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1. Introduction

One of the most defining features of the internet is that the digital realm is full of opportunities to access content and service platforms, like YouTube and Facebook, “for free”. Users can browse the web, try services and consume products without having to pay a single euro. At first glance, this fact stands in stark contrast to the huge economic successes of big tech companies. John Newman, for example, points out that the online market for zero-price products, i.e., digital services or content without a monetary price,¹ is one of the most relevant growing markets in America. Seven out of the ten largest internet companies, which mostly or exclusively market zero-price products, had a combined market capitalization of over \$750 billion dollar already in 2015.² But how can commercial online products and services be “for free” while companies make such huge profits? Even though most corporations do not explicitly call up a price online, they are creating economic value from what they are trading instead of money, viz. personal data and user attention. In Newman’s view, the absence of a positive price is no reason to consider the exchange of personal data (or attention) as a non-commercial interaction. In contrast to other authors who understand “free” service use as a transaction which falls “outside the marketplace”³, Newman proposes that users are paying customers.⁴ He conceives of them as situated in a regular market setting, or what we can call a personal data market, where data (and attention) instead of money serves as the means of payment. The gist of Newman’s view is that these data markets are the central mechanisms that sustain the economic success of big tech corporations, even in the absence of positive monetary prices. Online products are not really “for free”, but are simply traded in a different currency. Even though digital content and services have no price, they come with a cost.⁵

While the collection and monetization of personal data fuels the profits of big tech companies to date, their once positive reputation seems to be fading faster than ever.⁶ A main trigger for this

¹ I will use the terms zero-price and “free” interchangeably.

² See Newman 2015, 151, Footnote 3. In light of the enormous economic opportunities related to data, some have termed data the new oil of the 21st century. See The Economist 2017.

³ Zuboff 2019, 69

⁴ One of these authors is Shoshana Zuboff. I will compare her and Newman’s view in section 4.5.3.

⁵ According to Newman, users are not “the product” as it is sometimes affirmed. Instead, he calls this particular market arrangement a Zero-Price Market. See Newman 2015 and Newman 2016.

⁶ A periodically iterated study by the Pew Research Center found that after a relatively stable period, attitudes towards technology companies have changed considerably. From 2015 to 2019, the share of people in America who view technology companies positively declined by 21 percent. Moreover, 33 percent of Americans even perceive such companies as having an overall negative effect. See Doherty and Kiley 2019. In 2018, Smith found that “72 % of the public thinks it likely that social media platforms actively censor political views that those companies find objectionable.” In his study, Americans were still more positively inclined towards technology companies than in the above cited study. See Smith 2018. With respect to social media, Auxier found that people are mainly concerned about dis- and misinformation as well as political partisanship and hate speech. See Auxier 2020.

shift has been Facebook’s Cambridge Analytica scandal which revealed the misuse of personal data for voter targeting in the 2016 U.S. election.⁷ A study by Auxier and colleagues found that Americans are increasingly worried with big tech corporations due to the opaqueness surrounding data collection. Many users claim for example to have lost complete control over how and why personal data is collected, processed and stored. A majority of roughly eight-in-ten Americans even affirm that the benefits of commercial personal data collection do not outweigh the potential risks.⁸ In order to register this marked reversal of tech-friendly attitudes, the Financial Times and the Oxford Dictionaries decided to announce the term “techlash” the word of the year in 2018.⁹ Shoshana Zuboff has been one of the most prominent academic figures to both echo and promote the techlash sentiment by taking the monetization of personal data under closer scrutiny. Her notion of surveillance capitalism is meant to indicate the particular business model of data-driven companies like Google and Facebook, which require the collection of fine-grained information about users for “free” services. In light of the constant flow of personal data built into social media platforms and search engines, Zuboff argues that “surveillance capitalism imposes a *fundamentally illegitimate choice* that twenty-first-century individuals should not have to make”¹⁰: the exchange of personal data for “free access” to essential internet infrastructure. In her view, the exchange deal is not mainly illegitimate because people increasingly perceive it as a bad choice, a possible interpretation supported by the above studies. Rather, Zuboff holds that it is fundamentally and morally wrong to put people in such a decision scenario to begin with. Users should not have to weigh the benefits against the possible risks of disclosing their data in return for online services.¹¹

Zuboff’s critique of surveillance capitalism and the monetization of personal data is deeply inspired by the revived critical engagement with markets and political economy in the aftermath of the financial crisis in 2008. After several decades of market triumphalism, the crash of the world economy prompted old and new questions regarding the proper regulation of markets.¹² The collapse of the financial system made it necessary as well as possible to think anew about the moral qualities of markets from a philosophical perspective.¹³ Alongside debates concerning the distributive justice of economic systems in general, one of the central questions of this still ongoing

⁷ For Facebook’s Cambridge Analytica scandal see Cadwalladr 2017 as well as Tufekci 2018.

⁸ See Auxier et al. 2019.

⁹ See Oxford Languages 2018 and Foroohar 2018.

¹⁰ Emphasis added. Zuboff 2019, 11. See also Zuboff 2015, 83 f.

¹¹ Chapter five will discuss moral problems with such choice scenarios such as asymmetrical information, ignorance of associated risks and issues pertaining to the aggregation of data.

¹² See Sandel 2012, 6 f.

¹³ See Herzog and Honneth 2016. For the relationship between moral philosophy and economics see Hausman, McPherson, and Satz 2017, chapter 1. See also Mazzucato 2019.

debate turned out to be whether markets have moral limits and how best to conceive of them. Commodification theorists like Elizabeth Anderson and Michael Sandel argue for example that the moral value of goods can be corrupted through market exchange itself. In their view, moral and market values are sometimes simply incompatible. Certain goods should not be commercially traded if their moral value is to be retained.¹⁴ According to commodification theory, markets in education or sex are morally problematic due to “the expansion of markets, and of market values, into spheres of life, where they don’t belong.”¹⁵ Markets are not neutral mechanisms like the economic textbook definition has it, but can, under certain conditions, crowd out important human values. Therefore, some things are simply not meant to be sold. By applying commodification theory to the commercial use of personal data, privacy scholars voice their objection to the current status quo in the digital realm.¹⁶ Zuboff herself argues for example that the central problem of Google’s business model is that commercial personal data collection objectifies users without respect for their privacy or the importance of social ties.¹⁷ The moral problem so conceived is that surveillance capitalism institutionalizes a market where it does not belong. From the perspective of commodification theory, the main problem is that personal data exchange should not be a market choice for individuals.

This master thesis will take on a likeminded project. In similar spirit to Zuboff and the privacy scholars, my main aim is to investigate the moral qualities of personal data markets and their limits. Even though my investigation will head in the same direction and is likewise inspired by the renewed interest in the normative inquiry of markets, my objective is to explore a different strand of arguments than commodification theory. In order to reevaluate the (il-)legitimacy of commercial personal data exchange, I will reconstruct an alternative moral critique which concentrates on the concept of markets itself rather than the moral value of particular goods. The main influence on my way of proceeding is the work of Debra Satz. Like Sandel and Anderson, Satz argues in opposition to the standard economic view of efficiency that markets have moral limits independent of their contribution to distributive justice. Other than commodification theorists however, her account of the moral limits of markets is not essentially tied to the goods traded on a market. In her view, limits are not set in virtue of a moral conception of nonmarket goods, but rather by moral

¹⁴ See Anderson 1993 and see Sandel 2012. See also Walzer 1983.

¹⁵ Sandel 2012, 7.

¹⁶ See for example Schwartz 2004 and Cohen 2019. Nissenbaum’s account of privacy as contextual integrity builds on Walzer’s idea of sphere differentiation. See Nissenbaum 2010. I will discuss the relationship of Walzer’s, Anderson’s and Sandel’s work in chapter three. See Walzer 1983.

¹⁷ See Zuboff 2015, 79. Zuboff argues that users are objects since Google extracts personal data from them to sell behavior predictions. Accordingly, users themselves are not the objects of exchange. See Zuboff 2020, 94.

dimensions that bear on the exchange relations such as the weak agency and underlying vulnerabilities of the parties as well as detrimental social effects like the subversion of the equal standing of citizens. Satz holds that a high score along these dimensions justifies the prohibition or regulation of markets.¹⁸ By applying Satz's framework of noxious markets to personal data markets, I hope to contribute a novel perspective to the normative discussion of the digital economy. I will thus reopen the question as to why exactly the choice of commercial personal data exchange is (perceived as) morally illegitimate. Instead of conceiving of personal data markets as inherently wrong due to commodification, I will investigate the particular structure of such markets to locate moral problems as they pertain to the exchange relation of the parties.

Let me briefly illustrate the implications of this way of proceeding for the structure of my thesis. Since I propose a shift from commodification theory to arguments that investigate the structural aspects of market exchange, I will not primarily engage with moral ideals associated with personal data. Instead of starting from a particular philosophical understanding of privacy, which is important for most commodification theorists in this context, I will focus on markets and the relationship of the transacting parties. The first step of my investigation is thus not a clarification of moral concepts, but an introduction of the standard view on markets. Moreover, I will not assume in advance that moral problems with personal data collection arise in terms of privacy violations, even though the intrusion of private spheres is a relevant topic. In addition, I will accept the task to show that Satz's noxious market framework applies to currently existing exchange relations in the digital realm. It is therefore a central aim of this thesis to develop a proper understanding of Zero-Price Markets, where data is used as payment for "free" service use or zero-price products. Accordingly, I will take Newman's idea of data as payment seriously and investigate the background conditions and consequences of personal data markets.

