positivist conception of science (remember the interpretation of the Sonnenschein-Mandel-Debreu Theorems as ‘anything goes’), is paired with the acknowledgment that the most fundamental results – the Welfare Theorems – serve as the most fundamental intellectual justifications for capitalist societies. This is surprisingly in line with critics claiming that neoclassical economics serves the ideological portrayal of capitalism as an optimal constitution of society. However, there are more dimensions of ideological influx into neoclassical theory according to its critics, than general equilibrium theorists acknowledge. Besides a lacking dynamic counterpart for static general equilibrium theory, a missing theory of price- and equilibrium formation and the obvious empirical inadequacy, or

‘unrealisticness’, certain methodological and substantive aspects are considered ideological as well. For instance, symmetry of capital and labor (cf. Büttner, 2007; Shaikh, 2016) in the model architecture, the explanation of societal aggregates in terms of unintended outcomes of individual rational behavior (cf. Foley, 2004; Shaikh, 2016), both discussed already in the section on the historical origin of general equilibrium theory, or the impossibility to uphold the dichotomy of normative and positive economics (cf. Krätke, 1999; O’Boyle and McDonough, 2011). Furthermore, the portrayal of the economic subject, the homo oeconomicus, as universal (cf. Habermann, 2010). The neglect of production and the methodologically individualistic explanation of societal aggregates is considered by critics the cause for a fundamentally static theory (cf. Bukharin, 1927). From the perspective of ideology-critique, an evaluation of existing criticisms is necessary and possible. Revealing immanent contradictions is an important aspect of ideology-critique, but it must go beyond that. The question is always what are the causes for those immanent contradictions and whether they can be resolved. In the following, where I review important critique of neoclassical theory, I only situate them in the context of ideology-critique. I do not, however, aim to treat all those criticisms in detail or even try to resolve all the contradictions identified. This is a task that cannot be done here. Rather, I argue that among most of the existing criticisms, relatively little discussion is devoted to the equilibrium methodology of neoclassical economics.

3.4.1 Symmetry of Capital and Labor

Büttner (Büttner, 2007) and Shaikh (Shaikh, 2016, p. 118) argue, that the household (or consumption) optimization problem is structurally the same as the firm optimization problem, which is displayed in the conceptual symmetry of the concepts of the marginal rate of substitution (MRS) and indifference curves for consumers and the marginal rate of technical substitution (MRTS) and production isoquants for producers respectively. We have seen in the above that in general equilibrium theory consumers and producers coincide, since the profits of all firms are distributed entirely among the consumers according to an exogenously given allocation of profit shares. In this sense, even without reference to those concepts not strictly necessary in axiomatic general equilibrium theory⁵⁴, there is some sense of symmetry between consumers and producers⁵⁵. Both are confronted with a pre-existing world of commodities, of which some can be consumed and some used for production. And both optimize by choosing the best combination of commodities to either maximize profits or preferences. Of crucial importance for that symmetry is the black-box understanding of production in general equilibrium theory. It is precisely modeled as an act of exchange, happening instantly without any reference to time whatsoever. Most importantly, however, the remuneration of individuals depends symmetrically on their initial endowments. Some are endowed with production commodities, some with consumption commodities, but the remuneration for both is systematically the same. General equilib-

54 Note that formally neither indifference curves nor isoquants are necessary in axiomatic general equilibrium theory. The substance of those concepts is generalized by consumption and production sets and can under certain assumptions be translated into the aforementioned concepts.

55 Although, this symmetry is entangled with some notion of unity, since the firms are actually owned by the consumers in the model.

rium theory is a theory of general barter and production processes are thought to simply be another dimension of exchange. This abstraction from time and space⁵⁶, according to Krätke, is also the reason for the fundamental neglect of money and credit in the theory. Production processes or transportation take time and fundamentally differ from making a contract (Krätke, 1999, p. 9). Consequently, a systematic neglect of the production process forbids any discussion about exploitation or technological change. Both of them being dealt with extensively by earlier theorists, especially those in the labor theory tradition and most notably by Marx. Beyond Kirman's honest assessment of neoclassicals' silence about production in one of the earlier quotes, not much more can be found on this issue. A justification is not provided, still neoclassicals consider their theory general in the sense of being the culmination point of scientific progress. However, below I will discuss Bukharin's (Bukharin, 1927) view on how that neglect of the production process and explanation in terms of individual categories results in the impossibility of constructing a genuinely dynamic theory and extend that to general equilibrium theory.

3.4.2 Explanation in Terms of Rational Individuals with Scarce Resources

Methodological individualism and its ultimate break-through during the so-called marginalist revolution marks a shift in the history of political economy. One from primary explanation in terms of objective or societal categories such as labor, value or class to explanation in terms of subjective or individual categories: preferences (or former utility) and individual optimization thereof. As was argued, this shift is understood as one of scientific progress, since general equilibrium theory supposedly overcomes the contradictory labor theories of value and generalizes their results. Ricardo, Mill and Marx alike are considered early general equilibrium theorists, whose ideas were purged of logical inconsistencies and put in a scientific framework by general equilibrium theorists (Arrow and Hahn, 1971, p. 2f). Yet general equilibrium theory, due to its increasing subjectivity, ultimately ended up being a pure price theory (in contrast to a theory of value) without any argument whatsoever on how prices come into existence. There is no agency of price. Some critics argue that the subjective formulation of scientific theories in neoclassical economics is purely functional and has the instrumental task of portraying capitalism as optimal (cf. Shaikh, 2016, pp. 77, 110)⁵⁷. And basically all critics, as well as elaborate theorists, agree that rationality is not primarily an empirical concept. Among the discussed theorists so far, no one would actually argue that there is a correspondence between observed behavior and the rationality axioms in neoclassical economics. Yet as shown in chapter 2, the functional or apologetic aspect does not exhaust the ideology. Also one should bear in mind the discussion of Marx' ideology-critique of individualism. Ideologies are adequate (and also inadequate) to reality, they grasp true aspects of it. They render society around us intelligible, they rationalize it. In that sense, they are neither purely functional, nor is it of prime importance that they diverge empirically from reality because ultimately they provide guidance for action. Duncan Foley in his *Rationality and ideology in economics* (Foley, 2004)

⁵⁶ Remember the aforementioned discussion of the temporal and spatial interpretations of general equilibrium theory. Time and space are simply additional dimensions in a static model.

⁵⁷ I will not repeat the discussion on why I consider such an understanding of neoclassicism inadequate, this was done in the discussion of Hunt and Lautzenheiser's work.

understands the relation of the scientific concept of individual rationality and modern capitalist society, when he emphasizes the influence of capitalist society itself on the formation of the rational subject. (cf. Foley, 2004, p. 330). Furthermore, he points out the limitation of such rationalization due to the lack of a genuine dynamic counterpart within general equilibrium theory (Foley, 2004, p. 337). Most importantly, however, Foley relates the specific notion of calculating means-based rationality to capitalist relations as such. In that, economic rationality can be very well understood as an ideological expression. It provides practical guidance to act upon in capitalist society for each individual. It is a necessary coping strategy and hence adequate, but only under given conditions of capitalist production:

“The calculating, selfish behavior rational-actor theory puts in the center of its discourse is a product of the social relations of modern capitalist society [...]. The emergence of commodities and money as the medium through which the social division of labor sustains and develops itself imposes an inherently quantitative aspect on human activity. The imperative to calculate from a definite point of view, self-interest, is equally the product of these social relations. The logic of the capitalist social division of labor requires the assertion of self-interest in order to reach any outcome at all. Attempts to ignore the boundaries of self-interest in actual economic interactions are self-defeating and conflict creating.” (Foley, 2004, p. 339f)

Neoclassical rationality and the project of liberal rationalization of modern society provides an adequate self-perception for the individual in capitalist society, one where it sees itself in “conflict with others over scarce resources” (Foley, 2004, p. 330). Notably, Foley mentions the centrality of scarcity in the definition of neoclassical rationality⁵⁸. It constitutes a naturalized conflict, the conflict between limited resources and limitless needs, only possible to be resolved by the social harmony of the invisible hand.

Criticisms differ when it comes to rejecting rational choice theory as an adequate mode of explanation. Nevertheless, the intelligibility of such explanation is questioned even in the mainstream of economic methodology⁵⁹. At this point it is important to mention, that especially regarding the critique of methodological individualism critics frequently engage in a discussion of modern micro-founded macroeconomics⁶⁰, a branch of neoclassical economics which is criticized by general equilibrium theorists themselves. Hildenbrand for instance criticized that the neoclassical principle of utility maximization is an ad-hoc premise in order to assure certain properties to hold for the aggregate market demand (Hildenbrand, 1985, p. 41f).⁶¹ The

58 It is formally captured in general equilibrium theory by the notion of some limited resources, most notably labor hours and initial endowments, and locally nonsatiated preferences. This entails a conflict of limitless needs and a limited budget set.

59 “The explanatory individualism that economists typically assume maintains that the fundamental explanatory principles or laws (apart from the laws of the natural sciences) should concern the preferences, beliefs, and choices of individual human beings. [...] The explanatory individualism to which most economists subscribe concedes that social entities and facts have causal consequences, but it insists that those consequences are mediated by the beliefs, preferences, and choices of individuals. We are not sure whether this version of explanatory individualism is ultimately defensible.” (Hausman and McPherson, 2008, p. 234).

60 Although general equilibrium theory is considered in the domain of microeconomics, the divide between micro- and macroeconomics is confusing, especially with the self-conception of general equilibrium theory as *general*. It deals with the properties and existence of equilibria for all markets.

61 Hildenbrand, taking seriously the critique arising from the Sonnenschein-Mandel-Debreu Theorems, argues that if the law of demand cannot be reasonably claimed only with reference to individual utility maximization, since this is always introduced ad-hoc precisely for that task, the law can only arise in the aggregation process from individual to aggregate market demand. (Hil-

elaboration is still on the level of axiomatic general equilibrium theory and not so much on modern macroeconomic theory with its irrational claim of modeling in terms of a representative agent. Therefore, the focus remains on those criticisms specifically targeted at general equilibrium theory⁶².

Bukharin (Bukharin, 1927), in his discussion of (austrian) marginalism in the early twentieth century tries to reveal the immanent contradictions and inconsistencies within underlying methodological individualism. Although Foley mentions such contradictions as well and just as Bukharin explains them by lacking dynamics in neoclassical theory, Bukharin goes further. He argues that the lack of dynamics is, at least partially, due to the commitment to methodological individualism. His critique of the Austrian School of economics was related to an understanding of the changing structure of capital accumulation and production processes⁶³. Since contemporary economic science in the form of general equilibrium theory differs from the economics of the Austrian School, only fragments of Bukharin's critique can be incorporated into a critique of neoclassicism. However, critique of methodological individualism is such an aspect, and his critique surpasses that of most other critics. Bukharin firstly notes, that any social science necessarily – whether its theorists are aware of that or not – have an underlying, what he calls, sociology, a theory about the constitution of the social⁶⁴. According to him, unlike Marx with Historical Materialism, the Austrians lack such an explicit base and it is up to the critic to reconstruct it from their theories (Bukharin, 1927, p. 35f). Austrian marginalism is methodologically defined, and all of those ingredients apply to general equilibrium theory as well, by extreme individualism, an unhistorical approach and the centrality of exchange (or consumption) (Bukharin, 1927, p. 36). Böhm-Bawerk's assertion that economic subjects are mere atoms of society, isolated from and unrelated to each other (Bukharin, 1927, p. 40), holds true for the rational individual of general equilibrium theory. Preferences are assumed to be given independently from each other and the behavior of those individuals has no reference to anything but given commodities. Society is then considered the mere arithmetic aggregate of isolated individuals, in early marginalism and general equilibrium theory alike. This is however, as Bukharin argues, a wrong and inconsistent conception of society because the meaningful existence of the individual always presupposes a social context:

denbrand, 1985, p. 44)

62 For an immanent critique of micro-founded macroeconomics and a demonstration of the impossibility of rationally constructing a representative agent, see Kirman (Kirman, 1992). He extends the discussion from the results of the Sonnenschein-Mantel-Debreu Theorem to micro-founded macroeconomics. Shaikh pledges for a macro-foundation of microeconomics. His argument is based upon a version of emergent properties, he argues that certain macro-phenomena are consistent with different micro-foundations and hence the micro-foundation is indetermined, whereas the macro-process is stable (like the Gas Law in physics) (Shaikh, 2016, p. 75ff). This is similar to Hildenbrand's critique of the neoclassical microfoundation.

63 Bukharin's critique of Political Economy of the early 20th century incorporated a discussion on the formation of a specifically new branch in the capitalist class: the rentier. The rentier as the owner of financial and banking capital was more detached from the production process than owners of manufacturing capital. Accumulation of capital manifested increasingly in financial capital and the production process went through changes accordingly. Bukharin considered this branch of capitalists degenerative and the corresponding scientific theory, Austrian School, as well (Bukharin, 1927, p. 15ff). A critical discussion of Bukharin's work cannot be outlayed here. Of particular interest for the thesis is his introduction and chapter one, where he deals with the methodological foundation of the Austrians (Bukharin, 1927, pp. 35–58). However, a serious critique of his work needs to be aware of the problematic dichotomization of two types of capital he considers and how they are connotated, where banking or financial capital is considered passive, degenerative or even parasitic.

64 In terms of more contemporary philosophy of science, every theory has an implicit or explicit ontological commitment. We have discussed that with Lawson already. Bukharin's methodological discussion has striking similarities with Bhaskar's formulation of the Transformational Model of Social Activity (Bhaskar, 1998a). This is not a coincidence, since Bhaskar distilled this model from Marx theory of society, whereas Bukharin reformulated Marx' theory in his critique of marginalism.

“[T]he economic activity of each specific individual presupposes a definite social environment in which the social relation of the individual [...] finds its expression. [...] The economic subject, in its actions, adapts itself to the given condition of the social phenomena; the latter impose barriers upon his individual motives [...] the individual estimates of price always start with prices that have already been fixed; the desire to invest capital in a bank depends on the interest rate at the time; the investment of capital in this industry or that is determined by the profit yielded by the industry; the estimate of the value of a plot of land depends on its rent and on the rate of interest, etc. No doubt, individual motives have their "opposite effects"; but it must be emphasised that these motives from the start are permeated with a social content, and therefore no "social laws" can be derived from the motives of the isolated subject.” (Bukharin, 1927, p. 42f)

The individual atom can only act within a given social context, its formulation without such a structure is meaningless⁶⁵. Consider preferences of individual consumers in general equilibrium theory. Those are considered complete, if the consumer can provide a ranking among all possible consumption bundles from an exogenously, or axiomatically given, consumption space. Clearly, if there are commodities to rank and choose from, they must be produced in the first place. They must be produced by some producers operating in the past and hence are social in character. Remember the above discussion about the necessity of advanced division of labor that allows for specialization and the production of different commodities for others. The budget set, which limits and defines the operational scope of the neoclassical individual, carries implicitly lots of social content. It can only be formulated with reference to prices. Obviously price, which is a social category, is conceptually prior to the formulation of a budget set (cf. Büttner, 2007). The price is necessary for formulating the fundamental optimization problem of individuals. General equilibrium theory seeks to explain the outcomes of collective subjective behavior of those individuals – equilibrium prices – in terms of prices. The only possibility to resolve this temporal circularity is precisely to make them coincide in time. The static, instantaneous description of an equilibrium as the solution of a simultaneous system of equations is the solution to this circularity. With no temporal dimension, no history and no dynamics. This contradiction is very severe and not resolvable. Although the conclusion is the same as general equilibrium theorists have drawn themselves, this criticism goes beyond what they consider fallacious with their theories and what other critics identify as the main issue with neoclassical economics. Neoclassicals acknowledge, but cannot explain, the failings of their theories in terms of providing an adequate dynamic counterpart. Critics as Lawson, identify the abstract deductive method as the fundamental issue. However, critique like this from Bukharin and Büttner adds another important dimension. It shows the impossibility of constructing an adequate dynamic theory of society purely in terms of the interplay of rational individuals. Hence, the fallacy of methodological individualism all along. What it means to nevertheless explain social phenomena entirely individualistically will be discussed further in chapter 4.