The following thesis consists of six chapters. In order to fully recapture the reasons for a renewed interest in markets and their limits, the subsequent chapter two introduces the economic view of markets and its standard assessment. To begin with, the first section of chapter two focuses on the basic concepts of neoclassical economics and its positivistic set-up. I introduce the notions of rationality, demand and supply, and give a brief overview of marginalism, prices and the idea of market equilibria. Section two of chapter two shows how economists move from positive to normative economics, i.e., from explaining and predicting to evaluating economic states of affairs. The third section of chapter two introduces the notion of Pareto optimality as well as the theory

¹⁸ See Satz 2010, chapter 4. A related critique is developed by Samuel Bowles which I will introduce in the third chapter. See Bowles 1991.

of market failure that is based on the two Fundamental Theorems of Welfare Economics. Here, I turn attention to the fact that the theory of market failure does not specify any limits for markets. On the contrary, market failure is the economic justification to widen the scope of the market.

The following chapter three engages with the limits of markets from a moral perspective in order to investigate the effects of markets beyond efficiency analysis. In the first section of chapter three, I will reexamine the notion of government intervention and discuss the normative basis upon which economic assessment rests. My aim is to review the connection between efficiency and impartiality, the silent economic assumption that consumption choice is voluntary as well as the general role of governments in a market economy. The remaining sections of chapter three present three major critical perspectives on neoclassical market theory that develop a more comprehensive assessment of markets as social institutions. The discussion begins in section two of chapter three with Samuel Bowles's topology of markets. Bowles argues that the standard model of markets and hence efficiency analysis is not universally applicable since markets are not structurally homogenous, but heterogenous. In his view, market exchange can be contested or constitutive, which means that markets can impose power relations or have social and cultural effects relevant for assessment. The third section of chapter three discusses commodification theory. As already indicated above, commodification theorists like Michael Sandel problematize the compatibility of market exchange with the moral value of the exchanged goods. My main focus is to reconstruct commodification as consisting of two claims, viz. that the process of commodification can lead either to complete or incomplete corruption of the value of a good. Subsequently, section four of chapter three presents the noxious market framework of Debra Satz. She argues that particular markets are perceived as morally problematic since they can affect the moral and political standing of the exchanging parties. Rather than alluding to the value of particular goods, she develops four moral parameters relevant for the evaluation of particular markets. Whereas weak agency and underlying vulnerability relate to the legitimacy of a transaction, societal and individual harm concern the assessment of market outcomes beyond efficiency.

The subsequent chapter four is concerned with a descriptive investigation of personal data markets. The first section of chapter four will discuss the relevant characteristics of personal data, for example that it conveys identity-relevant information. Section two of chapter four presents the notion of Big Data and discusses the implications of recent technological advancements for the economic value of personal data. In the third section of chapter four, I draw a key distinction between personal data markets with and without prices. On Price Markets, personal data is sold for money. On Zero-Price Markets, personal data is exchanged as a method of payment for zero-price products. The following two sections deepen this initial classification. Section four of chapter

four investigates two variants of Price Markets, viz. the data broker industry and Laudon's National Information Market. Laudon in particular holds that property rights in personal data could mitigate the market failure of data brokerage. Finally, the fifth section of chapter four conceptualizes the idea of Zero-Price Markets in order to argue that individuals who use zero-price services or products are best understood as de facto customers. To clarify this, I outline the paradigmatic market structure as multi-sided market which connects users with advertisers via platforms.¹⁹ My discussion then moves on to Newman's view. I explore the notion of data as payment and illustrate that individuals face exchange costs on personal data markets.

Building on the recapitulation of the normative discussion of markets and the description of the current status quo as market settings, chapter five focuses on the application of Satz's noxious market framework to Zero-Price Markets. The first section of chapter five touches upon the current status quo of commercial data use which centrally relies on individual consent to legitimize data exchange and de facto market arrangements. Section two of chapter five discusses the nature of moral corruption caused by the process of commodification on personal data markets. I argue that personal data markets are per se unlikely to completely corrupt or fully dissolve widely held moral values. Since this indicates that fairness considerations are more central to their moral assessment, I use Satz's noxious market framework to evaluate personal data markets in the subsequent sections. Section three of chapter five investigates the noxious sources of personal data markets with respect to weak agency and underlying vulnerabilities. A main worry is that agents are ill-equipped to properly assess the benefits and risks of personal data transactions. The fourth and last section of chapter five concludes the application of Satz's framework by addressing societal and individual harm caused by personal data exchange on markets. I discuss how personal data relates to basic agency and welfare interests as well as the equal status of individuals.

Chapter six remains to sum up the thesis and state results. The first section of the last chapter presents the key insights of this thesis, which is, among others, that the background conditions or sources of personal data markets are morally problematic. As a more general point, I argue that the introduction or normative defense of personal data markets cannot be vindicated on the basis of standard efficiency analysis alone. In light of my results, the last section of the thesis points to relevant alternatives like Data Trusts to reform the current structure of personal data markets.

2. The Economic View of Markets

Before addressing the limits of markets, I will first attempt to clarify the concept of a market itself. In the following chapter, my aim is to introduce the standard economic view on markets or what

¹⁹ Google Search is one example where the website is used as a platform to connect advertisers with users.

I will refer to as “the Market” framework. When speaking of economics, I hereby mean to depict the “orthodox” discipline of neoclassical microeconomics.²⁰ Whether moral or economic in argument, all accounts of the limits of markets that I will discuss in the following chapters engage directly with this standard view. At first sight, it may seem a bit too ambitious to introduce a whole conceptual framework only to discuss the notion of the market. Why not simply state the definition of markets and discuss its ethical or economic appeal upfront? The reason for my way of proceeding is the particular methodology of microeconomics. Note in this respect that the prefix *micro-* already signals that economics operates on a specific level. As Paul Samuelson and William Nordhaus put it “[a]t its core, economics is the *science of choice*.”²¹ Since economics is first and foremost a theory about people, markets emerge only from the actions of economic agents.²² As a result, there is no definition of markets but only axioms regarding individual choice that lead to a model of markets.²³

Take Adam Smith’s famous invisible hand which is one of the central themes of neoclassical thought.²⁴ It stipulates that a socially preferable market economy can arise “from the microlevel” of (rational) choices and individual motives alone.²⁵ The aim of economics is thus to explain how “self-interested voluntary exchanges in favorable conditions lead to coherent and efficient economic organization”²⁶ without the need for central planning. Microeconomics is the scientific enterprise to formalize this intuition of economic order and to mathematically prove its realizability.²⁷ It is at times a highly theoretical undertaking and the models are often criticized for the lack of robust reference to the real-world economy.²⁸ Nonetheless, it forms the ideal theory behind many policy decisions, especially in respect of the intervention in markets on the basis of social welfare loss. Hence, this thesis would be incomplete without a brief exposition of the basic concepts of economics. It should be duly noted that my summary will remain cursory and surely

²⁰ In using the term economics, I do not mean to imply that it is the only field deserving this label. For other strands of economics see Proctor et al. 2018.

²¹ Emphasis added. Samuelson and Nordhaus 2010, xix.

²² “[E]conomics is primarily about people not goods.” See Varian 2014, 687.

²³ For discussion see Hodgson 2010, 251 f. See also Satz 2010, chapter 1. I rely on Hausman 1992 for the exposition of the axioms or “laws” as he calls them.

²⁴ See Samuelson and Nordhaus 2010, 5. Adam Smith of course is not himself a neoclassical thinker. Much controversy surrounds the appropriation of the invisible hand thesis by economists. See Herzog 2013.

²⁵ Most economists argue that market-based economies are superior to command-based economies. See e.g., Friedman 2002, chapter 2. Smith however established the preferability of a market economy over the unjust institutions of feudalism. See Herzog 2016, 16 f.

²⁶ Hausman 1992, 100.

²⁷ See Arrow and Débreu 1954.

²⁸ Friedman defends the neoclassical approach on the grounds of its predictive success of “the class of phenomena which it is intended to explain”, that is prices and quantities of goods. Friedman 2008, 149.

falls short of doing the discipline full justice. This being said, I hope to be able to convey a general outlook of economics on markets.

The outline of this chapter is as follow: Section 2.1. will deal with the basic concepts of the neoclassical view and its positivistic approach as grounded in the notion of scarcity. The first subsection 2.1.1. briefly sketches rational choice and utility theory that form the core of economics. To complete this section, subsection 2.1.2. discusses how economics moves from the micro-foundation in rational choice and utility theory to the notion of aggregate demand and supply. Taken together, I will thus present a brief overview of how economists study a mathematically formalized “system of generalization”²⁹ of behavioral patterns, in relation to the quantities of goods that individuals demand, and firms supply. In general, these choices are conceived of in terms of *market outcomes* in a price-commodity-space. In order to explain the interaction between supply and demand, economics entertains the equilibrium assumption which is the main concern of the concluding subsection 2.1.3. The central process that moves markets towards a *state of equilibrium* is the price mechanism.³⁰ Through prices, markets are said to coordinate behavior of individuals and firms. In this manner, subjectively optimal choices by individuals are said to lead to a stable market equilibrium.³¹ Let me stress again that microeconomics assumes nothing whatsoever about the institutional structure of markets to explain this process. “The Market” is an idealized model of optimal individual choices.³²

After this brief outline of the basic concepts of neoclassical economics, the subsequent section 2.2. will show how economics moves from a positivistic framework that explains the behavior of economic agents to the normative evaluation of markets. The following section 2.3. ties the basic concepts together by the help of the notion of pareto optimality (or efficiency) as the social state which cannot be altered without worsening the situation of some economic agent. The Fundamental Theorems of Welfare Economics prove that every competitive general equilibrium is a pareto optimum and vice versa that every pareto optimum is also a competitive general equilibrium.³³ This paves the way to understand the concept of market failure as the main economic justification for limiting markets.

²⁹ Friedman 2008, 149.

³⁰ When there is no excess demand or supply, a market “clears” and is said to be in equilibrium. See Hausman 1992, 50-54.

³¹ For an overview see also Proctor et al. 2018, 3.

³² I will use the term in parenthesis and a capital M, whenever I mean to refer to this model.

³³ See e.g., Sen 1988, chapter 2.