65 “The absolutely isolated individual has always been an illusion. The most esteemed personal qualities, such as independence, will to freedom, sympathy, and the sense of justice, are social as well as individual virtues. The fully developed individual is the consummation of a fully developed society. The emancipation of the individual is not an emancipation from society, but the deliverance of society from atomization [...]” (Horkheimer, 2004, p. 92)

3.4.3 Particularity of the *Homo Oeconomicus*

We have seen that neoclassical rationality corresponds to capitalist society and provides a self-perception for the individual within that society. Consider at this point, that although the self-perception for the individual is adequate, it is at the same time inadequate. Obviously the abstract figure of the *homo oeconomicus* reveals itself to be a very concrete subject. Feminist critique frequently points out, that the allegedly universal character of the rational subject is indeed very particular. It represents a bourgeois, white male subject. It is a subject that need not be cared of, is purely rational, not emotional and responsible only for its own needs and inhabits the public sphere of markets and the state (cf. Habermann, 2010, p. 153f; Nelson, 1995, p. 135f). This does not mean that white men are in any sense more rational or less emotional than the rest of humanity. The theoretical figure of the *homo oeconomicus* is an equally bad description of the white man as it is of any other individual gendered or racialized differently (Nelson, 1995, p. 136). It is, nevertheless, the idealization of the experienced self-perception of white bourgeois man of early modernity, as Haberman argues (Habermann, 2010, p. 153f). For the time Adam Smith wrote for instance, women were not even allowed to sign contracts freely and hence were even excluded from the sphere of double-freedom (Kuiper, 2010, p. 179). Yet the contract is the general mode of interaction on the market and operational mode of neoclassical theory. Haberman argues further, that the liberal bourgeois subject, the white, property owning men of early modernity and the subject of neoclassical theory, co-developed discursively (Habermann, 2010, p. 155f). This subject of modernity in its constitution always requires an ‘other’, to demarcate itself from. The ‘other’ is then typically assigned all the traits banned from the self-definition of the bourgeois subject: the body, dependency, sexuality, emotion, and so forth (Habermann, 2010, p. 155f). The construction of the concept of a dichotomy of gender (Habermann, 2010, p. 157f) and one of ‘white’ and ‘black’ races (Habermann, 2010, p. 159f) coincides historically with the rise of the *homo oeconomicus* as the theoretical figure, that represents the bourgeois, white, male subject (Federici, 2014). The archetype of neoclassical rational man is Robinson Crusoe, a slave-owning white man, that stranded on an island supposedly manages to survive alone on that island. One can react to this biased standpoint of the *homo oeconomicus* by either claiming its validity for all individuals, hence claiming actual universality of that particular standpoint, or enriching the concept of rationality to include all the traits assigned to the ‘othered’. Either of one is mostly done by feminist economists, as Haberman criticizes (Habermann, 2010, p. 154f). Still, both approaches ultimately remain uncritical of the neoclassical methodology. Instead, they aim to make it more inclusive in terms of identities. Rather than taking identity as the starting point for analysis and critique, identity needs to be understood as the result of a historic process. This means, that it cannot suffice to reject the *homo oeconomicus* but remain truthful to the theories whose subject *he* represents (Habermann, 2010, p. 155). Although I do not develop a genuine feminist or post-colonial critique of neoclassical economics, it seems to me that a genuine critique of methodology, just as Habermann argues, would be an important aspect of such critique as well. However, even though I understand the particularity of the neoclassical subject, I remain largely silent about the racial and gender implications of neoclassical explanation in chapter 4.

3.4.4 A-Historic Explanation and the Neglect of Production

Regarding the a-historic approach of neoclassical economics, I have dedicated some discussion to it in the sketch of its historical origin. The same criticisms hold for general equilibrium theory, maybe even more so. Instead of investigating the specificity of capitalist relations, it rather deals with a-historical, universal theories of rational human interaction. It thereby not only veils the conditions of existence of capitalist relations: the monopolization of the means of production by one class, the necessity for one class of selling their labor on the market for reproduction or sufficiently advanced division of labor. It also extrapolates a specific mode of social organization, markets, to any society. Capital, profits, wages and market prices in general accordingly always existed, irrespective of the specific societal formation. According to Bukharin, however,

“an investigation of capitalism must take into account its fundamental traits, those distinguishing the capitalist "production organism" from any other; for the study of capitalism is the study of that which distinguishes capitalism from any other social structure.” (Bukharin, 1927, p. 49)

And what distinguishes it from other societal formations are among others the institution of wage labor, the dynamic process of capital accumulation and technological advance⁶⁶. All of which, are either assumed away or introduced externally to the model in general equilibrium theory. Marx already devoted a chapter in *Capital* to the description of the actual historic process of what he calls primitive accumulation. This was the violent process of enclosures and creation of private property, that on a mass scale created a proletariat dependent upon wage labor and hence the condition for wage labor (MEW 23, chapter 23). Federici extends this insights in that she shows how this process was also crucial in forming the proletariat – and in particular the female and colonial – body. It was necessary to conquer the proletariat body just as land during the enclosures and to break the resistance of the massively impoverished labor class to sell their body and labor force on the market (Federici, 2014). What is considered in general equilibrium theory as a matter of course – that people are in fact willing to sell their labor and their bodies on the market – is shown to be the result of a violent process of subordination and conquest.

Related to the a-historicity is the systematic neglect of production and the focus on exchange. We have seen already, that general equilibrium theorists admit, that they have astonishingly little to say about production. Interestingly, neither of them relates this to the also admitted lack of dynamism. Materialist critics on the other hand, such as Bukharin (Bukharin, 1927) for instance, emphasize that those are heavily related, as the focus on exchange, or consumption, involves no active role in the creation of commodities. It deals with

⁶⁶ Neoclassicals are not delusional about the fact that there is something fundamentally different and specific in the way modern society is organized. However, they do not have the theoretical instruments to understand this specificity. Instead they impose the structure of their models, which is a product of modern society itself, upon earlier societies and treat all of human history as being organized in terms of exchange economies. Most famously such work is done by Acemoglu in his influential graduate text book *Introduction to Modern Economic Growth*. In this book that aims to explain nothing less than the dynamics and causes for economic growth since the industrial revolution, especially in the past 200 years (Acemoglu, 2009, p. 13f) he mentions the words capitalism twice (Acemoglu, 2009, p. 122), slavery twice (Acemoglu, 2009, pp. 127, 867) and colonialism three times (Acemoglu, 2009, pp. 127, 130, 871). There is no single mention of class struggle. However there is of course a rational choice model of political revolutions and democratization, which is in the end considered to be the solution of a collective action problem solved by constrained optimization (Acemoglu, 2009, p. 855f).

a passive relation between the consumer and a given state of the world. There is absolutely no space for an evolving social reality in this perspective. The dynamic forces lie within the production process, the actual transformation of matter into commodity, and the systematic neglect of it results in pure statics (Bukharin, 1927, p. 55).

“[...] it is quite clear that this point of view [the point of view of exchange] precludes in advance any possibility of grasping social phenomena or their evolution. The motive force in the latter is the increase in the production forces, in the productivity of social labour, the extension of the productive functions of society. Without consumption there is no production; no one doubts this; needs are always the motive for any economic activity. On the other hand, production also has a very decisive influence on consumption.” (Bukharin, 1927, p. 55)

Those influences consist in, first, that what can be consumed needs to be materially produced. Secondly, production determines the mode of consumption and, third, production creates new needs. And specifically for capitalism, production determines to some extent the distribution of wages and profits (Bukharin, 1927, p. 55). In the formulation of preference orderings, all of this is neglected. Rankings are formed over a-priori *given* commodities. There is no difference in the consumption of types of goods, be they services where production and consumption temporally must coincide or commodities like a smartphone which is in relatively long use and which production involves a chain of production steps. Preferences are formed once, over the only state of the world, and production, i.e. the expansion of the commodity space, must not alter the established ranking. The neoclassical notion of equilibrium is a description of an unchanging state, as was argued exhaustively in this thesis, but it is precisely static because it eliminates the interrelation between consumption and production. This is also an insight that the Critical Theory of the Frankfurt School asserted for bourgeois science in general, it absolutizes the concept of exchange, which in itself is an instantaneous act, it falls out of time⁶⁷. The criticism from this section will be deepened in chapter 4 with respect to equilibrium methodology. At this point, we have identified the static character and its causes – methodological individualism and the neglect of production – and how that misrepresents reality, but neoclassical theory nevertheless produces scientific explanations in those terms. And it is of critical interest, what it means to explain something with inadequate tools, or in other words, to force a certain form upon reality.

3.4.5 Positive vs. Normative Economics

As already shown, neoclassicals and critics alike, argue that the Welfare Theorems are crucial in the intellectual justification of existing capitalist relations. However, neoclassicals believe, that those aspects of their

67 “Ahistorizität des Bewußtseins ist als Bote eines statischen Zustands der Realität mit ratio [hier: naturbeherrschende Vernunft] notwendig verknüpft, mit der Fortschrittlichkeit des bürgerlichen Prinzips und seiner eigenen Dynamik. Es ist das des universalen Tauschs, das Gleich und Gleich von Rechnungen, die aufgehen, bei denen eigentlich nichts zurückbleibt; alles Historische wäre aber ein Rest. Tausch ist, als Revokation eines Aktes durch einen anderen, dem Sinn seines Vollzugs nach selber zeitlos, mag er auch in der Zeit stattfinden: so wie ratio in den Operationen der Mathematik ihrer reinen Form nach Zeit ausscheidet. Aus der industriellen Produktion verschwindet denn auch die konkrete Zeit.” (Adorno, 1972b, p. 77)

theory can be reasonably detached from a strictly positive analysis. The normative and the positive are supposed to be two different aspects, even unrelated. This view cannot be maintained if the historical trajectory of neoclassical economics all the way up to its culmination point of general equilibrium theory is reconsidered. I have shown, that critics argue how methodological ingredients historically changed in order to maintain the social harmony perspective and avoid inconsistencies and unintended outcomes (for instance the development from cardinal utility to ordinal utility to preference rankings). This social harmony perspective crucially depends on the methodological ingredient of individualism (cf. Krätke, 1999; Shaikh, 2016, pp. 75–86). Although critics indicate this relation between the positive and normative aspect of neoclassicism, there is no critique in all generality required⁶⁸. This would mean that, additionally to the correct substantive criticism, the methodology of neoclassical economics needs to be critically examined. I think that Mas-Colell, Whinston and Greene’s elaboration already provokes such critique. Just consider the above discussed structure of their book. First, the normative analysis of optimality of competitive equilibria is discussed, and afterwards the existence and uniqueness conditions of such equilibria. Hence, talking about normative properties of equilibrium states is meaningless without the knowledge of their existence. The task of finding existence and uniqueness properties, however, is normatively laden as its prime purpose is to render the Welfare Theorems meaningful. Samuels calls this self-proclaimed positivism conditional positivism, because it depends upon given normative desires:

“The positive analysis of means derives its specific recommendatory force from the normative status of the end to which the means are instrumental. This is a very different form of positivism than a simply descriptive what-is-the-case statement. The latter may be called purely positive and the former conditionally positive. The difference involves a distinctively normative element.” (Samuels, 1981, p. 131)

The dichotomy of positive and normative economics does not hold, because the positive aspect, the description of equilibria and their properties, is already embedded in the normative position of equilibria as desirable states of the world. An argument, I develop in detail in chapter 4, where I show how the equilibrium methodology of neoclassical economics tends to be affirmative of the status quo. In the literature, the discussion is mainly about the implicit normativity of the Pareto principle. Büttner, for instance, argues that it is an empty term, since it is consistent with potentially infinitely many states of the world (Büttner, 2007). This is a wrong interpretation of the principle in my opinion, since it obviously excludes certain allocations, those that are wasteful. O’Boyle and McDonough (O’Boyle and McDonough, 2011) on the other hand, try to reveal implicit normative judgments of it. They criticize its interpretation as being purely subjective in the sense of not depending on interpersonal comparison. Pareto-efficiency is considered innocuous by neoclassi-

⁶⁸ Some methodologists trying to defend the dichotomy in doing so reveal an impressive misunderstanding of what a fact is. Colander and Su for instance question whether it would not be reasonable “that economists, even when sharing ends, would still have different views regarding which means would be most effective for achieving them due to their different readings of the facts? And isn’t it possible that economists do genuinely agree about some ends, yet still disagree about means due to different understandings of the relevant facts, such as causal mechanisms?” (Su and Colander, 2013, p. 7). They confuse the truth of a fact with its correct perception, as if its validity depends upon the theorists interpretation.

cals, since it only characterizes which allocations do not provide individual improvements without deterioration of others. Hence, perfect inequality can be Pareto-efficient. Still, this is neither empty, nor innocuous, according to O’Boyle and McDonough, since it assumes that every individuals’ right to maximize its material wealth is equally important (O’Boyle and McDonough, 2011, p. 15). It is never established why the preferences of all individuals should be ranked equally. The Pareto principle with this respect, however, is in the tradition of liberal individualism, where every individual is considered to be equal – at least regarding her needs and desires, irrespective of the actual substance of her desires. Even if the preferences include harm of others. The discussion of redistribution is forbidden by the Pareto principle in case of wasteful allocations. Every normative principle, or more generally, every moral philosophy contains some, at least implicit, notion of equality. The correct question to ask is: ‘The equality of what?’, as Sen has pointed out (Sen, 1979)⁶⁹. In the Pareto principle it is equality of right to pursue desire, or preference. Nevertheless, there is no genuinely ideology-critical discussion of the Pareto-principle, and unfortunately I can also not pursue this discussion further at this point.

Another dimension of normativity in neoclassicism is that it establishes an ideal-type, either of markets or rational individuals, which might not be empirically accurate, but serve as a guide to optimal markets and optimal behavior (cf. Büttner, 2007; Krätke, 1999; Shaikh, 2016). According to this view, the perfectly competitive market only serves as a guide to actual markets and reality is always an imperfect realization of the perfect market (Gintis, 2005, p. 176). The closer reality can be made to resemble the ideal-type the better. Yet consider the necessity of the iron fist of the government, or the central planning authority, to do so. If we consider all the possible causes for the failing of the welfare theorems, one needs either an extremely authoritarian entity or profound and subtle mechanisms of social control to enforce the supposed optimality of the market. Empirical and historical work, that identifies the actual measures and actions taken actively by the government to do so or deepen the understanding of mechanisms of subjectification in contemporary capitalism necessarily need to complement such a critique. It is also there, where one needs to find the reasons for the establishment of neoclassical sub-disciplines, such as public choice theory, behavioral economics or competition policy. If externalities are not considered to be something externally given (cf. Hahnel, 2007; Hunt and Lautzenheiser, 2011, p. 389ff), but, at least partially, caused by the capitalist production process itself, the bureaucratic apparatus forcing the economic subjects in the ideal-type conditions must be immense.

The same holds for rationality, the rational economic subject is clearly empirically not existent. Nevertheless, trying to adopt its behavior in reality, is expected to make one better off there. The self-optimizing individual under neoliberal capitalism, might very well be understood as permanently attempting to implement neoclassical rationality. To pursue this question further in a serious fashion, however, requires also empirical and historical work. Of particular interest would be, what role increasing data collection, surveillance possibilities and personalized advertisement play in the constitution of the contemporary bourgeois subject. My

69 Sen (co-)developed the capabilities approach, a moral theory that pledges for the equality of capabilities and crucially depends, not only on interpersonal comparison, but also on democratic processes (cf. Sen, 2009). His work is interesting in the light of this thesis, since he not only is a neoclassical economist, but also tries to complement economic theory by an adequate normative theory. It is, nevertheless, a project that continues the dichotomy of positivity and normativity.

suspicion is, that behavioral economics and the theory of nudging can play a pivotal role in forming such a subject. It is the problem of this thesis, as stated in the very beginning, that it primarily deals with theory, and not with the actual study of contemporary capitalist relations and necessarily needs to remain incomplete.

However, with respect to methodology alone, more can be said about the implicit normativity of the supposedly positive mode of explanation of neoclassical economics. The focus on exchange, and the neglect of production, and methodological individualism in terms of purely instrumental rationality and the fundamentally static character of the equilibrium concept has severe consequences. The following chapter is devoted to the discussion of what it means to explain a phenomenon in terms of neoclassical equilibrium. This is an elaboration that can be done reasonably with respect to theory alone. For that I draw upon certain aspects of those criticisms depicted in this chapter and develop them further with respect to method.