2.1. The Basic Concepts of Neoclassical Economics

It is well-known that the notion of efficiency is at the heart of economics. There is however an equally important concept that is certainly less often discussed. The standard assumption of scarcity is so central that economists like Lionel Robbins even defined economics as “the science which studies human behaviour as a relationship between ends and *scarce means which have alternative uses*.”³⁴ By the same token, Samuelson and Nordhaus argue that economics would cease to be a meaningful subject if goods would not be scarce.³⁵ One might wonder how in today’s affluent Western societies, economists can continue to affirm circumstances of scarcity in the same fashion as Lionel Robbins did back in 1932? The resolution of this seeming paradox lies in the very definition of scarcity. As Samuelson and Nordhaus argue, economics does not understand scarcity as in relation to objective needs or a standard of living.³⁶ Rather, Robbins “alternative uses” of scarce means refer to individual desires and wants (that may be needs, albeit purely subjective ones). So even though one can rightly claim that today’s societies are affluent, Samuelson and Nordhaus affirm that if “you add up all the wants, you quickly find that there are simply not enough goods and services to satisfy even a small fraction of everyone’s *consumption desires*.”³⁷

The initial motivation of Robbins to present a scarcity-based view of economics was to provide a truly scientific basis for positive economics.³⁸ He was convinced that economics should not debate the ends of individuals, but accept them as givens.³⁹ Normative assumptions, formerly a standard topic of classical economics, were excluded altogether to retain a value-neutral basis for the discipline as a positive science.⁴⁰ Up until today, microeconomics construes individual ends as exogenous facts about agents that are neither explained nor predicted and still less evaluated in themselves.⁴¹ Instead, economics purports to be a formal investigation of instrumental rational choice in circumstances of scarcity. The sole explanatory challenge so conceived becomes an engineering problem:⁴² “the securing of *given ends* with least means.”⁴³ Economic behavior is thus

³⁴ Robbins 1932, p. 15. Emphasis added.

³⁵ See Samuelson and Nordhaus 2010, 4.

³⁶ For a macroeconomic view on the standard of living in America see e.g., Gordon 2016.

³⁷ Emphasis added. Samuelson and Nordhaus 2010, 4.

³⁸ See Robbins 1932, p. 132. For a discussion of the distinction between positive and normative economics see Putnam 2003. Robbins forerunners were most notably Leon Walras, William Stanley Jevons and Carl Menger. For a short overview see e.g., Mazzucato 2018, 60 ff.

³⁹ Accordingly, there is no such thing as an economical end. See Robbins 1932, 4 f., 16 and 21.

⁴⁰ See Satz 2010, chapter 2.

⁴¹ See Hausman, McPherson, and Satz 2017, 55 f.

⁴² See Sen 1988, 2 ff.

⁴³ Robbins 1932, p. 129. Emphasis added.

defined as optimizing or instrumentally rational. In following Hal Varian, I will call this the optimization assumption of economics:

People try to choose the best patterns of consumption that they can afford.⁴⁴

If confronted with a choice between alternatives, economics stipulates that people choose what they want the most, given their limited budget. However, in avoiding the discussion of ends, economics renders the value of goods (and their prices) fully subjective since scarcity is exclusively tied to individual desires.⁴⁵ The next section introduces rational choice and utility theory in order to explain how economics accounts for the assumed optimal choices of consumers.

2.1.1. Rationality

In order to formalize the optimization assumption, neoclassical economics builds on the concept of instrumental rationality as interpreted in utility theory.⁴⁶ Like many conceptions of rationality, rational choice theory initially starts from the classical folk-psychological desire-belief model and seeks to explain, at least in broad terms, the reasons for individual action.⁴⁷ Based on this view, an agent's rational choices arise from a combination of her desires and beliefs under constraints. The aspect of belief has been of particular interest to economists in cases of uncertainty and risk. For the purpose of this outline, I will stick to the basic model of rational choice that assumes perfect knowledge and information and thus that conditions of certainty hold.⁴⁸

Central to the economic view is the interpretation of desires as stable subjective preferences,⁴⁹ which are the primitive or basic concepts of economics. In order to account for the rationality of preferences, economists introduce the idea of a ranking.⁵⁰ Confronted with a choice between two alternatives and given a limited budget, it is stipulated that an agent *A* chooses that which she prefers more than the alternative. If she would draw up a list, *A* assigns more utility to alternative *X* over alternative *Y* if *X* is higher on the list than *Y*. Such a ranking can be (numerically) formalized via a cardinal or ordinal utility function. For the sake of simplicity and the aims of microeconomics,

⁴⁴ Varian 2014, 3. Varian calls this the optimization principle. I will not follow his terminology.

⁴⁵ See Mazzucato 2018, 62.

⁴⁶ Risjord defines the general concept of instrumental rationality as follows: "If an agent wants to achieve a goal, and believes that doing *A* is the best means of doing so, then an instrumentally rational agent will do *A*." Risjord 2014, 81.

⁴⁷ See Hausman, McPherson, and Satz 2017, 55.

⁴⁸ The arising theory of choice is expected utility theory. See for example Hausman 1992, section 1.4.

⁴⁹ See for example Stigler and Becker 1977.

⁵⁰ Note that a preference, in contrast to desire, is a comparative concept. Consider Rebecca who is thirsty and has a desire to drink Apple Juice to quench her thirst, but no desire for Gatorade. Using the concept of preferences, we would say that Rebecca prefers drinking Apple Juice over Gatorade to quench her thirst. The latter case introduces a comparison between alternatives that is not inherent to desire. See Hausman, McPherson, and Satz 2017, 56.

we can concentrate on the latter.⁵¹ An ordinal utility function displays the list as a mere hierarchy of preferences, e.g., A prefers X to Y or is indifferent between X and Y or prefers Y to X. Nothing is said about how strongly A prefers X over Y.⁵² Thus, when economists speak of maximizing utility, they do not affirm that A receives more utility from X over Y or vice versa. Although the term “utility” found its way to economics via the utilitarianism of Bentham and Mill, microeconomics stripped it of any objective ambitions.⁵³ Ordinal utility in microeconomics refers to no ethical category or particular kind of sensation. All it represents is a purely subjective index of the “preferredness” of the object of choice. Thus, an agent maximizes utility by choosing the most preferred option, i.e., the highest priority on the list given the budget constraint.

Equipped with the idea of a preference ranking, economists hope to make judgments about ends (as desires) without challenging them. The rationality of preferences in ordinal utility theory can be evaluated through a formal assessment of the internal consistency of the ranking over a finite set of options.⁵⁴ In this case, A’s preferences are said to be rational if and only if they are complete and transitive. Here, completeness assumes the comparability of all available options. It is thus possible for A to assign preference relations to all options on the supposed list (including indifference between them). Transitivity prescribes that if A prefers X to Y and Y to Z then A must prefer X to Z. This requirement precludes contradictions in the ranking. Accordingly, A *chooses rationally* between a finite set of options if and only if her preferences are complete and transitive and she prefers the option she chooses the most. This is said to amount to no evaluation of the preferences itself, but only to requirements for the respective ranking.⁵⁵

2.1.2. Demand and Supply

Economics explains and predicts the main phenomena of markets, viz. supply and demand via the rational behavior of economic agents. Rationality is thus taken to be a sufficiently close approximation and description of the actual behavior of individuals.⁵⁶ In order to account for behavioral patterns that give rise to “market demand”, economists employ a formal consumer

⁵¹ See Varian 2014, p. 58.

⁵² In contrast, cardinal utility introduces proportionality and magnitude. The concept is used for example to express that Rebecca likes apples twice as much as bananas. In ordinal utility theory, numerical representations do not indicate anything, but a hierarchy. For a short introduction see e.g., Varian 2014, 57.

⁵³ Mill wrote a popular economic textbook called “Principles of Political Economy” that was only superseded by Marshall’s “Principles of Economics”. Interestingly, the shift from explicitly normative to broadly positive economics is already visible from the titles. See Mill 2008 and Marshall 2013.

⁵⁴ For a critical discussion of this view of rationality as internal consistency see Sen 1988, 13 ff.

⁵⁵ See Hausman 1992, sections 1.1. and 1.2. If the set of options is infinite, a third requirement of continuity is needed to preserve the rationality of preferences. For a longer discussion see also Hausman 2012, section 2.1.

⁵⁶ See Sen 1988, 13 ff.

choice theory.⁵⁷ To explain the optimal choices of consumers, two further “law-like” assumptions are made in addition to rationality: 1) consumerism and 2) marginalism or diminishing marginal rates of substitution.⁵⁸ First, consumerism states that A) agents have preferences regarding commodities or bundles thereof, B) preferences are independent between agents, and C) individuals prefer more commodities to less. All in all, Consumerism formalizes the idea of self-interest on markets, in that it takes preferences to be solely commodity- and self-regarding.⁵⁹ It also abandons an objective measure of value from economic modelling. Rather, self-interested preferences of individuals are selected as the unique motive and standard of consumption.⁶⁰ The second component marginalism expresses the idea that the utility of a commodity X is dependent upon how much X an agent already has. In this view “utility decreases as the amount of a thing that is held or consumed increases.”⁶¹ The diminishing marginal rates of substitution simply assume that for example a “third house” has lesser priority in a preference ranking than the “first house”. Note how marginalism implies that scarcity affects the utility of a good. In general, consumers will assign higher utility to a scarce good. A good that consumers have less of, is more valuable simply due to its scarcity in relation to the satisfaction of their consumption desires. Together, the requirements of rationality, consumerism and marginalism form the axioms of consumer choice.⁶² They can be interpreted “as the solution to a constrained optimization problem faced by a fully informed individual in a virtually institution-free environment.”⁶³ Individual demand for a commodity X is then dependent on the quantity of X, its price, the income of an individual and most importantly consumer preference. Aggregate market demand is simply defined as the sum of individual demand functions.⁶⁴

With respect to the other side of the market, microeconomics models the supply by means of supposed behavioral patterns of firms in relation to production cost. In the manner of the theory of consumer choice, the theory of the firm is based upon three axioms for optimal production choice: 1) (diminishing) marginal productivity, 2) constant returns to scale and 3) profit maximization. First, diminishing marginal productivity is the counterpart to the diminishing marginal rates of substitution in consumer choice theory. Marginalism on the supply side

⁵⁷ My exposition largely follows Hausman 1992.

⁵⁸ See Mazzucato 2018, chapter 2.

⁵⁹ As a result, the view on rationality moves closer to that of self-interest maximization rather than pure internal consistency. It proves however to break with the idea of given ends for it preserves only those that are self- and commodity-regarding. See Sen 1988, 15 f.

⁶⁰ See Mazzucato 2018, 62 f.

⁶¹ Mazzucato 2018, 62.

⁶² See Hausman 1992, section 2.2.

⁶³ Bowles 2004, 8.

⁶⁴ See Bowles 2004, 8.

formalizes the relation of input and output in production such that not every increase in one of the inputs will increase the output by the same rate.⁶⁵ Consider the example of labor as input to production. Other things being equal, not every hour of labor (as representing costs) adds in the same way to the value of a commodity. From a certain point onwards, every further unit only brings diminishing utility to the firm's production function.⁶⁶ The second axiom of constant returns to scale roughly holds that doubling *all inputs* also doubles output.⁶⁷ Last but not least, the neoclassical view affirms that profit maximization defines the action of firms. In fact, it is regarded as their sole aim. Milton Friedman extended this basic tenet and claimed that "there is one and only one social responsibility of business — to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game"⁶⁸. Taken together, it is assumed that "firms or entrepreneurs are rational, and they combine input and output so as to maximize the difference between revenues and costs."⁶⁹ Put differently, producers, like consumers, make optimal choices. Since we are not concerned with the technical difficulties of the neoclassical theory, but its general setup, I will not attempt to discuss the plausibility of these generalizations. What should be noted however is that both demand and supply are thus grounded in (individual) rational choice theory. Microeconomics stipulates "laws" or behavioral patterns that determine the firms as an individual actor in relation to input, output, production and prices.⁷⁰

2.1.3. Marginalism, Equilibrium and Prices

Next, I will take a closer look at the interplay between supply and demand on single markets for example in a classic consumer good like apples. Both consumers (buyers) and producers (sellers) are said to be price-takers on this market, i.e., prices are exogenously given. Neither side enters the market with any power to influence prices for apples. If this particular condition holds on the supply side, markets are defined as purely competitive.⁷¹ In such a situation, prices can be said to reflect the consumer's preference through their willingness to pay. Individual consumption however has a limit given marginalism under circumstance of scarcity. Since utility decreases with

⁶⁵ See Hausman 1992, 42-44.

⁶⁶ See Mazzucato 2018, 63.

⁶⁷ This is not a contradiction to the diminishing marginal productivity for it addresses the increase in all inputs, not just one input.

⁶⁸ Friedman 1970. Here Friedman defends the view that firms act so as to maximize the profits for the shareholders or owners of the firm. His position has come to be known as the Friedman doctrine in the shareholder-/stakeholder debate.

⁶⁹ Hausman, McPherson, and Satz 2019, 70.

⁷⁰ See Hausman, McPherson, and Satz 2019, 70.

⁷¹ "[A] market is purely competitive if each firm assumes that the market price is independent of its own level of output. Thus, in a competitive market, each firm only has to worry about how much output it wants to produce. Whatever it produces can only be sold at one price: the going market price." Varian 2014, 414. Accordingly, a monopoly is suboptimal since a monopolist has the market power to set prices at will.

every apple consumed, there will be a situation where a consumer prefers to keep her money rather than buying the next apple. In a similar fashion, production is constrained by diminishing marginal productivity. Since in general profit does not increase linearly with partial input increase, firms will decide that at a certain point the output of a further apple is suboptimal. It is not worth the increase in utility.⁷² In this simple model, market price is fully determined by supply and demand. If an increase in the price of some apples occurs, it is “either because the demand for [apples] had increased or because the supply [...] had decreased.”⁷³ Thus, market prices, assuming they are given, causally affect the quantities supplied and demanded.⁷⁴

In the simple model, prices determine behavior on markets. However, I have already pointed out in the introduction to this chapter that economists assume that markets themselves can coordinate behavior. So other than asking what happens to production and consumption given some market price, economics might also be interested in saying something about how these prices endogenously adjust through the workings of markets. The crucial question thus becomes: Are demand and supply compatible? The explanation is suggested by equilibrium analysis, which is applied either partially on independent markets or in general for a whole market economy. The partial equilibrium assumption holds that a particular market clears or “is in ‘equilibrium’ when there is no excess demand or (unless the price goes to zero) excess supply.”⁷⁵ It is stipulated that market prices will adapt as long as no one will want to change their consumption and production level. Varian states the equilibrium assumption as follows:

Prices adjust until the amount that people demand of something is equal to the amount that is supplied.⁷⁶

Hence, the equilibrium price reflects the optimal choices of all agents on both sides of the market. Markets are said to be in equilibrium when at some price demand equals supply, i.e., overall diminishing marginal rates of substitution matches overall diminishing marginal productivity. Market equilibrium is attained if there is no incentive to change behavior on either side.

The equilibrium assumption is the crucial feature of neoclassical economics that explains the more general aspect of behavior coordination without adherence to other-regarding preferences.⁷⁷ It is noteworthy that no explicit account of the process of equilibration is given. As a substitute,

⁷² See Mazzucato 2018, 61 f.

⁷³ Samuelson and Nordhaus 2010, 45.

⁷⁴ See Hausman 1992, 48 ff.

⁷⁵ Hausman 1992, 50.

⁷⁶ Varian 2014, 3. Varian calls it the equilibrium principle. Again, I will not follow his terminology.

⁷⁷ It should be noted that some economists are not committed to the general, but only partial equilibrium thesis. See Hausman 1992, 54 ff.

economists allude to competition to illustrate price dynamics. The basic idea is that an excess demand will lead to a competition among interested buyers. As long as someone is willing to pay more, i.e., willing to overbid rival consumers, the price for a commodity rises. This comes to a stop, when no one is willing to pay more. Vice versa an excess supply reduces prices if firms offer goods for less money until they stop to make profit.⁷⁸ General equilibrium theory holds that a state of equilibrium is not only attained on partial markets, but in the whole market economy such that market supply matches market demand. Hence, it is stipulated that there is an overall optimal resource distribution across society. Before addressing this idea in further detail, the next section provides the crucial step towards the assessment of markets. By moving from positive to normative economics, the notion of (social) welfare takes center stage in general equilibrium theory.⁷⁹

2.2. From Positive to Normative Economics

As introduced above, positive economics aspires to predict and explain human behavior as facts. Normative economics on the other hand changes the subject to evaluate economic states of affairs. But how are the two disciplines linked? Again, rational choice and utility theory form the basis to connect the two approaches.⁸⁰ Positive economics states that people's preferences are given but assumes that they are self- and commodity-regarding. Moreover, agents are said to be rational, in that their preference rankings are internally consistent, i.e., transitive and complete (when considering a finite set of options). Given these assumptions and the claim that people also form correct beliefs, economics can sensibly affirm that an agent "will prefer one outcome to another if and only if it is in fact better for her."⁸¹ In other words, individual welfare can be read off preferences.⁸² In this manner, economists arrive at a plausible link from (rational) preference satisfaction to welfare. Paretian Welfare Economics is the normative discipline that deals with this notion of welfare as the satisfaction of (rational) preferences.

In this view, an agent's good is subjective and self-regarding as specified above. Note however that introducing the normative notion of welfare (as utility) does not have a wider influence on the overall positivistic setup. To say that someone is "better off" in economics is not to express that a

⁷⁸ See Hausman 1992, 49 f. A company's profits are simply its "revenues minus cost." Varian 2014, 363.

⁷⁹ For reasons of simplicity, I will not follow Hausman's (uncommon) distinction between microeconomics and equilibrium analysis. See Hausman 1992, 53-56.

⁸⁰ One possible critique of this setup is that rational choice theory as employed in positive economics is already normative for it prescribes a certain form of choice, i.e., optimal choice under utility maximization. For reasons of brevity, I am unable to discuss this charge here. See Hausman 2018.

⁸¹ Hausman, McPherson, and Satz 2019, 73.

⁸² Varian states that "[i]f people are free to choose their actions, it is reasonable to assume that they try to choose things they want rather than things they don't want. Of course, there are exceptions to this general principle, but they typically lie outside the domain of economic behavior." Varian 2014, 3.

person is in fact happier than any other person. It is simply to state that an agent is “better off” in terms of her own formally consistent preference ranking based on her given ends. No further normative stance is taken with respect to the desirability of these ends.⁸³ There is of course a downside to such a radically subjectivist position: It effectively implies that welfare and utility are incomparable as between agents. Since economics is “neutral” with respect to individual ends, as Robbins emphatically demands, there is no established ground in normative judgements. What possible sense could it make to compare them? In following this line of thinking, economics favors an assessment that relies by definition on the *market outcomes as valued by the individual agents themselves*. Since economics employs a deliberately instrumentalist account of rationality, no qualification or classification of preferences with respect to their importance or extravagance is granted.⁸⁴ Before discussing the attractiveness of such a view in the next chapter, I will first introduce the basic tenets of welfare economics that serve as the basis for general equilibrium analysis and the theory of market failure.

2.3. The Theory Market Failure

The notion of Pareto efficiency or optimality⁸⁵ captures the subjectivist approach.⁸⁶ Economists define an economic state as Pareto optimal iff “no-one’s utility can be raised without reducing the utility of someone else.”⁸⁷ Building on this idea, first formalized by the Italian economists Vilfredo Pareto, Gerard Débreu and Kenneth Arrow managed to prove formally the two *Fundamental Theorems of Welfare Economics*.⁸⁸ Arrow and Débreu thus move from the analysis of single markets to apply the equilibrium assumption to the whole economy. To do so, they relate the results of a competitive general equilibrium or rather a market equilibrium under perfect competition with Pareto optimality. These are the Fundamental Welfare Theorems:

- 1) Every competitive general equilibrium is a Pareto optimum.
- 2) Every Pareto optimum can be obtained as a competitive general equilibrium given some distribution of initial endowments to economic agents.⁸⁹

⁸³ See Hausman 1992, 57.