4. Neoclassical Explanation: The Methodological Necessity of Equilibrium and its Consequences

In the previous chapter I discussed the historical development of neoclassical economics and the role general equilibrium had in this process. Neoclassical economics is understood historically as the successor of theories of social harmony. General equilibrium theory is the logically consistent version of those theories and the fundamental welfare theorems are considered formalized reformulations of Adam Smith's invisible hand argument. I have indicated with reference to some critics of neoclassical economics that the price of logical consistency of general equilibrium theory was to formulate a fundamentally static theory that deals with dynamics only exogenously (a fact very well accepted by general equilibrium theorists), as a disturbance that is thought of as an exception rather than an innate element of reality. This has as a consequence not only that reality is treated as unchangeable and given, but also that neoclassical explanations tend to be apologetic of that reality. The latter consequence is linked with the specific notion of equilibrium. In this chapter I try to develop this argument in detail. The focus is more specific on methodology as such, than on substantive claims of any particular neoclassical model or theory.

First of all, I will differentiate the methodological critique I pursue in this chapter from more orthodox debates in the literature on the philosophy of economics. Those tend to focus on the question of whether or not neoclassical models are in any sense explanatory (cf. Alexandrova and Northcott, 2013; Reiss, 2013, 2012; Sugden, 2000). To sum up polemically beforehand, those debates consist of either rationalizing neoclassical explanation or attesting them a fundamental non-explanatory character. Contrary to both approaches, I take the explanatory status of neoclassical explanation as given and examine its consequences. In taking it seriously, I do not try to rationalize it, i.e. render it intelligible. My aim is to reveal the normative and technocratic implications of such explanation.

Subsequently, I emphasize the role of the concept of equilibrium in neoclassical explanation and its fundamentally static character (cf. Dixon, 2007). It is stated, that explanation requires equilibrium, without it there is no explanation. Equilibrium in modern neoclassical economics is a methodological necessity. Irrespective of uniqueness or multiplicity of equilibria, statements about them are always static existence statements with no causal claim about how an equilibrium can arise. For that I refer to Mirowski's critique, a historian of economic thought, who argues that neoclassical methodology was a direct translation of Newtonian Physics, the prevalent theory in the time of the break-through of neoclassicism, into the social sciences (cf. Mirowski, 1989). Equilibrium methodology is there characterized as a-causal and deterministic. Whereas determinism means nothing but certain invariants logically pinning down the solution of the system, hence the equilibrium.

Then, I argue that equilibrium always entails the imposition of a market structure. Explaining a phenomenon then means to assume a market form upon it. This universal imposition of the market together with the abstractness of the commodity space makes it possible, and necessary, to explain any phenomenon as a market outcome. This economic imperialism (cf. Lazear, 2000), seen as a strength of the method, allows to model any situation, from political revolutions (cf. Acemoglu and Robinson, 2001) to addictive behavior (cf. Becker and Murphy, 1988). The method is considered so universal that it is supposedly eclectic about the scope of applications it fits.

Following this insight, I argue that the methodological universalism is not innocuous. With reference to Denis (Denis, 2006) and Adorno (Adorno, 1972b) I show that the static character of equilibrium has an apologetic tendency on its most abstract level. Whereas Denis critiques the neoclassical concept directly, Adorno deals with positivist science in general. Where both differ in their criticism is at the level of abstractness they engage. Whereas Denis argues, that neoclassical equilibrium captures a valid moment of reality, it needs to be complemented by a genuinely dynamic counterpart. Adorno on the other hand rejects this view. According to him, it is an a-priori false dichotomy to treat the static and the dynamic as separate moments. However, it is only indicated in Adorno's text, that the static character is even more fundamental and that the underlying formal axiomatic logic with its principle of bivalence itself might be its cause. I do not pursue this discussion further in this chapter, but it seems necessary to show that the critique of neoclassical economics might demand a confrontation with axiomatic logic itself and not only with neoclassical theory concretely.

However, from the conclusion that the equilibrium methodology portrays its phenomenon of interest as permanent and unchangeable, I proceed to discuss the role of the rational individual. In this section, I also refer not only to concrete economic methodologists (cf. Cowen, 2004; Hausman and McPherson, 2008) but also to authors from Critical Theory of the Frankfurt School, in particular Horkheimer (Horkheimer, 2004). The reason for that is that I consider Horkheimer's critique of modern subjective, instrumental reason, which is ideology-critique in the sense characterized in this thesis, to apply partly to the rationality concept in neoclassical economics itself. Although such mediation is everything but straightforward and I unavoidably have to remain indicative to some extent. However, I argue in that section that neoclassical means-oriented

rationality together with the unchangeable status of the reality that the neoclassical agent faces consequently means that everything the agent can do is to optimally adjust to the status quo. I also develop the technocratic consequences in that section.

In the end of the chapter, I introduce an analytical duality within neoclassical explanation and discuss the abstract findings concretely with representative models for both of the explanatory types I introduce. My argument is that there is a quite important difference among neoclassical theorists. They either aim to rationalize actually observed phenomena, this I call Vulgar neoclassicism, or they deal with the intelligibility and logical plausibility of hypothetical states of the world. I call that pole of explanation Platonic neoclassicism. I close this chapter with separate discussions of those two explanatory types. In the end, both poles constitute a unity, and the distinction is purely analytic. Neoclassical explanation in general, I conclude in the end, even in its most critical versions, is methodologically very much tied to the status quo and does not allow to systematically think beyond it. It is, hence, not a universal theory as it imagines itself to be and its critical potential is limited.

4.1 The Orthodox Debate: The Explanation Paradox

It is necessary to differentiate the following discussion of method from the orthodox discussion among economic methodologists. Those frequently discuss the intelligibility of neoclassical models and try to answer questions such as: How do economic models provide, although empirically not adequate to the subject they depict, a reasonable explanation (cf. Alexandrova and Northcott, 2013; Hausman, 2008; Reiss, 2012; Sugden, 2000)? This discussion takes up an issue we have outlayed in the previous chapter. Hahn considered economic models as thought experiments with no substantial connection to the real world (see chapter 3.3.2). Yet such a position obviously cannot be maintained unquestioned since it disqualifies the dominance of neoclassical models over any other economic theory, which is not only unacceptable for the scientific self-conception of neoclassicals but also does not capture the real dominance of neoclassicism in the academic mainstream. In the end, it is self-refuting. Reiss, in a recent publication, defines regarding that problem an ‘explanation paradox’ (Reiss, 2012). He argues from the wide acceptance of the prominent phrase that ‘all models are false’ among neoclassical economists that neoclassicism inhabits a paradox. On the one hand, economic models are false, on the other they are nevertheless explanatory. Still, only true accounts can explain something (Reiss, 2012, p. 49). Those three positions are not easily reconcilable. However, Reiss’ second statement actually constituting the paradox, that models are still explanatory, is not established at all in the literature and interestingly Reiss himself claims that with nothing more than a feeling. Although there is no formal account of the explanatory role of economic models, they still *feel* explanatory (Reiss, 2012, p. 48). Alexandrova and Northcott wrote an article as an immediate response to Reiss’ (Alexandrova and Northcott, 2013), where they argue that economic models do not explain at all and therefore there simply is no such paradox. The role of economic models is, according to them, not explanatory in any sense:

“according to all relevant philosophical theory, economic models do not count as explanatory. We are therefore licensed, indeed obliged, to reject intuitions to the contrary.” (Alexandrova and Northcott, 2013, p. 263)

This is a direct refutation of Reiss’ justification of economic models being explanatory based on a feeling. Neoclassicism follows, according to Alexandrova and Northcott, a casual empiricism according to which explanation is claimed only by vague analogy between model and phenomenon:

“For example, the famous Prisoners’ Dilemma game is often invoked in cases of a price war between, say, two gasoline stations located opposite each other. In cases like this, appeal to vague similarities between the model and the phenomenon is often the beginning and end of the ‘explanation’.” (Alexandrova and Northcott, 2013, p. 264)

Sugden, an economist and prominent methodologist, argues similarly and rejects a strict explanatory role in that he says that economic models are nothing more but credible worlds. They describe a hypothetical world, which might be investigated regarding its own intelligibility. According to that view, a truth claim regarding economic models cannot be formulated. Models are then nothing but credible stories about how the world could be. (Sugden, 2000). In that sense, Sugden provides an answer to the question that is merely its reformulation. How do economic models explain, if they have no correspondence to the real world was the initial problem. Sugden’s answer is, that they explain hypothetical worlds. This simply shifts the question to what does any of his credible worlds has to do with the actual world. This apparent disagreement on the explanatory role of economic models in the literature is summarized in Reiss’ following quote:

“The paradox of economic modelling is genuine in this sense. I think that previous attempts to resolve it have failed, and I do not see many likely avenues for future attempts. Perhaps, thinking about how models explain in ways different from the usual causal and unificationist paradigms is a way forward. But before such a new way of thinking about explanation is forthcoming and shown to fit contemporary economic modelling, the rational response to the paradox is to remain baffled.” (Reiss, 2012, p. 59)

As argued already, I pursue a different task than it is done in that particular literature. Although I find it quite interesting, how neoclassicism is tried being rationalized, it suffices for this thesis to note, that so far it failed to do so. This raises the interesting question of how a particular economic theory can maintain its dominance although itself cannot provide rational arguments of its superiority to other economic schools. What I try to argue in the following instead, is that the explanatory mode of neoclassical economics, the explanation by equilibrium, is deeply tied to the notion of social harmony and the contemporary relations of society. It is, with all its errors and deficiencies, in some sense adequate to society and in some sense sys-

tematically false. In other words, I do not ask, in what sense economic models are explanatory, or if they are explanatory at all. Rather, I consider the way neoclassicals *claim* to explain phenomena, whether they actually do so or not, and consider the implications of such explanation. That means, in particular, to investigate what the methodological necessity of equilibrium entails. It is of less interest for this thesis to find out, how a model actually corresponds to reality, because it never does. I agree that all models are false in this sense, but one has to draw the right conclusions from it. If every model misrepresents reality, but economists' and technocrats' understanding of reality depends upon those models, what does this imply for politics? What purpose has a theory that refutes the quest for truth? In neoclassical theory, reality is unchangeable, this will be developed in detail in the following, but neoclassical methodology entails coercion to force a specific form upon reality. That correspondence between model and reality can be established not only by better specification of the model, but by adjusting reality itself, is an option that is not discussed at all in the orthodox literature. Those are the remnants of a positivist self-understanding of scientific theory that imagines itself external to its object. This is one dimension of critique that I develop in this chapter.

4.2. Explanation and Equilibrium: Causal Claims or Pinning Down the System

We have seen, that general equilibrium theory explains market outcomes as equilibria. Prices and quantities are determined as the solution to a set of equations. The equations consist of individual optimization problems. Note, that a solution is a solution only insofar as it solves the individual optimization problem for each individual. Solving this problem requires consistent behavior and consistent behavior on the other hand requires the solution to the problem, i.e. equilibrium prices. That means that outside of equilibrium, there is fundamentally nothing to say, as general equilibrium theorists, such as Kirman for instance, acknowledge (see chapter 3.3). If neoclassical economics explains a phenomenon, it necessarily presupposes the existence of an equilibrium bringing about said phenomenon. Or in other words, disequilibrium analysis is impossible. Whatever is considered being such disequilibrium analysis, in fact accepts an error, some irrationality, as Dixon points out:

“The problem of disequilibrium analysis is that it is not an equilibrium, so that by definition the desired behaviour of agents is not consistent and in some sense their actions are not the best they could take. In essence, explanation of disequilibrium involves the explanation of a mistake.” (Dixon, 2007, p. 19)

Note, however, that formalized axiomatic rationality – optimization of preference satisfaction – does not allow for mistakes⁷⁰. The individually consistent behavior, the microstructure of neoclassical explanation, is

⁷⁰ The issue with disequilibrium analysis is, of course, known by equilibrium theorists and they have made efforts to resolve it. Dixon discusses some of such efforts and shows that, instead of genuine disequilibrium analysis, they introduce new types of equilibria (Dixon, 2007, p. 31). That disequilibrium analysis proceeds by introducing types of equilibria is somehow paradoxical. A paradox that cannot be resolved, because equilibrium is methodologically necessary.

reconciled on the macrostructure by the concept of equilibrium, Dixon argues. His characterization of explanation through equilibrium usefully breaks down the principle of neoclassical explanation:

“Very generally, economic explanation consists of two levels. At the first level, the *microstructure*, the economist posits the behaviour of the elements of the model. In most microeconomics, the basic elements of the model consist of agents (e.g. firms and households), whose behaviour is explained and understood as some form of constrained optimization. The agent maximizes some objective function (utility, profit) subject to some constraint (budget, technology). This constrained maximization is in effect the model of individual economic rationality. [...] At the second level, the *macrostructure*, the individual elements of the model are put together. (The method of equilibrium consists precisely in putting together the elements in a consistent manner in solving the model.)” (Dixon, 2007, p. 2)

Or more incisively:

“The crux of the explanation is: ‘everyone is doing as well as they can (microstructure): when everyone is doing as well as they can, X happens (equilibrium or macrostructure).’ This is seen as explaining phenomenon X.” (Dixon, 2007, p. 3)

Note, how the equilibrium, the macrostructure, is not intended by any agent individually. Reconciling different individual optimization problems results in an aggregate outcome that is not necessarily intended by any of the individual agents. An equilibrium is always an unintended outcome of intended action⁷¹. However, Dixon’s abstract characterization of neoclassical explanation by equilibrium lacks some concreteness and misses an important aspect. This aspect is that the discussed mode of explanation is both, understood as well as employed, in a double-sense. There is a difference in approaching an actual phenomenon and building a model that renders this phenomenon the equilibrium outcome of some optimization problem and building a model of a hypothetical world. I will introduce an analytical duality in the very last section of this chapter that captures this difference and discuss both poles of the duality separately. For now, it suffices to remain with Dixon’s abstract characterization, because it captures the abstract analytical structure of an explanation.

Such explanation, although it seems to be deterministic – because the entire system is pinned down to a state of rest – actually does not carry any causal claim. It does not explain the phenomenon in terms of any forces, since forces – interpreted in any reasonable way – drive the system towards a certain equilibrium state. However, theory is silent about what happens outside of equilibrium and an equilibrium describes a state of relations of balancing forces. An equilibrium is a situation where nothing happens. In a sense, the explanatory mode resembles the substantive claims of social harmony on a methodological level. Just as there is no conflict of interests in equilibrium, there is no conflict of opposing forces at work. Mirowski ar-

⁷¹ This important insight I owe initially to Prof. Milford from the University of Vienna, whose lectures probably first let me understand what a neoclassical explanation actually consists of.

gues with reference to the scientific developments in physics, from which neoclassicals borrowed their analytical toolkit⁷², that such a deterministic understanding of equilibrium is in itself inconsistent:

“Determinism had to be ultimately self-refuting, [...] [Poincaré] suggested, for if everything were always in equilibrium, there would be no way of knowing what equilibrium was, and hence no law-like regularities.” (Mirowski, 1989, p. 452)

This self-refutation of determinism results in a non-causal explanation. This was already very well known by Marx, who argued that forces of supply and demand have explanatory power only in describing the *oscillation around* some equilibrium. If, however, supply and demand coincide, i.e. in an actual equilibrium, supply and demand lose their explanatory power⁷³. What remains, are existence statements. Such existence statements require invariants, i.e. some fixed principles that allow for the postulation of an equilibrium independent of actual market *processes*. In neoclassicism, those are given preferences, endowments and technology. They must not be altered by the market process (trade, competition, etc.) themselves. They might be empirical categories, otherwise empirical discussion of the concept is meaningless, but they need not to. However, they are conceptually necessary to even talk about such a thing as an equilibrium (Mirowski, 1989, p. 454f). In other words, invariance requires that there are fundamentals determining the system without being affected by the acting of the system itself in any way. This is basically what is typically called exogeneity. It must not yield a difference for the individual agent how to arrive at a specific commodity bundle, and it must not change the technology or preference structures when competition is at work. Those invariants *pin down* the solution to the system, and yet do not determine them, in the sense of *causally explaining* them.

However, Mirowski argues that the existence of multiple equilibria can be interpreted as indeterminacy, since with the existence of multiple equilibria it is not clear, not determined, to which of those the economy would strive (Mirowski, 1989, p. 457). This is incorrect though and contradictory to his correct claim of self-refuting determinism. Already with an unique equilibrium there is no reason to argue that the economy moves towards it. On the one hand, even unique equilibria are indeterminate. It can only be said whether they exist or not. An expansion of the class of equilibria therefore does not add anything substantial to the problem of *equilibration* – the *process* of actually achieving an equilibrium state – and hence to the determination or indetermination of the system. On the other hand, if determinism is understood as certain invariant conditions entirely pinning down the characteristics of the system, unique and multiple equilibria are equally determined. Determination then consists precisely in the description of the class of equilibria, i.e. the solu-

72 According to Mirowski, the scientific model of early neoclassicals is directly borrowed from classical mechanical physics. Whereas, he argues, in physics the deterministic framework was criticized with the rise of new fields such as stochastic mechanics and chaos theory, general equilibrium theorists still employ this very same framework. (Mirowski, 1989, p. 452)

73 “Sie [die klassische pol. Ökonomie] erkannte bald, daß der Wechsel im Verhältnis von Nachfrage und Angebot für den Preis der Arbeit, wie für den jeder andren Ware, nichts erklärt außer seinem Wechsel, d.h. die Schwankung der Marktpreise unter oder über eine gewisse Größe. Decken sich Nachfrage und Angebot, so hört, unter sonst gleichbleibenden Umständen, die Preissoszillation auf. Aber dann hören auch Nachfrage und Angebot auf, irgend etwas zu erklären. Der Preis der Arbeit, wenn Nachfrage und Angebot sich decken, ist ihr vom Verhältnis der Nachfrage und Angebot unabhängig bestimmter, ihr natürlicher Preis.” (MEW 23, 560)

tions to the simultaneous optimization problems. Yet this is, as argued exhaustively, fundamentally static. The issue is not that of uniqueness or multiplicity of equilibria, but that of lacking dynamics. No matter how many equilibria exist, once they are pinned down by the invariant conditions of preferences, technology, initial endowments and so forth, there is no contingency. It is strictly speaking equally unreasonable to claim that the system will achieve a certain unique equilibrium as it is to achieve a specific one from a class of multiple equilibria. The implications of the lack of dynamics will be discussed later on, beforehand, in the following section I discuss the fundamental link between the equilibrium concept and the market.

4.3. Equilibrium and the Universal Imposition of a Market

The historical definition of neoclassical economics provided in chapter 3 emphasizes the historical rationale of social harmony achieved through mutually beneficial exchange on markets. The equilibrium concept, abstract and purged from historical concreteness, generalizes the social mode of exchange (cf. Kuiper, 2010, p. 179), the market, trans-historically. Equilibrium is nothing but the notion of aggregated individual optimal exchange, as we have seen above. If equilibrium is a methodological necessity for economic science, the market is the underlying necessary mode of thought. An equilibrium is meaningless without the context of market exchange. Explaining a phenomenon then, means imposing a market structure on that phenomenon. One needs to keep in mind that the neoclassical market need not be produced nor reproduced. The historical conditions that gave rise to a generalized market system – the separation of means of production from labor, the existence of private property, a sufficient degree of the division of labor, market participants with specific characteristics etc. (Callon, 1998a) – and form the logical prerequisites for neoclassical modeling are taken as given (see chapters 3.2 and 3.4.4). There is always a world of pre-existing commodities (including labor power), a commodity space, in which consumers and producers – who are just another type of consumers – optimize their preferences. An explanation then necessarily requires framing the object of explanation as the outcome of a market process. Even more so, an equilibrium outcome. Whether or not is has to do with actual markets⁷⁴. That in turn precisely means that neither the market as such nor actual market mechanisms can be explained. If the market necessarily exists apriori to every problem, it cannot be explained, it is, just as equilibrium, a methodological necessity or a mental prerequisite. Instead of being explained it is imposed on reality. With the success of the equilibrium concept it becomes possible, and necessary, to analyze every aspect of society in terms of market transactions. In the sense that the method has a supposedly universal class of applications – the abstractness of the commodity space in itself claims a totality of what can function as a commodity – it is a-historic. In the sense that everything can be modeled *only* in terms of market exchange, it claims false universality for a historically specific particularity. The reason that fertility decisions (cf. Becker, 1960), drug addiction (cf. Becker and Murphy, 1988), exploitation (cf. Roemer, 1985)

⁷⁴ In chapters 3.3 and 3.4 I have briefly discussed that in general neoclassical markets do not require the existence of money. Exchange is barter. When I refer to actual markets in contrast to abstract markets as a mode of reason, as employed in neoclassicism, I do not want to provide a precise definition of what actually constitutes a market. However, the involvement of money seems to be a crucial characteristic of such actual markets. For a discussion of how concrete market places look like and how they permanently need to be produced, consult the volume *The Law of the Markets* edited by Callon (Callon, 1998b).

and political revolutions (cf. Acemoglu and Robinson, 2001) are all explained by methodological equilibration (and obviously lots of exogenous shocks), therefore imposing a market structure on all those phenomena, lies in the abstract conception of the commodity space itself. Due to its abstractness it is eclectic with respect to its applications⁷⁵. Economic imperialism (cf. Lazear, 2000) – the expansion of economic methodology to virtually any social phenomenon – is a consequence of that very methodological universalism and exercised to its fullest in the popular *Freakonomics* project (cf. Levitt and Dubner, 2006).

That this supposed methodological eclecticism is actually coercive and not innocuous still needs to be shown. It requires to emphasize the role of the rational individual within it (chap. 4.5), but also to distinguish two aspects of neoclassical explanation (chap. 4.6), which differ in the way they affirm the existing. They will be treated separately in the very last sections of this chapter (chaps. 4.6.1 and 4.6.2). Before doing so, in the next section I will deepen the discussion of the implications of the fundamentally static character of neoclassical equilibrium and argue that it already entails an affirmative stand towards the phenomenon it seeks to explain.

4.4 Static Explanation and the Absolutization of Exchange

“Wir leben inmitten einer beständigen Bewegung [...], unbeweglich
ist nur die Abstraktion von der Bewegung.” (MEW 4, 130)

“Wer im Stillstand sein Heil fand, wird was sich bewegt eklig finden” (Waving The Guns)

In this section I emphasize the ideological role of lack of dynamism in neoclassical theory. I show, how the method of explanation by equilibrium, necessarily portrays reality as given and unchangeable and is apologetic of it, at its most abstract level. For this, I refer on the one hand to a paper by Denis (Denis, 2006), who deals explicitly with the equilibrium concept of neoclassical economics. On the other hand I refer to Adorno’s article about stasis and dynamism in bourgeois sociology (Adorno, 1972b). Although both ground their criticism on a dialectical understanding of existence and being, where existence is always understood as in motion, I introduce Adorno’s critique additionally for a specific reason. His text deals with positivist science more generally and Denis’ criticism can be considered an ascertainment of such critique because it deals explicitly with neoclassical theory. This is an advantage but at the same time a disadvantage, because, as I indicate in the very end of the section, it might be the case that a sufficient critique of general equilibrium theory and its equilibrium concept cannot be developed without a more general critique of formal axiomatic logic itself. Such critique, although not developed, is at least pointed at in Adorno’s article.

⁷⁵ One might consider it proof of the claimed eclecticism that the method unites seemingly opposed political thinkers. Walras, the utopian democratic socialist, as well as Pareto, the precursor of fascism, both have their place in it. If, however, one understands that Walras’ positivist methodology is an expression of bourgeois science, this peaceful unity is rather proof of Horkheimer’s insight of the closeness between liberalism and fascism (Horkheimer, 2004, p. 14)

At this point it might seem redundant to repeat that neoclassical theory is not a genuine dynamic theory, even in its so called dynamic versions, but since it is so central to the critique we will consider one more quote regarding that. Denis argues:

“Given the tastes and preferences of individuals, technology and government policy, the outcomes will always be the same for the same shocks: none of these things are themselves endogenised. Each *individual* is in permanent equilibrium as each is assumed to optimise subject to the actions of all other agents; the *society* is in continuous equilibrium as all individuals continuously optimise. With the addition of the shocks, change takes place but not development; it is just the same distribution of events being randomly selected from.” (Denis, 2006, p. 7f)

Not even in its inter-temporal version, general equilibrium theory can deal with dynamics, because “the time involved is fake time, fictitious time: it is a logical time, not a historical time. What comes first is equilibrium, and process is secondary.” (Denis, 2006, p. 8). This critique is also very well understood by serious neoclassicals themselves (chapter 3.3). However, the consequences of that are not fully unfolded by them. This is a gap that should be filled, at least partially, with the following. If equilibrium is understood as a state of rest, one of balancing forces (Denis, 2006, p. 20f), then causal explanations in terms of market forces are impossible, because they would only operate outside of equilibrium, and that is impossible for a theory methodologically reliant on equilibrium. What the economist is left to deal with in her scientific explanation is an unchanging, an *unchangeable* pre-given reality. By the act of explaining a thing, the economist conceptually neglects the forces that made that thing be and at the same time the forces that might make it cease to be. If forces are balanced, if there is no conflict, no disturbance, we find ourselves in an eternal situation. The scientific horizon is then predefined by the existing, the status quo.⁷⁶ What can be explained is not, how a certain phenomenon came into existence, nor whether or how its existence might cease. In that sense neoclassical economics, or positivist bourgeois science in general hypostatizes the concept of equilibrium because it subordinates the dynamic to the static (cf. Adorno, 1972b, p. 70f; Denis, 2006, p. 22). This subordination of the dynamic comes with an absolutization of the static, the existing as it contemporarily is, not how it became what it is and what it might become.⁷⁷ Neoclassicism is therefore conceptually unable to transcend its own historic specificity.⁷⁸ This inability – to understand its own particularity – is in irresolvable tension

76 The scientific, as well as the political horizon are crucial dimensions in the distinction of what Horkheimer calls *critical* and *traditional* theory. Whereas the latter is entirely bound to the currently existing and is not able to transcend it, neither politically, nor scientifically – hence is uncritical of it – the former is precisely characterized by a critical stance towards the existing. It reveals its historical existence and its principally changeable nature. (Horkheimer, 1937).

77 Adorno emphasises that stasis corresponds to order and dynamic to progress. He criticizes this hierarchical dichotomy as being rooted in bourgeois society itself. He understood bourgeois society as tending towards its anarchic dissolution and for that reason bourgeois thinkers necessarily hypostatized stasis and order. (Adorno, 1972b, p. 70f) To be transparent, such argumentation, and a critique of such positions, is beyond the scope of this thesis. This would require a genuine critique of the Political Economy, and not the one-sided critique of bourgeois science alone. Remember that Critique of Political Economy, or ideology-critique, is always two-sided and that I follow only one side of it within this text.

78 “The task of critical reflection is not merely to understand the various facts in their historical development [...] but also to see through the notion of fact itself, in its development and therefore in its relativity. The so-called facts ascertained by quantitative methods, which the positivists are inclined to regard as the only scientific ones, are often surface phenomena that obscure rather than disclose the underlying reality. A concept cannot be accepted as the measure of truth if the ideal of truth that it serves in itself presupposes social processes that thinking cannot accept as ultimates.” (Horkheimer, 2004, p. 56)

with the totalitarian aspiration of the method – the claim of universality of that specific particularity. It fails to understand the particular as a moment of the universal, or as Denis puts it:

“Equilibrium [in neoclassical economics] is not understood as an abstract moment or aspect of a living system, but as an approximate description of the way things are. Movement and change can then be regarded as secondary, as the recovery of the underlying state of rest by adjustment to exogenous shocks. Hence, equilibrium as a valid aspect or moment of the real economic process, is abstracted and turned into something lifeless and static. Any thing or process in the world is a unity of stasis and change, of continuity and discontinuity: to abstract a real part of that unity, and one-sidedly make it primary is to hypostatise or reify it. To do so denies the real process and presents the present, the status quo, as permanent.” (Denis, 2006, p. 23f)

Presenting the present as permanent makes radical critique impossible. If everything that can be, is what actually is, critique of what currently is becomes absurd⁷⁹. The neoclassical notion of equilibrium, therefore, bears a strong apologetic moment at its most abstract level. If the existence of things can only be addressed with respect to its static aspect, one that indeed is part of its existence but does not exhaust it, instead of acknowledging that “*being* consists of the two dynamic categories of coming-to-be and ceasing-to-be, of origin and deacease”, that “in reality, anything which *is*, can only be understood as in *transition*” (Denis, 2006, p. 29), neoclassical theory makes itself a henchperson of the current. The following quote emphasizes this:

“[N]eoclassical economics [...] stretches the static equilibrium concept to circumstances where only the dynamic version is appropriate. The result is a hypostatisation: equilibrium, which is only an abstraction and extrapolation, the logical terminus of a component process taken in isolation, is extracted and one-sidedly substituted for the whole. The temporary is made permanent, and process subordinated to stasis, with clearly apologetic results.” (Denis, 2006, p. 27)

It was shown already, that the attempts to introduce dynamism subsequently into the theoretical framework either by comparative statics or intertemporal equilibria do not circumvent this issue. There is no mediation between an initial equilibrium and another equilibrium as a solution to an exogenous shock. Denis is somewhat optimistic about the possibility of reconciling the neoclassical static equilibrium with some dynamic theory. He argues that it can and must be complemented by a genuine dynamic counterpart (Denis, 2006, p. 21f). Adorno on the other hand, in his more abstract critique of positivist science in general, explicitly rejects the possibility of that idea. He argues that the dichotomy, which according to him is already ideological, cannot be corrected subsequently, because it fails precisely to understand the unity of being. The

79 “The content, methods, and categories of science are not above social conflicts, nor are these conflicts of such a nature that people would agree to unconfined experimentation with respect to basic values just in order to straighten them out. Only under ideally harmonious conditions could progressive historical changes be brought about by the authority of science. [...] If theory is reduced to a mere instrument, all theoretical means of transcending reality become metaphysical nonsense. By the same distortion, reality, thus glorified, is conceived as devoid of all objective character that might, by its inner logic, lead to a better reality.” (Horkheimer, 2004, p. 56f)

unity of existence is not the sum of two separate moments, stasis and dynamic, but it is the permanent mediation between those two (Adorno, 1972b, p. 75).⁸⁰ That does not seem to be a mere linguistic fineness, but it rather points to a more fundamental critique of formal axiomatic logic and its underlying bivalence principle, according to which a thing either is or is not. A dialectical logic, according to Adorno, rejects such a way of defining a thing, because what is already entails what is not. There is an identity between being and not being, its negation is part of a things being (Adorno, 1972b, p. 76). To investigate to what extent the language of formal logic itself is an ideological expression, although necessary when one considers the high degree of formalization in general equilibrium theory, cannot, besides other crucial dimensions, be done in this thesis. I cannot give an answer to the central question of whether one can dynamize neoclassical theory or not. At this point I have to acknowledge that it still has not been done and that has important consequences. In other words, further critique would need to clarify whether Adorno or Denis is right with this respect. If we consider, however, the discussion in chapters 3.4.2 and 3.4.4 about the methodological causes of fundamental stasis, Denis' optimism seems inappropriate. We have seen, how the methodologically individualistic approach together with the neglect of production can be regarded the reason for why neoclassical theory cannot capture dynamics. Furthermore, if we remember Marx' critique of liberal individualism discussed in chapter 2, we can indeed find societal reasons for this methodological necessity. Marx argued that in the sphere of circulation, the market, it indeed appears to individuals as they are free and independent and isolated. On the market, they actually perceive themselves as entirely unrelated to each other. Methodological individualism is an instance, a scientific version, of this wrong self-perception of individuals in capitalist society. That exchange, the operational mode of the market, is in itself an instantaneous act and that neoclassical economics hypostatizes this mode must therefore result in statics. However, both criticisms suggest that the systematic lack of dynamics in neoclassical economics is not only apologetic but in some sense also necessary. At this point we have to be content with understanding of the tight relation between the notion of social harmony through markets, the static equilibrium concept and the entailed inability to think beyond the existing.

4.5. Equilibrium as Optimal Adjustment for the Rational Individual

So far I have argued that the method of equilibrium is tied to the status quo and requires to impose a market on every phenomenon it seeks to explain. Also, in the very beginning of this chapter and in the previous chapter, I have argued that equilibrium is the formalized notion of social harmony, a situation of no conflict. At this point, I want to elaborate on the notion of the rational individual within that concept of equilibrium. In particular, I am interested in what it means to rationally optimize in a given, non-changeable state of the

80 “[...] in der Marxischen Dialektik [hat] eine Invariantenlehre ihre Stelle, die einer negativen Ontologie der antagonistisch fortschreitenden Gesellschaft. Ihr Dynamisches, die energiegeladene Dissonanz, der Antagonismus, ist ihr Statisches, das, woran bis heute nichts sich änderte und was jedes gesellschaftliche Produktionsverhältnis ins Verderben riß. Statisch invariant war bisher der Drang, sich auszubreiten, immer neue Sektoren zu verschlucken, immer weniger auszulassen. Damit reproduziert sich erweitert das Verhängnis. Um nicht unterzugehen, arbeitet bewußtlos jegliche Gestalt der Gesellschaft auf ihren Untergang hin und auch den des Ganzen, das in ihr am Leben sich erhält. Das war ihre Ewigkeit. Fortschritt, der die Vorgeschichte beendete, wäre das Ende solcher Dynamik. So verschränkt diese sich mit Statik dem eigenen widerspruchsvollen Gehalt nach. Eine richtige Gesellschaft höbe beide auf.” (Adorno, 1972b, p. 80)

world. What kind of rationality this requires and what it entails, also normatively. And what equilibrium as a conflict-free situation means for the individual.