⁸⁴ See Sen 1988, 30 ff. Robbins held that interpersonal utility comparison “necessarily falls outside the scope of any positive science. To state that A’s preference stands above B’s in order of importance is entirely different from stating that A prefers n to m and B prefers n to m in a different order. It involves an element of conventional valuation. Hence it is essentially normative. It has no place in pure science.” Robbins 1932, 123.

⁸⁵ I will use the terms efficiency and optimality interchangeably.

⁸⁶ The Pareto concept requires an agent to have a rational preference ranking. Otherwise, it would not be well-defined. See Hausman 1992, 60.

⁸⁷ Sen 1988, 31. See also Varian 2014, 310 ff.

⁸⁸ See Arrow and Débreu 1954.

⁸⁹ This formulation is taken from Hausman 1992, 62.

The first theorem (FFT) expresses “the invisible hand thesis”, viz. that large-scale market transactions are mutually beneficial without requiring individuals to act other-, but only self-regarding. It formalizes a version of Adam Smith’s idea that self-interested agents contribute more to the overall welfare (here as radically subjective utility) by following only their subjective preferences. It is through unintended consequences that everyone better the situation of everyone exactly by minding his or her own business.⁹⁰ The second theorem (SFT) proves that the relationship also holds in reverse. Every pareto optimal state is also a competitive equilibrium. Economists have argued that this shows how issues of fairness (interpreted solely in terms of market outcomes) do not bear on the market as an adequate mechanism. To see why, note that it is likely that multiple Pareto optima are attainable in an economy. From an economic viewpoint, no particular reason could favor any such optima over another since they are equally desirable regarding social welfare or preference satisfaction. If a given society however perceives one overall outcome as, say, fairer than another, we could (in theory) redistribute the initial distribution of endowments to achieve this alternative optimum.⁹¹ Markets are no obstacle to this, but rather a neutral process. They serve as the means to allocate resources optimally with respect to any desired competitive equilibrium.

Resting upon the proof of the theorems, economists have developed a theory of market failure that is the basis for assessing markets from a distinctly economical view. It seeks to determine when and why markets do not achieve optimal outcomes. Of particular importance to the theory of market failure is the invisible hand theorem which proves that every competitive general equilibrium is a Pareto optimum. In theory, the FFT requires that “the Market” is complete and *externalities* are absent. Since this *prima facie* technical condition is the main resource for economists to diagnose market failures, I will take a closer look at it. In loosening the assumption of independent preferences, economists understand externalities as preferences over the consumption or production of other economic agents. An agent may for example resent a neighbor’s smoking (negative externality), but admire her guitar playing (positive externality). A more pressing societal example is the industrial pollution of ecosystems that turn fertile farms into unproductive waste land. Here, the crucial problem resides in the fact that even though agents have preferences over such “goods”, no markets are available for either guitar playing nor pollution. Since the interaction of producers and consumers falls outside the market scope, the costs and benefits are not fully

⁹⁰ For a closer interpretation of the invisible hand thesis from the viewpoint of general equilibrium theory see Arrow and Hahn 1971, 1 f.

⁹¹ See Hausman 1992, 62 f. and Sen 1988, 34-38.

reflected in the market prices as well as consumption and production choices. They are external. As a result, markets fail to achieve a Pareto optimal outcome because of incompleteness.

A broader theory of market failure gives further economic reasons why markets may fail to allocate resources optimally. Despite externalities, markets can also operate inefficiently if they lack competition as a structural feature, e.g., in the case of a monopoly. If markets are not competitive, monopolists can set prices at will. Thus, prices no longer reflect true consumer preferences.⁹² Another important reason why markets fail is related to the issue of uncertainty, which we have avoided until now. Asymmetric information of either buyer or seller can lead to adverse selection through hidden information (for example on the real quality of products) or moral hazard through hidden action (for example through higher risk-taking).⁹³ Both phenomena lead to inefficient resource allocations relative to a market with full information.⁹⁴

Based on the diagnosis of market failure, economics allows for government action under special circumstances. In respect hereto, it is crucial to realize that the evaluative perspective itself remains the same. Economics seeks to maximize social welfare in terms of market outcomes as valued by the individual agents themselves. In cases where markets cannot be introduced, as it is for example often advised in cases of pollution, microeconomics recommends *government intervention* to the extent that it “can ‘mimic’ the market mechanism to some degree and thereby achieve Pareto efficiency.”⁹⁵ If markets fail, the enforcement of well-defined property rights or the direct influence of prices can account for the unabsorbed costs and benefits of the goods. Through this, the coordinative function of prices is restored.⁹⁶ From an economic perspective and even when markets are not available, the subjective evaluation of outcomes by agents themselves remains the bedrock against which “intervention” is granted.

In sum, Elizabeth Anderson points out that the “theory of market failure is a theory not of what is wrong with markets, but of what goes wrong if markets are not available.”⁹⁷ Markets do not fail because of the peculiarities of particular commodities. Neither do markets themselves harm people or the environment. Rather, the economists’

⁹² See Varian 2014, chapter 25. In order to prove the SFT, general equilibrium theory introduces the further condition that economies of large scale (i.e., natural monopolies) are absent. See also Sen 1988, 34.

⁹³ See Varian 2014, chapter 38. The classic example is the market for lemons in Akerlof 1970.

⁹⁴ See Varian 2014, 745. Here, the problem is not a straightforward case for government action since “intervention” may not outweigh the lost welfare costs caused by asymmetric information.

⁹⁵ Varian 2014, 664.

⁹⁶ See Varian 2014, chapter 35. Moreover, the provision and consumption of public goods like roads or public security is a special form of an externality. The key problem is that the good is non-excludable and hence the level of consumption is not up to single individuals alone. See Varian 2014, chapter 37.

⁹⁷ Anderson 1993, 192.

concern is with the failure of the markets, not with their inappropriateness when successful. [...] Markets fail when reality fails to live up to theoretical requirements. They fail by failing to exhibit the idealized conditions under which they would otherwise succeed.⁹⁸

Consequently, the economic theory of market failure and assessment is a perspective on the (sub)optimality of outcomes as specified by the Pareto criterion. In particular, the theory of market failure does not specify clear limits for markets or market economies. To the contrary, Satz points out that the theory of market failure is inherently imperialistic since its main suggestion is to widen the scope of markets to ensure optimal resource allocation.⁹⁹ The next chapter presents Anderson's and Satz's critique of the microeconomic framework in more detail.

3. The Moral Limits of Markets

The following chapter has two main objectives. First, I will engage more closely with "the Market" framework and illustrate why there is a philosophical interest in overcoming the neoclassical picture. To achieve this, the subsections of section 3.1. concentrate on the notion of government intervention and its connection to efficiency, liberty and politics. My second objective is to present three substantial alternatives that were conceptualized against the backdrop or in direct disagreement with "the Market" and the theory of market failure as introduced above. The selection of these particular perspectives is due to their relevance in the debate concerning the (moral) limits of markets. I will introduce the three perspectives in a general fashion, viz. as contributions to a better understanding of the concept of markets and their limits.

The three selected critical perspective all share the rejection of the universality as well as the supposed neutrality of the market model. In other words, all authors stress that particular markets have limits. They differ however in their focus of study and the resulting methodology. Section 3.2. introduces Samuel Bowles's topology of markets. His work provides grounds for the regulation of markets if *exchanges* are either contested due to contractual incompleteness or constitutive, in that they directly shape human beings and their personalities. The other two approaches develop a distinctly moral critique of actual markets. Section 3.3. introduces commodification theory which addresses the *moral value of the exchanged goods*. The worry of authors such as Michael Sandel and Elizabeth Anderson is not so much grounded in issues of fairness, but in the possible corruption of valuable goods and the crowding-out of non-market norms by market expansion. To close the chapter, section 3.4. presents Debra Satz's account of noxious markets which discusses how particular markets can affect the *moral and political standing of the exchanging parties*. In her view, the

⁹⁸ Lukes 2005, 300 f.

⁹⁹ See Satz 2010, 92.

paradigmatic market values of optimality and liberty need to be contrasted with an analysis of harm and subordination.

3.1. Government Intervention Reexamined

With the basic concepts of normative economic theory at hand, I will move forward to examine the normative basis upon which economics rests. One helpful way to do so is to shed more light on the notion of *government intervention*. The discussion proceeds in three steps. Section 3.1.1. will discuss the moral appeal of Pareto optimality as an ideal social state. The following section 3.1.2. presents a deeper analysis of the notion of equilibrium and economic self-regulation as in relation to the promotion of negative and positive liberty. Finally, section 3.1.3. reevaluates the plausibility of conceptualizing markets as apolitical.

3.1.1. Efficiency

As introduced in the first chapter, the market framework provides an exclusively economic approach to any market per se: All markets are assessed in the same manner, i.e., in terms of their outcomes as valued by the individual agents themselves. Therefore, the satisfaction of individual rational preferences establishes the normative foundation of economics to judge a given resource distribution. In Paretian Welfare Economics, markets are said to work optimally since no one can be made better off without worsening the situation of someone else. Therefore, government intervention is to be understood as an exceptional step that stands in need of justification. By implication of the FFT and SFT, government action is only granted when markets fail to achieve optimal results.¹⁰⁰ One case of market failure arises from externalities. Here, economic agents have preferences over the production of goods by other agents as it happens in cases of pollution. The standard economic response to market failure is to widen the scope of markets so as to reabsorb the previously unacknowledged costs back into the market system. In this way, agents are able to express their preferences through consumption. The market system can then again function as a decentralized mechanism for behavior coordination through price signals.

Despite the fact that economics is a positive science, section 2.2. has sketched how economists move from positive to normative economics by reading welfare off preference satisfaction. By endorsing Paretian Welfare Economics as its central normative reference point, economics establishes “the Market” as a proper model to inform public policy decisions and the general political debate. In the economic picture, optimality (or efficiency) is considered the most attractive feature of markets since it is the state where social utility as the sum of everyone’s preferences is

¹⁰⁰ Economists recognize that markets differ structurally with respect to their degree of competition.

maximized. It is a situation where it is impossible to improve on the welfare of anyone without negatively affecting another person.¹⁰¹ But how plausible is this notion of optimality as the *best social state*? To put it slightly different, what is the moral appeal of efficient markets in terms of fairness?

As reviewed in chapter two, the economic case for normative objectivity is grounded in its withdrawal from judging individual ends. The key assumption of “the Market” is that “improvement is to be measured in the space of individual preferences.”¹⁰² Paretian Welfare Economics extends this thesis and identifies individual welfare or well-being with the satisfaction of preferences. In order to measure purely economic improvement, “the Market” accepts preferences as exogenously given. As a result, economics does not qualify the relevance of satisfying one rather than another preference.¹⁰³ From a normative perspective, this leaves economics with a considerable conceptual gap since all individual preferences appear as equally worthy of satisfaction.¹⁰⁴ People employ a wide range of preferences that may be ordinary, related to basic needs or simply extravagant. Yet, by assessing a social state through the Pareto criterion, issues of liberty, fairness, equality or minimum living standards do not bear on the resource allocation. As Amartya Sen famously put it:

An economy can be optimal [...] even when some people are rolling in luxury and others are near starvation as long as the starvers cannot be made better off without cutting into the pleasures of the rich.¹⁰⁵

In other words, Pareto optimality may be a sufficient, but not a necessary condition to accept a situation as ideal from a societal standpoint.¹⁰⁶ The microeconomic omission of preference qualification constitutes neither a neutral nor impartial standpoint. Rather, it reflects a naive equalization of all preferences that exist in the economy.¹⁰⁷ Even if a social state is Pareto optimal, this does not make it ideal in a morally relevant sense. If income transfers from richer to poorer parts of society satisfy urgent needs, we cannot easily discharge this argument by claiming that

¹⁰¹ I do not consider the alternative of Kaldor-Hicks-Efficiency. Since the concept does not move substantially beyond Paretian considerations, similar counterarguments will hold. See e.g., Satz 2010, 19 ff.

¹⁰² Satz 2010, 20. In fact, economists are (sometimes deliberately) ambiguous in their usage of the term preference. The equation of subjective preference satisfaction with welfare is only one possible interpretation. For a discussion of various meanings see Hausman 2012.

¹⁰³ See Satz 2010, 21 f.

¹⁰⁴ Sen points out that such a picture is tantamount to a radically subjectivist stance that effectively forecloses any claim that individuals could make on one another. See Sen 1988, 30 f.

¹⁰⁵ Sen 1984, 22. For a similar point of Karl Polanyi see Dale 2010, 22.

¹⁰⁶ Sen shows that the Pareto criterion conflicts with minimal liberal values. See Sen 1970. For a more extensive discussion see Sen 1988, 31-40.

¹⁰⁷ See also Sandel 2012, 88 f. Even Friedman concedes that the market is not fair in terms of desert or merit. See Friedman 2002, 163 f.

taxing the wealthy leaves them “worse off”. Government intervention with market outcomes may be granted in such cases since a Pareto efficient resource allocation does not by itself secure an ideal social state from a normative perspective.

3.1.2. Liberty and Voluntariness

So far, I have portrayed the economical objection to government intervention on grounds of inefficiency. I have also discussed why this approach has considerable weaknesses. There is however another major reason that leads economists to favor “the Market” as the dominant means for resource distribution. The following section deals with the self-regulatory potential of markets and its connection to liberty. I will explore how economists like Milton Friedman conceive of “the Market” as promoting negative liberty. Additionally, I will discuss a possible connection of positive liberty, choice and the notion of “voluntary exchange”.

In the following, I understand negative liberty as the absence of constraints or obstacles on the action of agents. As an external view on agency, it deals only with possible interferences with agents and does not provide a specific theory of autonomous action.¹⁰⁸ Other things being equal, theorists of negative liberty would argue that a person enjoys more freedom than another if she has more money since she faces lesser constraints. In contrast, positive liberty alludes explicitly to the presence of agential control. It is concerned with the internal workings of agency. Hence, theorists of positive liberty would not readily jump to the conclusion that a richer person has by implication more freedom. They would rather question what effect it has on her agential capacities.¹⁰⁹

To see why negative liberty is promoted by “the Market” – and reduced by government intervention – let me first turn to the notions of equilibrium and self-regulation. Even though the additional value of general equilibrium theory is often portrayed as largely theoretical,¹¹⁰ the existence proof of an optimal general equilibrium state is more than a mere conceptual elaboration on the coherence of economic “laws”.¹¹¹ It is the proof that the economic intuition of the invisible hand, i.e., the supposed self-regulatory potential of “the Market”, can be affirmed. As a result, it can serve not only as an ideal in regard to optimality, but more importantly as an ideal of negative liberty.¹¹² Its (historical) attraction lies in the fact that a decentralized economy or “the Free Market”

¹⁰⁸ Since the economic theory of rational choice does not concern the rational choice of ends, but assumes them as givens, I do not consider it as an internal view of autonomous agency.

¹⁰⁹ I will use the words freedom and liberty interchangeably. See Carter 2019.

¹¹⁰ See Arrow and Hahn 1971, vi ff.

¹¹¹ See Hausman 1992, 100.

¹¹² Unfortunately, there is no room to discuss the work of Adam Smith. Recent scholarship has shed more light on his “system of natural liberties” and the relation of his moral and political philosophy. An excellent account can be found in Herzog 2013.

can work mutually beneficial as “emerging from spontaneous interaction between individuals”¹¹³ and *in the absence of a central planning authority*.¹¹⁴ In turn, necessary behavior coordination can be ensured through the price signals on markets alone.¹¹⁵ The need for government becomes minimal since the market mechanism renders political agreement on the use of resources obsolete.¹¹⁶ Therefore, “the Market” secures the negative liberty of individuals in reducing the need for government planning. In this sense, it creates a *sphere of negative liberty* for individuals and firms to choose consumption and production “freely” and to exit market relationships if they prefer so.¹¹⁷

Beyond that, economists also allude to the worry that governments could interfere with positive liberty when regulating markets. In such a picture, intervention is even more problematic since it directly affects autonomous choices of individuals and the legitimacy of consensual transactions. In general, the notion of voluntariness and consent are closely interrelated. Hurd, for example, argues that consent is an ability that stems from the “powers of personhood”. According to her, the intention of an agent functions as an act of will legitimizing the purposes of another. To recognize this ability is to respect the autonomy of a moral agent as the pivotal normative source to regulate and judge the behavior of others with which one interacts.¹¹⁸ If economic choices were voluntary as in autonomous, it would thus be wrong for governments to interfere with them. That the economic view on markets suggests such an interpretation becomes readily apparent in the widespread endorsement of the notion of “voluntary exchange”,¹¹⁹ which is taken by Milton Friedman as the dominant principle of organization in a market economy.¹²⁰ A liberal society, as he conceived of it, transforms dependent people into “a collection of individuals and the groups they voluntarily form.”¹²¹ Despite the frequent allusion to the concept of voluntariness, the question remains how to conceive of government intervention with market outcomes as interference with positive liberty *from within the market framework*.

Can economics recapture such a thick notion of choice and positive liberty with its relatively simple set of conceptual resources? As introduced above, a notion of positive liberty is an internal view on agency, i.e., it provides an account of agential control. Hurd’s notion of consent is an

¹¹³ The term “individuals” covers both, consumers and firms so conceived. See Carvalho and Rodrigues 2012, 272.

¹¹⁴ For more on the historical attraction of the Smithean view of markets see Satz 2010, 41 ff.

¹¹⁵ See Friedman and Friedman 1990, 34-48.

¹¹⁶ Such a freestanding view of markets contrasts freedom of choice with a coercive state that has by definition no assigned role in the framework. See Friedman 1970.

¹¹⁷ See Peter 2004, 2. See also Satz 2019.

¹¹⁸ Hurd 1996, 123 f.

¹¹⁹ See again Hausman 1992, 100.

¹²⁰ See Friedman and Friedman 1990, 31 f.

¹²¹ Friedman 1970. See also Friedman 2002, 12 f.

example of an account of positive liberty that relies centrally on the will to explain why an act may be legitimate or not. Neoclassical economics on the other hand, is silent as to the rationality of ends or to any notion of the will as Hurd presents it. Friedman's argumentative strategy tries to retain the basic concepts of microeconomics. He approaches voluntary choice through the lens of self-interest as the only accepted motive from within the market framework. As a result, the best explanation that he offers for the title "voluntary" is that market exchange is mutually beneficial and therefore consensual. Accordingly, a choice qualifies as voluntary if it is in the individual's self-interest broadly conceived.¹²² Put negatively, if there is no contradiction with self-interest, individual choice is voluntary. The problem however remains that self-interest has little bearing on any notion of positive liberty since it is only one among many motives. In particular, the notion of self-interest does not clarify by itself the internal workings of agency or the powers of personhood as Hurd has it.

Through the lack of qualification, the notion of "voluntariness" is left unexplained and the label turns out as redundant. In fact, Friedman's argumentative strategy, viz. to explain a voluntary choice through self-interest, deflates the normative force that he wants to recover in order to account for the legitimacy of economic transactions. Rather than elevating self-interested choice to voluntary exchange, he reduces voluntariness to mere self-interest. Accordingly, the worry over governmental intrusion upon autonomous choice waters down to a concern with the intervention in self-interested choice. Since economics cannot clarify why and how self-interest secures positive liberty, economists can hardly claim that any consumption choice, in virtue of being an autonomous choice, confers normative legitimacy on economic transactions. Without adding further normative assumptions, government intervention on markets can hardly be claimed to be interfering with positive liberty. The lack of providing a clear picture of the internal workings of full agency leaves the market framework ill-equipped to tackle this question from a normative perspective. Since economics takes no stance on what freedom really amounts to, it cannot support the proposition that governments intervene with voluntary transaction from within the market framework.