I have argued that neoclassical equilibrium methodology requires, and absolutizes, the market. The market on the other hand requires the rational economic agent. The neoclassical theory of behavior re-articulates and radicalizes the idea already proposed by Smith, that markets are the result of some kind of human nature⁸¹. Whereas Smith claims that part of human nature is to have an innate propensity to barter, which causes division of labor and the prevalence of markets as the dominant mode of social interaction (cf. Heilbroner, 2011; Hunt and Lautzenheiser, 2011; Kuiper, 2010, p. 179), neoclassical economics goes even further. The market and rational behavior are inseparable in neoclassical theory, they coincide. Both, in time and logic. Since, as argued extensively so far, neither markets, nor commodities, nor individuals need to be produced or reproduced and the neoclassical world is one of spontaneous existence, Smith's idea of markets being the result of some human characteristic, which requires a temporal order, is turned into markets being the defining human characteristic. The market is simply the sum of (aggregate) demand and (aggregate) supply. Demand and supply, however, are only expressions of the solutions to the individual decision problems (trade-offs), the decision problems are completely defined by the underlying preference relations, the rationality axioms. The exogenous constraints and those preferences are the only defining characteristic of 'being' in neoclassical economics. The economic agent is hence nothing more than a subordinated machine calculating optimal means for given ends⁸².

Remember, the individual we deal with, just as the commodity space it inhabits, simply exists, it has no history. It needs neither be raised, nor cared of. It represents the self-conception of bourgeois white man of early the industrialist phase in scientific terms. There is no societal process producing the preferences this individual has or teaches it the necessary tools to be able to perform the assumed hyper-rationality. We have seen that rationality is defined as constrained optimization (see chapter 3.3). The individual economic agent – be it a household, the government, a firm or a single consumer – inhabits a world of scarcity, it is endowed with limited resources and limited time and, given this limitations, it chooses that consumption bundle from the commodity space that satisfies its preference ranking best. This subjective⁸³, instrumental rationality, consisting of choosing rational means to given ends, reduces any interaction to a tool of satisfaction of pleasures (cf. Hausman and McPherson, 2008, p. 235). Ideology-critique of such a limited concept of rationality was developed already by Horkheimer in the 1940s in his *Eclipse of Reason* (Horkheimer, 2004). The reference to Horkheimer in this section is similar as to Adorno in the previous section. Horkheimer did not deal explicitly with neoclassical theory, his critique was targeted towards the more general concept of reason in western philosophical thought. However, much of what he wrote is also true for the underlying concept of rationality in neoclassical economics. Furthermore, his general critique allows us to understand how the neo-

81 Hausman and McPherson argue that, besides rationality, material self-interest is considered “as a second general principle of human nature to which most mainstream economists are committed.” (Hausman and McPherson, 2008, p. 236).

82 “The total transformation of each and every realm of being into a field of means leads to the liquidation of the subject who is supposed to use them. This gives modern industrialist society its nihilistic aspect.” (Horkheimer, 2004, p. 64)

83 “This type of reason may be called subjective reason. It is essentially concerned with means and ends, with the adequacy of procedures for purposes more or less taken for granted and supposedly self-explanatory. It attaches little importance to the question whether purposes as such are reasonable.” (Horkheimer, 2004, p. 3)

classical subject, the *homo oeconomicus*, relates to the individual in capitalist society. Recent philosophical work in the anglo-saxon academia, especially from critical realists, re-articulates certain aspects of Horkheimer's critique of instrumental reason in the context of critique of contemporary science. For instance Archer argues in a book on the critique of Rational Choice Theory she edited together with Tritter in 2013:

"[...] the totalizing impulse [of Rational Choice Theory] gained ground [...] precisely when RCT [Rational Choice Theory], as an empirical-analytical theory, gave up explicit ideological posturing and won out by naturalizing its framework of analysis. Its influence then expanded through serving the seemingly neutral interests of technical control. Over the last half century, rational choice theory has forged ahead on 'purely' instrumental grounds, by demonstrating its empirical successes in an increasing variety of fields. It has done this through the simple analytical manoeuvre of taking 'instrumental rationality' to be the dominant and universal mode of human decision-making. Because the theory is totally permissive about what substantive ends we may seek to pursue, and only offers to model how individuals maximize their net utilities within constraints of cost, time, information, effort, and so on, it recommends itself in wholly technical terms as proffering a powerful helping hand." (Archer and Tritter, 2013, p. 3)

This quote captures the essence of what I develop in the rest of this section. Rational Choice Theory naturalizes what it seeks to explain. It is used as an instrument for technocratic control, it has a totalitarian explanatory aspiration and it condemns any discussion of meaningful ends as non-scientific. In this section, I first discuss the instrumental character of the concept of rationality and how that relates the economic individual to its environment and other individuals and afterwards briefly discuss the technocratic implications of it, which is then in detail discussed in the subsequent section.

Instrumental reason in general, and Rational Choice Theory in particular, dismisses the reasonable inquiry of meaningful ends. "[T]o discuss the superiority of one aim over another in terms of reason becomes meaningless." (Horkheimer, 2004, p. 5). Everything is equally reasonable or unreasonable, depending on the underlying preference structure. Yet preferences are invariants to the model, as I have argued above. Once their structure is assumed, they pin down the solution to the system. However, there is no reasonable choice of preference structures as such. Each individual confronts the commodity space as a given universe that exists supposedly independent of itself. Furthermore, any individual's existence is considered also completely unrelated to the existence of other individuals. In fact, there is no need for additional agents in the formulation of an optimization problem, i.e. for rationality⁸⁴. Constrained optimization means to optimally adjust to the status quo, and hence to accept it. What Horkheimer asserts for western reason in general is also the case for

84 Robinson Crusoe, this slave-owning white man, exchanging in isolation present for future consumption, still functions as the illustration of the archetype of the *homo oeconomicus* in economic textbooks. This lineage goes back already to classical political economy as Marx already mentions ironically (MEW 23, 90f). Game theory might at first glance look like an extension that overcomes this radical individualist conception of rationality. To the contrary, however, it is even more individualistic. Although it introduces additional agents, game theory is precisely defined as the theory of strategic interaction of more than one agent, it introduces additional agents always as a natural constraint. For each individual, also in game theory, every additional agent is nothing but a boundary condition to satisfying the own needs.

rational choice theory in particular: “[i]n most cases, to be reasonable means not to be obstinate, which in turn points to conformity with reality as it is. The principle of adjustment is taken as given.” (Horkheimer, 2004, p. 7). Homo oeconomicus by construction of the model architecture must obey the rules of the game, which means to accept the boundary conditions under which it optimizes. This subjective rationality of optimal adjustment to the status quo is, according to Horkheimer, in itself very much tied to our commodity-exchanging society (Horkheimer, 2004, p. 4). Individuals, if the existing constitution of society is not questioned, actually need to get along in that society, and optimizing in one form or another is necessary if one is forced to reproduce via the market with limited resources and competition. Economic rationality can then be understood as the radicalized expression of a more general uncritical mode of reason. One that has made peace with the world it inhabits. That such rationality in fact can be employed as guidance to actually get along in capitalist society is quite well understood by some economists and economic methodologists, as for instance the following quote illustrates:

“The theory of rationality is a normative theory, although *not* by itself a moral theory. [...] As a normative theory, the theory of rationality says how people *should* behave, not what people actually do.” (Hausman and McPherson, 2008, p. 236)

What Hausman and McPherson miss, is that the prescription of how individuals should behave is reasonable only under *societally given conditions*. Once again, what is specific to capitalist relations, dominance of an instrumental rationality of control over the environment, is absolutized in neoclassical economics trans-historically. Neoclassical rationality does not only mean that individuals treat resources and the environment as merely a tool for pleasure satisfaction, but also other individuals⁸⁵. The purely self-interested economic agent faces other agents on the market anonymously and for her they actually constitute nothing but additional constraints, obstacles. Equilibrium is, hence, a state where each individual finds peace with its environment, i.e. when each agent individually finds the best strategy to adjust. As we understand equilibrium as the formalized notion of social harmony, we can now see that this harmony rests on a fundamental indifference of individuals towards one another, just as liberal tolerance does. To adjust to the existing means to fit in the prevailing conditions, to accept the circumstances, the individual necessity to sell ones labor on the market. The neoclassical agent is in some sense the idealization of the neoclassical economist.⁸⁶ They share the limited historical and political horizon and the inability to judge and think beyond the status quo because

85 “The history of man's efforts to subjugate nature is also the history of man's subjugation by man.” (Horkheimer, 2004, p. 72)

86 Both, the neoclassical economist as well as the neoclassical economic subject have their roots in industrialist society, as yet another extensive quote from the *Eclipse of Reason* shows: “One factor in civilization might be described as the gradual replacement of natural selection by rational action. Survival—or, let us say, success— depends upon the adaptability of the individual to the pressures that society brings to bear on him. To survive, man transforms himself into an apparatus that responds at every moment with just the appropriate reaction to the baffling and difficult situations that make up his life. Everyone must be ready to meet any situation. [...] Just as all life today tends increasingly to be subjected to rationalization and planning, so the life of each individual, including his most hidden impulses, which formerly constituted his private domain, must now take the demands of rationalization and planning into account: the individual's self-preservation presupposes his adjustment to the requirements for the preservation of the system. He no longer has room to evade the system.” (Horkheimer, 2004, p. 65)

by methodological necessity it appears as unchangeable to them. As Horkheimer puts it astutely in his critique of western rationality:

“Economic and social forces take on the character of blind natural powers that man, in order to preserve himself, must dominate by adjusting himself to them. As the end result of the process, we have on the one hand the self, the abstract ego emptied of all substance except its attempt to transform everything in heaven and on earth into means for its preservation, and on the other hand an empty nature degraded to mere material, mere stuff to be dominated, without any other purpose than that of this very domination.” (Horkheimer, 2004, p. 66f)

If, however, other individuals are conceptually the same as the environment, and adjusting to its environment means trying to control it, this concept of rationality carries an implicit tendency of domination and control over other individuals. This will be elaborated on in the following sections in more detail⁸⁷.

The argument that the rationality axioms are necessary methodological ingredients for the formulation of the welfare theorems and the justification of capitalism was developed in chapter 3.3 with reference to general equilibrium theorists. It was argued in this chapter additionally that methodology is bound to the existing and that the concepts of equilibrium, market and rationality are inseparable. Now, we can confront the self-understanding of neoclassical economics, its explanatory mode and its rationality axioms in a different light. What ideological content does a neoclassical explanation inhabit? Let us first recapture the neoclassical self-understanding of economic rationality.

Among neoclassicals there are different interpretations of the rationality axioms (cf. Cowen, 2004). They can on the one hand be considered as descriptive axioms carrying actual empirical content. In that case scientific explanation consists of deducing a prediction based on the assumed behavior and the observed constraints⁸⁸. Another interpretation renders rationality tautological. According to that interpretation, the aim of scientific explanation is rational reconstruction, or rationalization. It means that any observed choice (outcome) can be made consistent with the deductive model framework. With the ‘right’ preference relation and constraints, any observed behavior can be rendered as rational. And finding such premises is then the goal of scientific explanation. Scientific progress in that sense consists of expanding the set of theoretical models that render observed phenomena rational. The interest then shifts from prediction of future events to rationalization of present events while the past, or history, is of no relevance at all and rationality becomes a tautology (Foley, 2004, p. 336). A third interpretation Cowen discusses and that was already mentioned above is an explicitly normative one. According to it, the rationality axioms provide an ideal guideline for behavior, it mathematically prescribes how people *should* act in a given situation. There is no general agreement among neoclassicals on whether there is a correct interpretation of the axioms. I argue that all of them are in

87 Adjustment as such is not a specificity of modern society, Horkheimer shows how its intellectual roots can be found in all of Western thinking, however, tempo and quantity of contemporary adjustment indeed are specific to the industrialized world (cf. Horkheimer, 2004, pp. 68, 71).

88 A strict version of such an interpretation is impossible and such versions that interpret the empirical adequacy only approximately would need to show actually what it means to approximate those highly idealized axioms. Some of such attempts are overviewed in Hausman’s anthology on the philosophy of economics (Hausman, 2008).

some sense true as ideological expressions. Obviously, the technocratic need to manage the current economic system requires some estimation of how future events will evolve, rationalizing observed phenomena are clearly justifications of those and the ideal-type prescription of how to act rationally in a given context draws upon both aspects. The ideological expectation is on the one hand, that behavior that is closer to this ideal-type will assure the Welfare Theorems to hold, and on the other hand makes future developments more controllable. There is no clear separation between positive and normative interpretations of the rationality axioms, because neoclassical economics is always both, positive and normative.

In the following section I intensify this discussion and show how those aspects are tied together in the neoclassical mode of explanation on concrete examples. However, beforehand a duality in the mode of explanation within neoclassicism must be introduced, because neoclassicals themselves approach the world quite differently. The interpretations of the rationality axioms (and the implications for scientific explanation entailed by that) provided by Cowen in this section apply more fundamentally to one pole of neoclassical explanation, that which deals very explicitly with actually existing phenomena (below I will introduce the term vulgar neoclassicism for that pole). As shown in chapter 3.3, some neoclassicals, especially general equilibrium theorists, have a very different approach. They build hypothetical models and investigate the conditions of their logical consistency, irrespective of a model's correspondence to the phenomenal world. Such an explanation has less immediate technocratic deductions and must be discussed separately. Those are somewhat opposing poles and I will argue in the following that although those poles are analytically different, they together still constitute a unity of neoclassical explanation.

4.6. The Unmediated Duality of Explanation: Platonic and Vulgar Neoclassicism

At this point I introduce an analytical distinction within the tradition of neoclassical economics, which shall allow to understand better the different ways neoclassical theory can relate to the status quo. Two poles of the mode of explanation are characterized.

The first pole considers theory, in particular model building, as pure thought experiments, as platonic⁸⁹ axiomatic systems with little or no mediation between itself and the social reality it inhabits. Explanation under such consideration consists in examining the logical plausibility of the existence of certain hypothetical states of the world. The Welfare Theorems and basically all existence theorems, just as the Sonnenschein-Mantel-Debreu theorems, for instance, I consider to fall under this category. The guiding question behind that pole is, whether certain entities can exist as the result – the equilibrium – of individually optimal behavior, and if so under which conditions. It is immanently sceptic, because it does not a priori assume the existence of certain entities, but examines their logical intelligibility. Theory is in no immediate correspondence to the factual world and it can itself become a moment of ideology-critique, as I argue later. The negative re-

89 The term “Modell-Platonismus” or Model-Platonism was introduced by the critical rationalist Hans Albert as criticism of the lacking correspondence between pure theoretical economics and economic reality and the platonic idealization of relevant aspects of the object of inquiry (cf. Albert et al., 2012; Kapeller and Ferschli, 2018). Although I do not agree with the pejorative connotation against any kind of metaphysical reasoning this term inhabits, I will still use it in the following, due to lack of a more adequate term. At least it still rightly emphasizes the lack of mediation between theory and economic reality.

sults equilibrium theorists have derived concerning the desirability of markets which were discussed in the previous chapter are indeed important aspects of immanent critique. Theory in this sense might, as Hahn argues (see chapter 3.3), be understood as a judge to the factual world. However, in this section I will argue that even understood in this most critical way, the equilibrium methodology is far from being eclectic or non-ideological. I refer to this pole of explanation as *Platonic neoclassicism*.

Within the second pole, neoclassical explanation deals with actual empirical entities, with such that actually occur or can be observed. In this case, a phenomenon is observed and explanation consists of reconstructing the observed as the result, as the equilibrium, of individual optimization. The factual gains primacy over theory, and theory becomes an instrument of rendering the observed intelligible – i.e. rationalizing the existing. Existence is not criticized, or even questioned, but absolutized. Any empirical research falls under this category⁹⁰, but also theoretical work that deals with the expansion of the scope of neoclassical theory to any observed social phenomenon. Most prominently, what was called in the aftermath of Becker's work (cf. Becker, 1993; Herfeld, 2012) economic imperialism (cf. Lazear, 2000) can be assigned to that pole. Note, that in particular most concrete policy-related explanations are of this latter type⁹¹. Such explanation will be referred to in the following as *Vulgar neoclassicism*⁹².