Fabienne Peter provides a slightly different analysis of the relation of individual choice and consent as to the *legitimacy of institutions* that moves us further in the discussion of negative and positive liberty as well as the place of government in economic relations. Her main target is again Friedman's view, who perceives behavior coordination through "the Market" as normatively

¹²² See Friedman and Friedman 1990, 51 f.

superior to state action since it does not require coercive force.¹²³ Peter seeks to rebut the silent economic assumption that markets are freestanding or *apolitical* spheres such that economic transactions automatically legitimize themselves without the need for government. According to her, the crucial problem is that the economic notion of choice as between alternatives is not tantamount to consent to that transaction. Economics therefore silently “elevates the freedom to choose between given alternatives to freedom *tout court* and thus elevates choices to consent.”¹²⁴ A problem however arises since a choice between alternatives says nothing whatsoever about the quality of the options that presented themselves. To choose one object over the other does not always establish that it was a voluntary choice which transfers moral legitimacy to that transaction.¹²⁵ It could very well be borne out of desperation or need. As a result, consent “cannot be read off preferences among available alternatives”¹²⁶. Instead, Peter argues that the moral force of consent directs attention to the *social structures of constraints* on choice.¹²⁷ In her Rawlsian understanding of consent, legitimacy is secured (and coercion absent) if and only if the background conditions of choices are themselves justified. In this respect, “the Market” is not apolitical or free from coercion since a choice between arbitrary alternatives can have no legitimizing force by itself.¹²⁸ To inquire the legitimacy of market transactions, a deeper look at the institutional arrangements of such choices is required. But in assuming a choice-based notion of consent, neoclassical economics opens a false dichotomy between state and market. The notion of government intervention is the striking example of this picture for it silently assumes that governments would inevitably interfere with legitimate transactions. The only problem is that the legitimacy of market choices is necessarily dependent upon their political institutionalization. Markets are no normatively freestanding sphere separate from political and societal concern.

3.1.3. The Political Nature of Markets

This diagnosis leaves us with the last question of this section: What is the relation between government and markets if they are no apolitical, i.e., separate, spheres as economics suggests? In order to investigate the political nature of the market in more detail, I will mainly recapture the

¹²³ See Friedman 2002, 13. In addition, Peter quotes Paul Samuelson who holds that “[t]he price system is, and ought to be, a method of coercion.” (Samuelson 1966, 1415) In Samuelson’s view, the price system is in this respect no different than the state in restricting individual choice. See Peter 2004, 1 f.

¹²⁴ Emphasis in the original. Peter 2004, 7.

¹²⁵ See Peter 2004, 10.

¹²⁶ Peter 2004, 14.

¹²⁷ See Peter 2004, 4 and 13. Peter borrows the term “social structures of constraints” from Nancy Folbre, who argues that analyzing the context within which a choice is made, is key to understand why choices might be limited. See Folbre 1994.

¹²⁸ See Peter 2004, 13.

broader point that markets need to be analyzed for what they are, viz. social and political institutions rather than the spontaneous interaction of consenting agents.¹²⁹ Instead of conceiving of governments as intervening with markets, regulation seems to be the condition of possibility for their continued existence. However, neoclassical economics does not refer to “the Market” as an institution nor to the state as an economic actor.¹³⁰ With respect hereto, Hodgson argues that economics overlooks that “mutual individual consent itself require[s] a legislative and institutional framework to *legitimize*, scrutinize and protect individual property rights.”¹³¹ This is even more true for organized large-scale market systems, such as a general competitive market system that is the object of study in General Equilibrium Theory. To get markets beyond simple instances of exchange, important institutional preconditions need to be in place. Markets and exchanges are no less than active social constructions that require political legitimacy.¹³²

Taken together, a political understanding of the market stresses the fact that market values are necessarily the product of both deliberate political action as well as social norms. Debra Satz for example shows that achieving efficiency and liberty through markets requires a government to set up an appropriate platform that secures property rights, the flow of free information, the monitoring of competition as well as the trustworthiness of the exchanging parties.¹³³ Especially property rights, central to laissez-faire theorists like Friedman,

are the products of *laws and conventions* that back them up and enforce them. [...] An important implication of this observation is that the free market is necessarily based on the coercive power of property rules, government regulations, and social conventions.¹³⁴

Accordingly, the idea that “the Market” can build a separate self-regulating sphere because it is free from a central planning authority is far from true.¹³⁵ In reality, governments always “intervene” with the market. They necessarily create and shape markets if they are to exist at all. Even though in theory, market prices alone are said to coordinate the behavior of individuals, they would only do so if a government enabled such a system. It would have no legitimacy by itself.

¹²⁹ For a critical view of the embeddedness of markets see Polanyi 1944.

¹³⁰ See McMillan 2002, chapter 1.

¹³¹ Emphasis added. Hodgson 2010, 255.

¹³² See Mazzucato 2018, 36. For a view that makes a similar point by the use of the Polanyian notion of embeddedness of markets see Carvalho and Rodrigues 2012, 268 f.

¹³³ Despite this, markets require a legal and banking system. See Satz 2010, 26-31.

¹³⁴ Emphasis added. Satz 2010, 27. Satz quotes Murphy and Nagel who make a similar point in their discussion of property as conventional. Since they are mainly concentrated on distributive and tax justice, we will avoid this discussion. For a short overview see Murphy and Nagel 2002, 174 f.

¹³⁵ See also Herzog 2017.

My overall objective for the remainder of this section is to focus on accounts that assess the up- and downsides of particular markets. I will thus avoid to address the appropriate scope and distributive justice of the market system as a whole. This is sensible since the objects of study are the moral limits of personal data markets, not capitalism as such.¹³⁶ To put it in the framework of Peter, my concern will be with a particular market as the relevant social structures. Accordingly, I will discuss the appropriate regulation of markets so as to achieve legitimate transactions. On the one hand, this will mean, as Peter herself stresses, that transactions need to be considered against the appropriateness of their background conditions. In addition, I will explore the thought that some goods may simply be no legitimate objects of exchange.¹³⁷ To achieve my aim and clarify the underlying understanding of actual markets, I will follow Lukes in his definition of markets as

[i]nstitutions involving regular and frequent exchange, buying and selling, that is, trading with enforceable and enforced contracts that is, unlike gift-giving conditional upon future payment.¹³⁸

Beyond its recognition of markets as institutions, this definition is adequate for further reasons. First, it allows payment to be non-monetary, which is often the case on personal data markets. Secondly, the definition avoids associating market exchange exclusively with private property and capitalist profit seeking. Moreover, market exchange is here separated from the aspect of voluntariness.¹³⁹ This is advantageous to preclude the false impression that voluntariness is prior to the setup of markets and therefore the independent normative basis for market exchange itself. Having established the political and inherently normative nature of markets, I will now engage with the three critical perspectives that move beyond the economic theory of market failure.

3.2. Market Heterogeneity

The next section is devoted to address the neoclassical view of markets as homogenous, i.e., structurally equivalent. I will present the work of Samuel Bowles, economist at Santa Fe Institute, to review the proposition that “the Market” can serve as an ideal theory for all markets. The objective is to show that markets are in fact heterogeneous, i.e., exhibit differing characteristics in a normatively relevant sense, and hence, that the market framework applies only in a few cases. This

¹³⁶ Unfortunately, I will also have to avoid rights-based libertarianism that gives a deeper philosophical account why the interference with “capitalist acts between consenting adults” is a violation of freedom. See Nozick 1974, 163.

¹³⁷ Thus, legitimate market transactions may still do harm even if they arise without coercion from fair background conditions. See for example Sandel 1998, 94.

¹³⁸ See Lukes 2005, 299.

¹³⁹ Satz retains this aspect of economic theory. She defines markets as “institutions in which exchanges take place between parties who *voluntarily* undertake them.” Emphasis added. See Satz 2010, 15.

will give reason to reconsider the importance and adequacy of efficiency analysis for particular markets. Bowles argues, for example, that the notion of Pareto optimality as well as the theory of market failure are (gradually) undermined on markets which constitutively involve the formation and change of preferences.

In a series of papers, Bowles argues that the neoclassical view remains incomplete from a normative viewpoint more broadly conceived. In a similar fashion like Amartya Sen, he argues that

[e]ven if market allocations did yield Pareto-optimal results, and even if the resulting income distribution was thought to be fair (two very big “ifs”), the market would still fail if it supported an undemocratic structure of power or if it rewarded, and hence fostered, greed, opportunism, political passivity, and indifference toward others.¹⁴⁰

His worry is that some markets also have political and cultural effects that remain unaccounted for in efficiency analysis. Since the regulation and setup of markets requires considering all possible impacts on both individuals and society, Paretian Welfare Economics inadequately assesses all markets through the same standard. In cases where political or cultural effects come to the foreground, the criterion of optimality alone is inconclusive as to which institutions serve the allocation of goods and services best. What is centrally missing from the theory of market failure is, according to Bowles, the recognition of the heterogeneity of markets. In his view, some markets are different than the standard textbook model, in that they are also cultural institutions when they actively shape human development (as well as preferences) and political institutions if they imply a specific power structure.¹⁴¹ By extending the assessment of markets to include non-economic considerations, Bowles aims to provide a more nuanced basis for the (social) regulation of markets. In the following, I will recapture his economic analysis of these dimensions. His resulting topology of markets establishes how markets are heterogenous and evaluated by different standards.

Bowles develops his typology of markets based on a twofold analysis of its central activity, namely exchange. On the one hand, he argues that markets give a specific cultural frame to exchanges that needs to be accounted for. In his words, markets provide “social settings that foster specific types of personal development and penalize others.” Markets are here conceived of as favoring certain behaviors as well as perpetuating social norms which in turn lead to more effective exchange relations. A priori, this may be for the better or worse. What is of special importance to any analysis however is to account for *constitutive exchanges* where the parties are endogenous to the exchange. This is another way of saying that market participants and their personalities are by definition

¹⁴⁰ Bowles 1991, 11.