Note that the distinction between Platonic and Vulgar neoclassicism is not one between theory and empirics, but one of the object of investigation and the relation between theory and that object. I consider both types as *poles* of the same stream of explanatory modes, however there is no reasonable mediation between those two poles. Yet both have ideological aspects. One aspect of ideologies is precisely to provide a course of action on some rational grounds, even if that guidance is based on a misrepresentation of social reality. In that sense the negative results of general equilibrium theory must be ignored to some extent, because they are useless in that respect. Ideologies are not only necessary false consciousness, but they are also practically relevant. Although general equilibrium theory's results can be interpreted as pre-dominantly negative regarding the efficiency of markets, its methodological inability to transcend the institution of the market results in the technocratic need to draw upon erroneous theories or theory blocks. Economic policy exists and it requires some grounding in theory. The Sonnenschein-Mantel-Debreu theorems might be true, but they are not useful for administrative purposes of markets, for the management of capitalism. This is an irresolvable tension of the prevailing theories. However, some economists, considering general equilibrium theory irrelevant at all, apparently do not seem to understand how closely their policy-oriented research relates to general equilibrium theory. Furthermore, they openly do not care about logical consistency, but only about utility of

90 Since empirical observation as such is never explanatory in itself. Its epistemological status consists in provoking a theoretical explanation of the observed. Consider for instance empirical findings of a gender wage gap and its magnitude. If they are simply considered as a description of the world as it is, rather than to explain how this gap is produced, they tend to naturalize the gap.

91 We have seen, that general equilibrium theorists engaging in the first type of explanation themselves are severe critics of economists employing simplified versions of the general equilibrium framework to empirical phenomena or concrete policies.

92 "Um es ein für alle Mal zu bemerken, verstehe ich unter klassischer Politischer Ökonomie alle Ökonomie [...] die den innern Zusammenhang der bürgerlichen Produktionsverhältnisse erforscht und im Gegensatz zur Vulgärökonomie, die sich nur innerhalb des scheinbaren Zusammenhangs herumtreibt, für eine plausible Verständlichung der sozusagen größten Phänomene und den bürgerlichen Hausbedarf das von der wissenschaftlichen Ökonomie längst gelieferte Material stets von neuem wiederkauft, im übrigen aber sich darauf beschränkt, die banalen und selbstgefälligen Vorstellungen der bürgerlichen Produktionsagenten von ihrer eignen besten Welt zu systematisieren, pedantisieren und als ewige Wahrheiten zu proklamieren." (MEW 23, 95)

a particular model (cf. Colander, 2018). The following quote shall illustrate why it is truly justified to use the adjective *vulgar* for that pole:

“General equilibrium theory is impressive, but, for an applied economist such as myself, general equilibrium proofs are largely irrelevant. They are wonderful exercises in logic, but they have little to do with the real world. [...] The policy focus is on the actual economy, not a hypothetical one. The actual economy does not need a proof of existence; *it can be assumed to exist* with deeper questions of existence left to philosophers. [...] Western capitalism does not depend on general equilibrium theory. It would still exist if the theory is or is not provable, or even if general equilibrium theory had never been developed. [...] when one envisions the economy as a complex evolving system, as I do, general equilibrium proofs just are not very important, because having a formal theory is not very important.” (Colander, 2018, p. 492, emphasis added)

Note, what Colander concludes from the failings of general equilibrium theory to provide a dynamic theory that actually proves the desirability of a capitalist system. If one cannot proof that the economy is in equilibrium, and it is equilibrium and the properties of it that constitute the substance of the theorems, not the *existence of the economy*, one simply *assumes* that it is. Furthermore, his rejection of a formal theory as not important exposes rather his subordination of logical consistency to practical utility. In as much as he affirmatively refers to Marshall and his partial equilibrium analysis (Colander, 2018, p. 493f), he obviously does not reject formal theory. Marshall’s theory was formal, it was simply inconsistent. It is obvious from this quote, that Vulgar neoclassicism, in contrast to Platonic neoclassicism has no concept of truth at the center of scientific procedure, truth is replaced by utility. It is precisely this circumstance that makes it an immediate hench-person of the status quo. With the rejection of a concept of truth it throws away the critical moment Platonic neoclassicism indeed has.

4.6.1 Vulgar Neoclassicism: Rationalizing the Status Quo

In this section I develop the mode of explanation of what I call *Vulgar neoclassicism*. For the illustration of this pole I refer primarily to the real business cycle model initially developed by Kydland and Prescott (Kydland and Prescott, 1982). On the more individual level I consider much of Gary Becker’s work as representative of that pole (cf Becker, 1960; Becker and Murphy, 1988; Herfeld, 2012). Since Becker’s models are all partial equilibrium models I will focus on the real business cycle model in the following⁹³. Nevertheless, one important commonality between those types of models are that they constitute a rational reconstruction of an empirically observed phenomenon. They start with some phenomenon, in those particular cases: occurring business cycles, or the existence of drug addiction or different fertility rates. The explanation then consists of finding adequate preferences and constraints in order to render the observed phenomenon as the result of

⁹³ A detailed critique of such partial equilibrium, very individualistic models would probably shed more light directly on the ideological role of neoclassical theory for individuals living in contemporary capitalism. Such critique is of great interest. I simply chose to focus on one specific model for the illustration of vulgar neoclassicism such that I can discuss it in more detail.

constrained optimization, i.e. of rational behavior. The models differ, however, immensely with regards to their explanatory scope. Whereas Kydland and Prescott try to deduce explanations regarding the behavior of the whole economy, in a general equilibrium framework, Becker and Murphy deal with an individual, partial-equilibrium, optimization problem. The relation of theory to the phenomenon of interest, however, is the same. Theory is used in order to rationalize what is observed. In that sense, there is already an abstract acceptance of the phenomenon, as was elaborated in the above.

The Real Business Cycle Theory is a theory of business cycles that instead of explaining how business cycles occur and what causes them, produces a mathematical model which shows that business cycles can be interpreted as the best (or optimal) response of market participants to *exogenous* shocks. Obviously such a model requires a vast majority of assumptions in order to work. Among the usual assumptions for general equilibrium models (see discussion in chapter 3.3), Kydland and Prescott assume additionally one representative, infinitely-lived household with a non-time-separable utility function and exogenous stochastic shocks to technology (Kydland and Prescott, 1982, p. 1345). The model needs to be solved by an equilibrium, and without further discussion crucial ingredients for the efficiency of such an equilibrium, such as no externalities, are simply assumed:

“To determine the equilibrium process for this model, we exploit the well-known result that, in the absence of externalities, competitive equilibria are Pareto optimal. With homogeneous individuals, the relevant Pareto optimum is the one which maximizes the welfare of the stand-in consumer subject to the technology constraints and the information structure.” (Kydland and Prescott, 1982, p. 1354)

To actually solve this problem is a quite complicated mathematical problem and the authors frequently justify the choice for parameter values by referring to empirical studies suggesting specific values, in particular for preference and technology structures (cf. Kydland and Prescott, 1982, p. 1360). It seems as if the underlying intuition is that the closer the assumptions to actual empirical patterns the better the model. Such an intuition, however, makes it even more questionable to employ a single representative household model with no externalities. We have argued already in detail why such assumptions cannot be justified. The former already due to logical inconsistencies⁹⁴ and the latter due to the absolutely unjustifiable assumption of a world without externalities. The rest of the model parameters is searched for by calibrating the model to fit the empirical data (Kydland and Prescott, 1982, p. 1360ff).

Paul Romer, a neoclassical macro-economist himself and critic of the Real Business Cycle Theory, polemically summarizes the explanatory power of real business cycle models as follows:

“The real business cycle model explains recessions as exogenous decreases in phlogiston [unexplained technological shocks].” (Romer, 2016, p. 4)

⁹⁴ Recall the results from the Sonnenschein-Mantel-Debreu Theorems, according to which it cannot be reasonably argued that the aggregate behavior of the economic agents results in any consistent behavior, even if all individuals behave consistently. The use of a representative agent is a logical fallacy.

He refers to exogenous shocks as phlogiston⁹⁵ to highlight its imaginary character, as happening out of the blue, not caused by any action or decision of any market participant⁹⁶. Romer breaks down the functioning of Real Business Cycle models to two fundamental identities. “The first defines the usual growth-accounting residual as the difference between the growth of output [...] and growth of an index [...] of inputs in production” (Romer, 2016, p. 4). He refers to this entity as the “measure of ignorance” and polemically calls it “phlogiston” (Romer, 2016, p. 4) since it is completely exogenous to theory and it is more than unclear what its empirical counterpart is supposed to be. “The second identity, the quantity theory of money, defines velocity [...] as nominal output (real output [...] times the price level [...]) divided by the quantity of a monetary aggregate [...]” (Romer, 2016, p. 4), which in fact is an assumption of neutrality of money, since the money aggregate is always proportional to the price aggregate, for any given level of output. That is to include money in the model but make it by assumption meaningless⁹⁷.

In sum, the Real Business Cycle model (and its extensions in form of Dynamic Stochastic General Equilibrium (DSGE) models) has the following structure of explanation: Business cycles are being observed and call for an explanation. Explanation consists of formulating an adequate constrained optimization problem and finding its equilibrium and calibrating the model such that the parameters empirically fit observed data. The representative agent faces an intertemporal maximization problem of expected utility. What initially is considered *the target of explanation* – fluctuations in the economy – is being added as an *additional constraint* in terms of exogenous shocks. Note how this conceptually separates market fluctuations from markets by assumption. Markets are a methodological necessity to solve any problem, they constitute the optimization problem in terms of demand and supply, which is then solved by an equilibrium. The solution to that problem is that the optimal adjustment of the representative agent to the exogenous shocks, and in the end business cycles, are, instead of being genuinely explained, rendered the optimal response of the agent to a state of the world entirely out of her, or anyone's, control.

Explaining a phenomenon in that sense means to rationalize it, to find appropriate circumstances under which it is the result of a rational optimization problem. Yet this is obviously a justification of the observed phenomenon. It is being justified, since “to explain an outcome means to rationalize it.” (Reiss, 2013, p. 29) and “[r]ationality is clearly an evaluative notion. A rational action is one that is commendable, and an irrational action is one that is not. One cannot consistently say that a certain choice would be irrational and at the same time that the agent ought to do it.” (Reiss, 2013, p. 51). Hausman and McPherson share this view when they argue that:

“The core idea is that explanations of individual choices also often *justify* those choices. The factors that *cause* choices also function as *reasons* for choices. People act for reasons and it is typically pos-

95 An imaginary chemical substance, that was assumed in the 18th century to play a crucial role in combustion.

96 This is the textbook example of an ad-hoc premise.

97 In the previous chapter it was argued, that the absence of money and an explanation for its existence is one of the greatest mysteries for neoclassical economics. What can be seen in the Real Business Cycle model is this contradiction between the aspiration of dealing with money and its factual elimination. Similarly to the aspiration of the explanation of dynamics, which is made impossible by the static equilibrium concept.

sible to justify their actions in terms of their beliefs and preferences. If one conjoins this basic view of human nature with explanatory individualism, one arrives at the view that the central explanatory principles of economics should be principles of rational individual choice.” (Hausman and McPherson, 2008, p. 235)

Therefore, the rational reconstruction of a phenomenon in principle cannot fundamentally criticize the existence of that phenomenon and Vulgar neoclassicism just as “modern social sciences have been, unwittingly or not, defenders of the status quo.” (Manicas, 1998, p. 321). Furthermore, explaining it in terms of a voluntary individual choice procedure, it throws back the whole accountability to the individual. Several points are of particular relevance to ideology-critique regarding such explanation.

First of all, note how the individual in the model faces a naturalized economy, which from the point of view of the individual is an uncontrollable, seemingly natural apparatus. It follows its own stochastic laws, that are not the result of any societal practice, just as the existence of prices is not. The agent faces this entirely reified world and all she can do is to adjust, surrender to it. Although this might grasp how the economy might actually feel like for most people, like an uncontrollable force of nature – hence it is true in some sense. However, the transformation of such ordinary common-sense experience of the economy into the behavioral mode of the subject of a scientific theory is a genuflection not only of the economic agent to the economy, but also of the economist to her subject. Instead of transcending the lay-person’s experience of the economy as a brute force of nature and revealing its social character, neoclassical theory reiterates precisely this experience in a mathematical expression. A critical view would understand that society does not disappear and individuals act “not simply in a ‘natural’ world but in a world constituted by past and ongoing human activity, a humanized natural and social world.” (Manicas, 1998, p. 319).

Secondly, the equilibrium exists only insofar as there is one *representative* agent. There must not be any heterogeneity between individuals. Consider what this means from the point of view of the technocrat⁹⁸. The technocrat, if she considers the model by any means rational and as a guide for technocratic control – and we know by now that even the most idealized versions of competitive economies require central instances of control – will want to force the structure of the model, that guarantees efficiency, upon the real world. That does not only mean to normatively prescribe to individuals how they should behave – according to the rationality axioms – but also that they all should be alike. The assumption of the representative agent entails a direct call for uniformity and conformity among individuals and hence the undermining of individualism. The more authoritarian a society, the more such uniformity can be imposed by brute force. In less authoritarian societies, such uniformity can be pursued by more subtle mechanisms⁹⁹. Either way, it is self-refuting to the

98 “[T]he economic theorist’s role is primarily a technician’s role; he or she develops information for others to use in their policy analysis. The economic theorist is not arriving at any conclusions about policy in the real world. Give the theorist another specification of preferences, or an alternative structure of analysis, and he or she will derive the logical implications.” (Colander and Su, 2015, p. 165)

99 Unfortunately, I cannot deal with behavioral economics and the principle of nudging in this thesis, but I would find it highly interesting to deal with it from the point of view of ideology-critique. My suspicion is, that nudging is precisely such a subtle technocratic instrument to control behavior in order for it to resemble more closely the behavioral axioms desired by economic models.

notion of the free individual so central to western liberal thinking and rightly refuted by neoclassical theorists, that I label Platonic and that I will discuss in the following section.

Third, if economic models and theories are used in such a way, and they frequently are, the role of the economist becomes that of an engineer. If society is considered a naturalized ensemble of pre-existing commodities, unrelated individuals and exogenous factors, and the individual can only optimally adjust to it, the engineer is the one to coordinate such optimal activity. She can calculate the parameters that guarantee efficiency, and if necessary order the change of disturbing parameters. Such an understanding of social dynamics is in principle less interested in the genuine nature of its subject¹⁰⁰. It does not ask the transcendental question, of what the historical conditions where, under which a phenomenon exists or reproduces itself in the first place, but it is interested in controlling it. As Manicas puts it in his critique of modern social science: “Understanding has suddenly collapsed into instrumental control.” (Manicas, 1998, p. 333). Furthermore, “Theoretical science has been collapsed into its twentieth-century industrialized counterpart, technocratic science.” (Manicas, 1998, p. 334). Edgley has formulated the issue of technocracy in modern society, where science is perceived of as technological rationality over its object, very convincingly, therefore I quote at length:

“[T]echnological statements, though not moral judgments, are genuinely prescriptive, practical, or evaluative, and really do follow from empirical statements of fact and scientific theories; and therefore, [...] technology represents a crucial breach, from within science itself so to speak, of the supposed logical barrier between fact and value, between theory and practice. But what kind of practice is legitimated by the idea of technological rationality? The first thing to note is that technology is not simply the use of knowledge for some practical purpose, as if knowledge were here just a means to some practical end: the idea of technology is not just the idea that knowledge is practically useful. For instance, the knowledge that a diplomat is homosexual may be used to blackmail him. In this sense, the knowledge is a means to an end external to its content; whereas in technology it is the content of the knowledge that represents theoretically the real relation of those states of affairs that a practical point of view represents as means to ends. [...] [A]mong the categories involved in this idea are those of power, control and domination; and just as it is essential in characterizing science as descriptive, explanatory and predictive to ask 'Descriptive, explanative and predictive of what?', so it is essential here to ask 'Power, control and domination over what?' The answer is, of course, the same in both cases. What a scientific theory, as technology, gives us power, control or domination over is what it is descriptive, explanatory or predictive of: that reality, or part of it, that constitutes its subject-matter or object. [...] We could say that in technology the power relation has the same object as the theory whose application it is. [...] [W]e can say that the power relation has the same terms as the

100 “[A]t bottom this rationality [the engineer’s], too, pertains to domination, not reason. The engineer is not interested in understanding things for their own sake or for the sake of insight, but in accordance with their being fitted into a scheme, no matter how alien to their own inner structure; this holds for living beings as well as for inanimate things. The engineer’s mind is that of industrialism in its streamlined form. His purposeful rule would make men an agglomeration of instruments without a purpose of their own.” (Horkheimer, 2004, p. 102)

knowledge relation: the subject with the knowledge also has the power, and the object he has knowledge about is what his knowledge gives him power or control over. This is one of the main reasons why the human sciences, if conceived according to the doctrine of the unity of science in the model of the natural sciences, can seem to be oppressive rather than liberating in their practical applications.“ (Edgley, 1998, p. 403f)

Note, how Edgley's characterization of science as a unity of technological rationality breaches the dichotomy of is and ought so central for neoclassical economics. The description of what is, in the technocratic understanding, entails what ought to be done. One cannot reasonably argue that changing a certain parameter would yield efficiency, while at the same time arguing for the parameter not being adjusted. In this sense, it is once more revealed, how the dichotomy of positive and normative economics is undermined by the practice of neoclassical economics itself. Also the three dimensions of description, explanation and prescription Edgley mentions correspond to the different interpretations of the rationality axioms among neoclassicals discussed above. If the market shall be explained, and hence be controlled, the question is then control over whom? Note, the market is nothing but the aggregation of individual optimization problems. Hence, control over the market and business cycles, means control over market participants. If market fluctuations are rendered optimal responses to exogenous shocks in the first place, where is the need for such control? Or in other words, why change the state of the world, if it is optimal anyways? It is at this point, where we must remember, that Vulgar neoclassicism really just represents one pole in a stream of neoclassical explanation. If the model does not perfectly fit the real world, as is the case for Platonic neoclassicism that will be discussed in the following section, then there immediately arises the urge to force the model structure upon reality. Consider the case where Real Business Cycle Theory does not represent the rational reconstruction of market fluctuations but a hypothetical state of the world. Then it serves as a guide to technocratically change reality in order to fit the model as close as possible because the model portrays an efficient world. And in a model where the market is defined by individual optimization problems and exogenous parameters, what can be controlled are either the individuals or the exogenous parameters. However, the latter where precisely assumed exogenous in the model architecture and hence accepted as uncontrollable. The neoclassical economist as an engineer actually tries to mediate between vulgar and Platonic neoclassicism, or more conveniently leaves it to the technocrat. No rationalization of any phenomenon ever corresponds to the factual world, but rationalizing it in terms of neoclassical method informs the engineer which methodological ingredients assure efficiency. Those in turn, at first idealizations for the sake of model building, become means of technocratic politics. The assumption of a representative agent, for instance, is a necessary methodological ingredient for rationally reconstructing market fluctuations as optimal adjustment of rational individuals to exogenous shocks. Once this is identified as such, however, it can be confronted with reality and that means imposing uniformity of individuals upon it if it is supposed to resemble the desired model.

However, that democracy from such a technocratic perspective, one that aims at establishing efficiency, can only be an instrument and not a value per se is already obvious if we remember the discussion of the

Welfare theorems in the previous chapter¹⁰¹. It is irrelevant, from the isolated point of view of efficiency, whether efficiency is achieved by collective liberal choice or the benevolent dictator. The theoretical necessity of the Walrasian auctioneer, however, informs us that markets require for their functioning an overly powerful central entity and that the welfare theorems seem more likely to support a centralized command economy than an actual democratic one. And if there is the need for such a powerful entity controlling the market, the question of ‘power over whom’ can only be: over the market participants.

In sum, apologetic and technocratic moments are crucial for vulgar neoclassicism, which a priori accepts the phenomenon it seeks to explain. The explanation consists of rationalizing it, which in turn means to justify it. The lack of empirical adequacy of those models is on the one hand ignored – it is for instance simply assumed that externalities do not exist or that aggregate behavior can be modelled by a representative individual – for the reason of even being capable to explain a phenomenon as an equilibrium. On the other hand, this lack of empirical adequacy can be interpreted technocratically as the need to force the model structure upon reality. There cannot, however, be drawn a clear distinction between those two aspects and it must be noted that forcing the model structure upon reality does indeed catch the glimpse of reality being changeable. Though the direction of that change is one of intensification of the existing, towards more efficiency, more individual rationality, more optimization. The a priori acceptance of the existing is hence only a tendency and it is quite possible to criticize the existing from a neoclassical framework, although only by means of pareto efficiency and economic rationality. One can still in terms of rationalizing an observed phenomenon draw the conclusion that it is irrational. If one provides a rational choice explanation of a phenomenon and pins down the necessary assumptions and parameters for it to be an equilibrium, one can still reject the plausibility of all those assumptions. A critical interpretation of the Real Business Cycle Theory would then read as follows: ‘In order for business cycles to be the result of individual optimal adjustment to exogenously experienced shocks to the economy, the economy would need to be constituted by a large amount of identical individuals with a specific preference structure ,et cetera. However, all of those obviously do not correspond to the empirically observed reality, hence we have no reason to think that the market yields efficiency with regards to fluctuations in the economy’. It is obvious how limited the critical content of such an interpretation of the model is, it still does not explain what business cycles are and the only consequences that can be drawn from it are precisely the aforementioned technocratic impulses to make reality fit the model.

This aspect of judging reality, and potential realities, according to efficiency, is more characteristic for the pole of Platonic neoclassicism, which shows that both, vulgar and Platonic neoclassicism, are truly just two poles or two aspects of the same explanatory system.

101 Consider only the titles of some academic papers dealing with democracy, as for instance *The Efficiency of Direct Democracy* (Noam, 1980), *Sources of Inefficiency in a Representative Democracy: A Dynamic Analysis* (Besley and Coate, 1998) or *Political Regimes and Economic Growth* (Przeworski and Limongi, 1993)

4.6.2. Platonic Neoclassicism: On the Intelligibility of Hypothetical Worlds

In this section I want to characterize the second pole of neoclassical explanation, the one I call Platonic neoclassicism. The crucial difference in its distinction to vulgar neoclassicism is the relation theory takes to reality. Whereas Vulgar neoclassicism was defined as rationalizing the existing status quo, hence has an *a priori* acceptance of it and proceeds in rationalizing it, Platonic neoclassicism deals with hypothetical states of the world. The focus is hence not on rationalizing what is actually observed, but rather on investigating the plausibility and the conditions of existence of hypothetical realities, or as Sugden calls it, constructing credible worlds (Sugden, 2000). Since I try to argue that neoclassical methodology in general is severely limited with respect to critical and emancipatory aspects, I will consider a model that at first seems to contradict that claim. If models can be build where equilibria exist with doubtlessly unjust states of the world, one might argue, my claim that the equilibrium concept is not eclectic but rather affirmative of what it describes is undermined. Or more concretely, if one can construct models, where an equilibrium consists of partial starvation, does one show that the methodological concept of equilibrium is not apologetic *per se*? If this is the case, can equilibrium be reinterpreted critically as some sort of stability condition of oppression? One might argue, that if exploitation or starvation can be modeled as the equilibrium outcome of rational optimization, the concept of equilibrium is indeed eclectic and equally compatible with radical emancipatory concerns as it is with the defense of the status quo. It would then guide critical reasoning towards the conditions that make exploitation or starvation possible and stable, and such understanding is necessary in eliminating those conditions as causes of exploitation and starvation respectively. In the following I argue that this is not exactly the case. On the one hand the lack of dynamic reasoning makes it impossible understand how the particular (hypothetical) state of the world comes into existence and hence how to overcome it. On the other hand the lack of mediation between model and (hypothetical) reality is faced with the exact same problems as for instance the fundamental welfare theorems are. It is important to emphasize once more at this point, that Platonic and Vulgar neoclassicism constitute a unity, and the analytical distinction between them emphasizes the stance taken towards reality. Any neoclassical explanation has aspects of both, it is rather a question of emphasis whether one confronts reality with theory or theory with reality.

For elaboration I will consider a theoretical model by Coles and Hammond with partial starvation as a Pareto efficient equilibrium outcome (Coles and Hammond, 1993). Other models of that type I consider to be Roemer's general equilibrium model of exploitation and class divide (cf. Roemer, 1985, 1982). The discussion will not be focussed on the technical arguments and proofs of the theorems, but rather on conceptual reasoning, just as in chapter 3.3, where we discussed general equilibrium theory and the welfare theorems. Let us consider Coles and Hammond's model.

The motivation for their model is to "to correct the apparently common misconception that, because some individuals are starving to death, the usual results of general equilibrium theory somehow do not apply." (Coles and Hammond, 1993, p. 4) This is to show that starvation is very well an equilibrium outcome, under specific conditions. The guiding question is: what are the logically necessary conditions for a competitive

economy to result in a Pareto efficient Walrasian equilibrium, where some individuals do not survive? Note, how the formulation of the problem in itself already allows to criticize the vulgar aspect of that explanation. Starvation is a thing observed, rationalizing it as an equilibrium outcome again provides at least an abstract justification of it. However, the emphasis in this paper is on the question of how an economy hypothetically must be constituted in order for it to produce starvation in equilibrium. Coles and Hammond do not rationalize a very specific reality. Therefore, its character is more Platonic than vulgar in the sense introduced here.

The point of departure for the development of the model is first to question the usual survival assumption in general equilibrium theory. It states that all agents are endowed in a way that they can survive without trade and since trade cannot harm an agent the market outcome cannot make individuals worse off. Hence, in an equilibrium everyone survives by assumption (Coles and Hammond, 1993, p. 2). The authors emphasize the obvious misrepresentation of reality within such models, people obviously starve or die due to the lack of nutrition, health provisioning or the like, in every society with market based commodity-exchange. However, the question is, is starvation in itself actually a market outcome or the result of some sort of market failures. Or in other words, do people starve because the market cannot operate sufficiently, or precisely because of market forces themselves (Coles and Hammond, 1993, p. 2). Or in still other words, do people starve because actual economies do not resemble the free market world constructed close enough, or precisely because it does so? Nevertheless, their approach differs from a more Vulgar neoclassical explanation, where observed reality is simply rationalized, i.e. appropriate assumptions are found in order for the observed outcome to be an equilibrium outcome of constrained optimization on markets. Their argument is developed sequentially, first in section two of the paper a fictitious, obviously unrealistic model is provided (Coles and Hammond, 1993, p. 5f). This model serves as a thought experiment¹⁰², it provides a relatively simple¹⁰³, logically consistent example of a possible world, where even though markets work under perfect competition¹⁰⁴, partial starvation can be an equilibrium result, even a Pareto efficient one¹⁰⁵. The basic idea behind non-survival equilibria is to assume distributions of initial endowments where some individuals have so little that all of them have to sell all of their labor in order to achieve a subsistence bundle. If there are a lot of such individuals, there will be surplus labor, more labor than is demanded by those individuals owning productive capacities. Hence, some of those individuals owning little endowment will not be able to sell enough labor power on the market in order to earn a wage high enough to buy a bundle that ensures their liv-

102 Remember Hahn's interpretation of economic models in general as nothing but 'Gedanken' experiments in chapter 3.3.

103 This model is quite literally only *relatively* simple, compared to general equilibrium models with infinite dimensions and the like. In fact, none of those models is simple or intuitive for non-experts with the lack of sufficient experience in model building. This might be another reason, why critical literature explicitly about general equilibrium theory is rare, compared to other branches of dominant, bourgeois science.

104 For the discussion at this point, we ignore the critique that was developed earlier on in this chapter, that strictly speaking neoclassical methodology does not allow to infer anything about actual causal processes, since it is entirely static. Here, it is considered again what the theorists aim to show with their models.

105 The idea of modelling without the universal survival assumption is that one additional dimension is added to the commodity space, this additional dimension captures survival, which is an indivisible good. For each consumer then two consumption sets exist, a survival set and a non-survival set. The union of those two sets is the overall consumption set for the individual. Every bundle in the survival set is obviously assumed preferred to any bundle in the non-survival set. Since survival is an indivisible good, non-convexities arise in the respective consumption sets, which is why the usual existence theorems for competitive equilibria need to be modified. This is precisely what Coles and Hammond do in section three of their paper (Coles and Hammond, 1993, p. 14ff)

ing. Since they do not survive, their optimal bundle is one that does not guarantee subsistence, their labor power dies with them and the labor market clears as excess supply is reduced to fit demand (Coles and Hammond, 1993, p. 5ff). In the following section of their paper, they extend this result to a general economy with a continuum of agents and individual production. There, standard results of general equilibrium theory are reproduced, with minor modifications that are necessary due to the non-convexities that arise through the introduction of survival as an indivisible good as an additional dimension in the commodity space. Coles and Hammond sum up their findings in the following way:

“Existence of Walrasian equilibrium was proved without any survival assumption when there is a continuum of individuals whose needs for subsistence net trade vectors are dispersed. A Walrasian equilibrium, however, may require that some individuals not survive. Even when it does [...] such an equilibrium is still Pareto efficient; to allow more individuals to survive, for instance, would require sacrifices from some of those who are fortunate enough to be able to survive anyway in equilibrium. And any Pareto efficient allocation, even one without complete survival, is a Walrasian equilibrium for a suitable system of lump-sum transfers. Thus all the classical existence and efficiency theorems apply.” (Coles and Hammond, 1993, p. 33)

What is to be concluded from this work? Apparently, the equilibrium concept has no tendency to be apologetic on its most abstract level, as I have argued above. If an equilibrium, even a Pareto efficient equilibrium, can consist of many people not surviving the equilibrium process and dying in the equilibrium allocation, what is there apologetic about the methodology itself?

First, let me start with a critical appraisal of such modeling. Coles and Hammond show in the very language of general equilibrium theory itself results that obviously can be interpreted as a direct critique of a commodity-exchanging market system. Just as other theorists discussed in chapter 3.3, general equilibrium theory is understood by them as criticism of laissez-faire capitalism as such. It goes even further to some degree. In chapter 3.3, the theorists discussed argued that by showing the very strict conditions that are necessary for a competitive equilibrium to be Pareto efficient and the two fundamental welfare theorems to hold, it is actually very implausible to think of market-based commodity exchange as reasonable and ultimately of capitalism as keeping its promises of individual freedom. Coles and Hammond go even further, they show, that even if all those conditions would hold and competitive equilibria are Pareto efficient, this can mean that people systematically die. This is an exploitation of the insight, that Pareto efficiency alone makes no judgment about the distribution of an allocation. Coles and Hammond consider this, as it truly is not, not a great surprise, as put in the following quote:

“The fact that both Walrasian equilibrium and Pareto efficiency do not require all to survive should really be no great surprise. If the analysis seems heartless in the face of human misery, that is a true reflection of the price mechanism in a laissez faire economy which general equilibrium theory is in-

tended to model. It also illustrates the ethical inadequacy of the Pareto criterion unless it is supplemented by further value judgments concerning the distribution of income or at least the alleviation of extreme poverty. For starvation may well be Pareto efficient, just as maximizing the preference ordering of a dictator is. Nor do the starving have the economic power to “block” a competitive market allocation in which they starve — they can only hope for non-market remedies [...]” (Coles and Hammond, 1993, p. 34)

They certainly contribute, to what they desire with their model, when they write “[w]e hope to have helped in making more economists understand how there are almost no limits to the cruel injustices which are possible in even a “perfect” market economy” (Coles and Hammond, 1993, p. 35). In this sense, general equilibrium theory truly can be a moment of immanent critique, it reveals how the efficiency of markets, even in a hypothetical ideal world – ideal in the neoclassical sense at least – has no compassion for anything but market clearing and optimization; not even for life itself in this particular case. Such critique takes its place alongside other critical insights that can be drawn from general equilibrium theory, such as the need for a centralized powerful entity setting prices for the functioning of markets or enforcing contracts for instance. Whereas general equilibrium theory via its stringent formal method already revealed how implausible it is to think that markets in themselves will assure some desired outcomes, the desirability of market outcomes simply depends on absurd idealized assumptions and conditions. This forbids anyone who takes the results of general equilibrium theory serious and truly understands them to argue truly in favor of a market based commodity exchange system. Note, however, how the measure of such critique is the lack of correspondence between actual messy reality and hypothetical ideal model-world. It is critical of reality precisely because it does not resemble the idealized model close enough. The model world as such is not criticized, and it cannot be. It is the measure of critique. Yet Coles and Hammond go slightly beyond such critique, because they show, how even an idealized competitive economy produces in itself non-desirable outcomes. The critique is not so much that reality does not resemble the desirable hypothetical world but rather that even if it would resemble it, it would not be desirable. This is an important addition, just remember Fisher’s quote from chapter 3.3, according to which the fundamental theorems of welfare economics are the basic intellectual justification for Western capitalism. With starvation being a reasonable and efficient equilibrium outcome, even such abstract justification seems undermined.

However, let us reconsider what was developed earlier on in this chapter, especially on the fundamentally static character of the equilibrium concept and the tendency of method to be apologetic. We know, that even under idealized conditions, equilibria might be anything but desirable. This desirability, however, is a completely external judgment to theory. In terms of the model and its inner standards, it cannot be criticized. An efficient equilibrium is efficient, because it precisely describes a situation where each individual is as well off as possible while no one else can improve their situation without hurting someone else. There is a balance of forces. Every equilibrium is the result of rational individuals optimizing, and as was argued above, to render something rational is already to render it good in some sense. It is at least not irrational, and that

rationality is a higher good than irrationality is a pre-requisite for any scientific discourse. Hence a rational outcome is good. We may not like the model and its results, but neoclassical theory does not guide this dislike. Instead of understanding a societal outcome, where although there is enough food for everyone but people still die of starvation as irrational, neoclassical equilibrium manages to do exactly the reverse. According to its own scientific standards, if people starve in a Pareto efficient equilibrium, this is the most rational and efficient, hence best thing that can happen. It was also argued in the review of the historical origins of neoclassical economics as well as in this chapter that it is no coincidence that the only internal normative criteria are those of efficiency and self-interested rationality. Equilibrium is tied to markets, the market requires the rational self-interested individual. Hence, it cannot be simply argued, that methodology should be complemented with additional external normative principles, as Coles and Hammond supposedly do, because there are some immanent normative principles that are tied to methodology itself. Suppose you refer to a different concept of rationality, one where say, a society is considered irrational when there are sufficient material resources for all but people die of starvation. It is impossible to introduce such an external judgement, because it would necessarily render neoclassical rationality irrational. It should be obvious from this, that even in its most critical fashion, neoclassical economics is far from being eclectic. There are internal evaluative principles to judge a phenomenon, i.e. individual, instrumental rationality and efficiency, and there are obviously limitless external principles with which one can confront theory. Yet those internal principles are not compatible with any external judgement. Polemically, a neoclassical theorist, that sticks only to her scientific principles and neglects any external normative sentiments would in light of Coles and Hammond's paper have to conclude the following: In equilibrium, people starve, but any other situation would be a waste of resources, there would be individuals willing to trade and mutually beneficial exchange would be possible. Hence, given the problem specified, this is the optimal, this is the best thing that can happen.

Nevertheless, Coles and Hammond judge the equilibrium according to an *external* principle. They confront the rational market outcome with a quite narrow normative principle that condemns starvation. Still, the market outcome is precisely what individuals rationally do given some initial conditions. Since rationality and efficiency as such cannot be criticized, what does Coles and Hammond's critique target? It must aim at the conditions, the invariants of the model, since those define the market outcome. It might seem innocent and plausible to do so, but let us examine – with the discussion above in the back of our heads – what this precisely means. Note, an equilibrium (or a set of equilibria) is completely pinned down by the initial conditions of the system, as in any deductive model, the invariants are the logical origin of the outcome. Coles and Hammond morally reject the outcome, hence logically they must reject the conditions determining the outcome. Those are the preference structures and the distribution of initial endowments. They identify one of the driving assumptions for the existence of starvation to be unequal distribution of ownership over land. Hence, according to a normative position that requests no starvation, the initial conditions must be altered. Altering the conditions, however, means to pose an entirely new and unrelated optimization problem. In this new situation an equilibrium might or might not exist, it might or might not be efficient and it might or might not be unique. Since neoclassical theory is entirely static, there is no relation between the initial prob-

lem that was rejected, and a hypothetical new one. Those are two different hypothetical states of the world. There is no intra-scientific reasoning of changing conditions, this would require dynamics, not just comparative statics. An equilibrium outcome as such, is always an eternal situation in itself. Without external forces, there is no change, no disturbance. Explaining any phenomenon then necessarily means to portray it as permanent. However, the call for external forces for change, some dynamic principles, that is immediately invoked by the rejection of an equilibrium outcome cannot be satisfied by neoclassical methodology, since there is no disequilibrium analysis. This necessarily goes beyond its scope. I consider this insight proof enough for the necessity of a different methodology for actually thinking beyond the existing and the actual methodological particularity of neoclassical economics.

In the end, Platonic neoclassicism, at its most critical, provides us with hypothetical morally condemnable market outcomes. It reveals, that even idealized markets, without externalities and other market failures, might have bad consequences. Nevertheless, on the one hand it still renders those outcomes rational and therefore justifies them on an abstract level. On the other hand, even if they are rejected due to external value judgements, which are always in some conflict with the apologetic intra-scientific judgements, the outcome is rendered permanent. There is no logic of change and history, hence of alteration of the modeled hypothetical world. Those are the reasons, why neoclassical theory is not as eclectic and universal as it considers itself to be. There are obvious limits to what can be thought of with this particular method. Even the most critical interpretations of neoclassical theory, those with damning verdicts of markets and their outcomes cannot overcome the method of the market. Or to be very concrete, if one is interested in the organization of society without and beyond markets, one has little to draw upon from neoclassical theory¹⁰⁶, because there, society is nothing but a huge ensemble of markets.

5. Conclusion

Neoclassical economics as the predominant contemporary economic science was shown in this thesis to contain multiple immanent contradictions, contradictions that cannot be resolved within its own scientific framework. Revealing such contradictions, I argued, is an important moment of ideology-critique. A reasonable critique requires to provide a precise definition of its object. Contrary to some critics defining neoclassical economics purely on methodological grounds and to other critics refuting the term neoclassical all along, I argued that a historical definition is necessary. Understanding the historical rationale behind the development of neoclassical economics, that of social harmony achieved through the institution of exchange via markets, allows us to understand how substantive claims carry over to methodology as such. The specific methodological ingredients of methodological individualism, axiomatic deductivism, methodological equi-

¹⁰⁶ During my studies I had a somewhat lengthy discussion with one of my professors. He persistently claimed that his job is to teach us universally applicable methods for any problem we might face (the professor is a game theorist). According to him, the method is so universal, that in specifying the parameters correctly, one will always be able to deduce what to do in any context. In private conversation, he assured me, that even if my 'problem' is to abolish capitalism, I can and must do this using this methodology. Although in this thesis I could not develop a critique of game theory itself, I believe that most of what was argued, especially on the concept of equilibrium and its static character and individual instrumental rationality, applies for game theory as well. From that, it should be very clear, that the ambition of overcoming capitalism requires more than the analytic abilities to properly formulate a maximization problem and that the claim of universality of neoclassical method is not justified.

bration, or Pareto normativity are shown themselves to be historical products. Changes of particular methodological ingredients, such as the replacement of cardinal utility theory of value by an ordinal utility theory, cannot be understood only in terms of increasing explanatory power. Instead, to some extent, the entailed, unintended consequences of some of them led to their dismissal. Cardinal utility in early marginalism, for instance, had strong re-distributional consequences. It was even argued for socialism based on such theories. It was only then when it was generally considered as an inconsistent concept among neoclassicals themselves to rank inter- and intrapersonal utility and replace it with an ordinal concept. The historical development of neoclassicism can neither be reduced rationalistically to a mere story of increasing explanatory power nor functionalistically to its apologetic role for capitalist society. Rather, understanding it as ideological, as necessary false consciousness, emphasizes the necessity of rationalizing and justifying society as it is in a fashion that allows guidance for practical action. Individualism, the neglect of production, and the focus on exchange were considered already by Marx, and subsequently by many other critics, to be ideological expressions. They correspond to the self-perception of the subject of modern bourgeois society. This is a self-perception centered around freedom, equality, and social harmony, guaranteed by the working of free competitive markets. General equilibrium theory constitutes the historical and logical culmination point of neoclassical economics. The Fundamental Welfare Theorems are a rigorous reformulation of Smith's invisible hand argument, they are considered to be the most general justification of a competitive system based on commodity-exchange. They are the most general neoclassical statements about the economy as a whole and its properties and qualify it as a theory of society in the first place. However, mathematical rigor and logical consistency, by very strictly specifying the conditions under which the theorems hold, revealed the very implausibility of that argument. The ideal conditions under which a desirable equilibrium exists are extremely narrow and cannot possibly correspond to the factual world. In that sense, general equilibrium theory has an innate critical moment, in that it to some extent undermines its own historical rationale. Nevertheless, I argued that its critical potential is limited. General equilibrium theory, and its specific methodology, is itself plagued by severe immanent contradictions. Although considering itself a theory of capitalist society, which is in turn considered a dynamic system, neoclassical theory is entirely static. The concept of equilibrium, which is a methodological necessity to address any phenomenon and not the description of a dynamic phenomenon, is genuinely non-dynamic and the approaches of comparative statics or intertemporality do not circumvent this issue. Serious general equilibrium theorists acknowledge this severe limitation of their theories. However, they have no explanation for why their theory must necessarily remain static. Methodological individualism and the neglect of production were shown to be the reasons for this. I showed, that the equilibrium method of general equilibrium theory is on the one hand a resolution of previous neoclassical contradictions, such as the circularity of explaining societal aggregates in terms of purely individualist terms, which themselves require existence of certain societal aggregates in the first place. On the other hand, this resolution erased any temporality from the method because the only consistent way to formulate it was to model the whole economy as a world of instantaneous existence. Equilibrium theory in its modern version is the study of the existence and properties of equilibria, it remains silent about the actual equilibration process.

Overall, the methodology was shown to be very much permeated with substantive concepts. The methodological concept of equilibrium corresponds to the substantive concept of social harmony, a state of balanced forces, free of any conflict. Such an understanding of methodology, I argued, is only possible to arrive at from an explicit ideology-critical perspective. Without situating neoclassical theory, and its method, historically in a general societal process, one cannot identify how content carries over to method.

From such a historical definition of neoclassical economics and its methodology, I developed arguments for an ideology-critique of its explanatory mode. This critique, however, does not consist of questioning whether or not neoclassical models are explanatory, as the more orthodox literature does. Rather, I take the explanatory status as given, and investigate what it entails, to explain a certain phenomenon in that terms. Explaining a phenomenon means to construct a model of individual constrained optimization organized by market exchange. Furthermore, it means to impose an equilibrium upon the phenomenon, because disequilibrium analysis is impossible in neoclassical economics. Equilibrium precisely means a conflict-free situation of no possibilities for mutually beneficial exchange, hence a state of rest. This entails even further, that every individual is as well off as possible, given the initial specification of the problem, because what each individual does, is precisely optimization of preferences under constraints. It is also clear, that imposing an equilibrium for an explanation, equilibrium is a methodological necessity, means to impose the market form upon that phenomenon. The market is the underlying thought-form. Neoclassical methodology, with its abstract definition of the commodity space, has a totalitarian aspiration. It becomes possible and indeed necessary to explain every phenomenon as a market outcome. Even more so, as an equilibrium outcome of the market, i.e. a harmonious situation of balanced forces and interests. In that sense, every phenomenon that is explained is already abstractly justified. For if what exists, and is sought to be explained, is explained as a rationally established harmonious state of rest without a dynamic understanding of how it became to be, it cannot be criticized. However, it was necessary to introduce an analytical distinction within the spectrum of neoclassical explanation for a more precise critique. On the one hand, explanations can aim at rationally reconstructing observed phenomena, hence deal with the phenomenological world. In that case, explanation consists of defining an adequate optimization problem, i.e. find appropriate initial conditions and invariants for the model. Such an explanation I call vulgar because it is truly apologetic of the status quo and has little explanatory benefit beyond that. On the other hand, neoclassical theory can deal with hypothetical, idealized states of the world. Then, explanation consists of studying the intelligibility of hypothetical worlds, i.e. investigating under which conditions a hypothetical state of the world could have been the result of individual constrained optimization. Such an explanation I label Platonic. The duality of Platonic and vulgar neoclassicism actually constitutes a unity. This unity, however, is not mediated. I argue that the mediation does not take place scientifically and is left by the neoclassical economist to the technocrat. Any explanation has aspects of both. Every hypothetical model resembles the actual world in some respects (and does not resemble it in most respects) and every rational reconstruction of an observed phenomenon idealizes or deteriorates certain aspects of that phenomenon. In both cases, theory serves to judge or evaluate reality. Either it is rationally reconstructed and hence justified, or it is shown to deviate from the model and hence from an inner-

neoclassical perspective evaluated negatively. Precisely there lies the technocratic impulse. For if equilibrium models always constitute a situation of balanced forces and therefore are good, the conclusion must be that reality must resemble the model more closely. Consider the Fundamental Welfare Theorems. They are very specific about the requirements for the desirability of competitive markets. One possible interpretation is, and that is the more truthful one, that there is actually no reason to believe in the desirability of markets because the idealized conditions under which this would be guaranteed are shown precisely by general equilibrium theory to be extremely implausible. Another interpretation, however, and that corresponds to the aspect of ideologies as guidance for practical action, is that the model structure needs to be forced upon reality in order to resemble those ideal-type conditions. Even in its most critical versions, general equilibrium theory does not provide a theory that can think beyond the status quo of societal relations. Its methodology is fundamentally tied to the existing, to markets, and instrumental subjective rationality. The more negative results such as the Sonnenschein-Mantel-Debreu Theorems might be analytically true, but they do not inform political action or provide a self-rationalization of contemporary bourgeois society. They are, from the technocrat's perspective, useless. They have more value from a critics perspective. However, the critical potential of Platonic neoclassicism is limited, because the methodology does not allow us to think beyond the existing.

Further research could relate to this thesis in several aspects. First, a more detailed historical perspective on the socio-economic conditions giving rise to specific theoretical and methodological changes in neoclassical theory could illuminate more clearly the necessity in necessary false consciousness. I have argued throughout the thesis, that my approach of dealing only unilaterally with theory, cannot exhaust an ideology-critique. It needs to be complemented with a detailed study of how theoretical figures and approaches express certain ideological self-perceptions of specific historical constellations. Secondly, the very abstract and general content of general equilibrium theory discussed in this thesis needs to be confronted with actual contemporary societal relations. How are currently property relations organized, what are the conditions under which individuals have to make their decisions, what influences their behavior? Or yet more importantly, what is the central authority doing the job of the Walrasian auctioneer and the contract enforcer? How are the insights of the Fundamental Welfare Theorems translated technocratically into reality? Such investigation, I believe, would also make much more clear how sub-disciplines such as public economics or behavioral economics evolve. I have indicated several times, that I consider the development of neoclassical sub-disciplines as reactions to particular immanent contradictions of general equilibrium theory. Specifically, I would consider a detailed critique of behavioral economics and the concept of nudging promising. My suspicion is that nudging serves as a subtle mechanism of technocratic control of individual behavior for it to more closely resemble the ideal-type rationality required for the fundamental welfare theorems to hold. Such critique, however, requires not only to consider theoretically the concept of nudging but also empirically how governments and firms actually design and implement their nudging concepts. The point of view of ideology-critique allows a critical stand towards it because it understands the relation behavioral economics has towards general equilibrium theory and the fundamental welfare theorems and, hence, capitalist society.

Thirdly, such analysis also requires to investigate the conditions under which the scientific process operates. What are the publication structures, how are they financed, etc? If general equilibrium theory with its partly negative results regarding the free market system is considered by most economists overcome because it is not practical, what does this imply for changing scientific standards? If truth is not the criterion, but rather utility for technocratic purposes, who benefits from such research? I think that there is plenty of literature regarding some of those aspects, although from different perspectives than the one followed here. It would clearly already be a huge task for itself to relate such research to the approach of ideology-critique, but I think it would be possible and reasonable to do so. However, I think there is one aspect, that I indicated at some points in this thesis, that is not extensively discussed in the literature, at least not to my knowledge and that seems ambiguous with respect to its prospects. It is that of a detailed discussion of a possible dynamization of the neoclassical equilibrium concept from a dialectical perspective. This has to do with a systematic critique of axiomatic formal logic as such because the static character lies methodologically in the axiomatic deductive approach. Substantively, I have shown that it lies in the focus on commodity exchange on markets among rational individuals. If and how the neoclassical equilibrium can be integrated into a dynamic theory as a moment of that dynamic is unclear.

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