¹⁴¹ See Bowles 1991, 11 ff.

constituted through the specific exchange relations. To put it in economic terminology, their preference rankings are not given, but generated within a market.¹⁴² The paradigm example of such a constitutive exchange is the labor market since it has a direct bearing on the development of our abilities, but also on more general norms in society. When assessing this particular market, it needs to be considered that the organization and especially division of labor shapes the very personalities and lives that people lead.¹⁴³

On top of that, the labor market is a special case, since it can serve as a proper example for the political dimension of markets as well. Despite its constitutive character, labor markets also involve a *contested exchange*. Not only are people constituted by the exchange, they are also vulnerable to power asymmetries.¹⁴⁴ According to Bowles, the main problem here is that the commodity exchanged, i.e., labor, cannot be fully formulated since it is too “complex or difficult to monitor that comprehensive contracts are not feasible or enforceable.”¹⁴⁵ Rather, the enforcement of claims remains endogenous to the exchange due to incomplete contracts. The exchange necessarily lays outside the scope of contractual agreement. This is not only true for labor markets, but for all exchanges where the terms cannot be fully specified. As a result, the involved agents likely face the problem of power asymmetry.¹⁴⁶ Here, less political power resides with the party that lacks proper (or fewer) “exit” options. Since they are easily replace, the lesser options leave this party in a worse situation to negotiate a good deal.¹⁴⁷ The central reason to account for this dimension is that markets in labor or credit give rise to such power relations “even if the exchange process is fully informed, uncoerced, and perfectly competitive in the neoclassical sense of free entry and a multitude of buyers and sellers.”¹⁴⁸ The efficiency analysis of markets thus neglects crucial characteristics relevant for an overall evaluation and remains incomplete.

Bowles presents the following table of market assessment with paradigm examples in the corresponding columns:

¹⁴² See Bowles 1991, 11 f.

¹⁴³ Adam Smith advanced a similar view of the constitutive effects of labor markets. See Satz 2010, 44 ff.

¹⁴⁴ See Bowles 1991, 15.

¹⁴⁵ Bowles and Gintis 1990, 167.

¹⁴⁶ See Bowles and Gintis 1990, 167.

¹⁴⁷ Competition in labor markets is unhelpful insofar as employers can artificially induce power relations. Bowles argues that this is the case in all non-clearing competitive equilibria. See Bowles 1991, 14.

¹⁴⁸ Bowles 1991, 14.

Exchanging Parties:	Claim Enforcement:	
	<i>Exogenous</i>	<i>Endogenous</i>
<i>Exogenous</i>	groceries	credit
<i>Endogenous</i>	childcare; real estate	labor

Table 1. *Topology of markets. Adapted from Bowles 1991, 14.*

We can identify “the Market”, or Walrasian market as Bowles terms it, in the upper left corner of figure 1. The paradigm example of a grocery market illustrates an institutional market exchange that has no cultural or political impact. Neither power asymmetries nor constitutive involvements have any relevance for their interaction. Individuals can freely choose to exchange or not, and their exchange relation has no effects on third parties. This is why a Walrasian market clears when supply equals demand for consumers can easily substitute producers or goods. They are in no way bound to a particular exchanging party. Without considering other issues,¹⁴⁹ the satisfaction of individual preferences can serve as a good indication of societal interest in such market settings. In contrast however, labor, credit or real estate markets differ structurally since they involve either a constitutive or contested exchange or both.

Consider the example of contested exchanges. According to Bowles, efficiency analysis remains factually incomplete for the assessment of credit markets since it overlooks power structures due to incomplete contracts and resulting agential dilemmas.¹⁵⁰ I will recapture a similar line of argument in chapter five to show how the specific characteristics of personal data give rise to contractual incompleteness. Since personal data transactions are both complex as well as difficult to monitor, they involve relevant power asymmetries in the sense specified above.

To conclude this section, I will review the nature of constitutive exchanges and its problems for the theory of market failure a little more closely. The investigation of these types of exchanges is not only relevant for its undoubtedly important societal consequences, but also for its direct erosion of the normative foundation of efficiency analysis itself. Other than contested exchanges that arise from more technical difficulties, constitutive exchanges directly address the way individual preferences are shaped and cultivated. Note that in the standard economic case, preferences are in contrast conceived of as given and exogenous. This assumption in effect constitutes the supposed neutral basis for evaluating market outcomes. But as Bowles points out,

¹⁴⁹ Environmentalists could refer to the efficiency analysis as anthropocentric for it overlooks the valuations of other creatures and/or an intrinsic value in nature that should be considered. See Lukes 2005, 299.

¹⁵⁰ See Bowles 1991, 15.

where markets shape the capacities, values, and desires of the exchanging parties the standard normative case supporting market allocation (that it results in a Pareto-efficient outcome) collapses [...].¹⁵¹

The collapse arises out of circularity since the preferences that are supposed to justify the outcomes originate from within the market.¹⁵² Of course, as becomes apparent when considering the example of a real estate market, the constitutive character of exchanges can vary in degree and efficiency considerations are not always off the point. However, constitutive exchanges undermine the economic case against government intervention to a considerable degree. Bowles thus effectively circumvents the question as to whether optimality is normatively appealing by showing that the analysis does not apply to markets involving constitutive exchanges. Beyond that, Bowles and Gintis press the point that any relationship that plays into the formation or change of individual preferences raises public concern. When preferences are endogenous to market exchange, it seems reasonable that governments evaluate their workings.¹⁵³ The topology of markets is thus an apt instrument to investigate whether personal data markets exhibit this characteristic. It should come as no surprise to foreshadow that they in fact do.

3.3. Commodification Theory

The following section will shift the attention from particular exchanges to the goods exchanged on markets. The central question is whether some goods are in fact morally inappropriate objects of market exchange. In respect hereto, the notion of commodification is often invoked as a response to the imperialism of “the market” in non-market areas of society. Note how this imperialism is inherent to the theory of market failure since the best economic response to failing markets are more, not less markets. In this respect, commodification can be understood as the process where the intrinsic value of a good is degraded if exchanged on markets. Commodification theorists thus engage with the question whether it is morally objectionable in and of itself to treat a good as marketable (or not).¹⁵⁴

In order to get a first idea of the concept, it is helpful to start with the notion of *fictional commodities* that served as the inspiration for many modern approaches to commodification.¹⁵⁵ In Karl Polanyi’s

¹⁵¹ Bowles 1991, 15.

¹⁵² See also Satz 2010, 49 Footnote 29.

¹⁵³ See Bowles 1998, 105.

¹⁵⁴ See Sandel 1998, 94 ff. Commodification theorists are thus not concerned to establish why optimality is an inadequate standard to assess all markets, as Bowles did. The particular moral wrong of commodification is also distinct from coercion or unfairness, of which we will hear more about in the next section.

¹⁵⁵ It should not go unnoted that the central inspiration, also in Polanyi, is Marxian and based on the concept of commodity fetishism. See Marx 2018.

view, the establishment of a self-regulating market economy is dependent upon the existence of a market society. The market economy is here understood as a self-regulating system solely governed by market prices.¹⁵⁶ The key feature of such an economic organization is that it requires a complete reversal of societal organization as such. “Instead of the economy being embedded in social relations, social relations are embedded in the economic system.”¹⁵⁷ For this system to function properly, i.e., to express prices correctly, these relations are remade in the image of “the Market”. Polanyi argues that the defining example of this process is that the market economy relies on the commodification of land, labor and credit.

In his historical exposition of “The Great Transformation” the de-regulation of production factors constitutes a considerable break with all other previous economic traditions.¹⁵⁸ To illustrate why this is the case, Polanyi proposes an empirical definition of commodities “as objects produced for sale on the market”¹⁵⁹. Accordingly, a good can be properly described as commodified if it was assigned the commodity status without being produced for sale. As a result, the fiction of a commodity is created. In looking through the lens of commodification, Polanyi argues that all three production factors of land, labor and credit are in fact not commodities:

Labor is only another name for a human activity which goes with life itself, which in its turn is not produced for sale, but for entirely different reasons, [...]; land is only another name for nature, which is not produced by man; actual money, finally, is merely a token of purchasing power which, as a rule, is not produced at all, but comes into being through the mechanism of banking or state finance. None of them is produced for sale. The commodity description of labor, land, and money is entirely fictitious.¹⁶⁰

In this way, Polanyi tries to show how social relations and nature are said to be instrumentalized and subordinated to the workings of the market mechanism. They are no longer what they *previously* represented. Rather, their value is superimposed by “the Market”. As a result, the “substance of the society”¹⁶¹ becomes the adjunct of and appropriated to markets, whereas their real value is misrepresented by the concept of a commodity. The strong picture that arises in Polanyi is due to his observation that even the most important markets in productive factors are in fact fictitious. Not all theorists that succeeded him, endorsed this full critique. His empirical definition however

¹⁵⁶ Since such an economy is effectively equivalent to the framework introduced in chapter one, I will use the terms “the Market” and market economy interchangeably in this section. See Polanyi 2001, 45.

¹⁵⁷ Polanyi 2001, 60.

¹⁵⁸ See Polanyi 2001, 72 ff.

¹⁵⁹ Polanyi 2001, 75.

¹⁶⁰ Polanyi 2001, 74.

¹⁶¹ Polanyi 2001, 74.

is a good starting point to see wherein the charge against economic imperialism is grounded, viz. in the relation between a supposed prior value of a good and its transformation through market norms. But how to determine the true value of a good? In what way are market norms somehow incompatible with it?

During the 20th century and up until today, so called value pluralists have elaborated extensively on this particular question. As expected, they have relied on differing concepts to trace the intrinsic value of goods. Michael Walzer for example defends a view on justice as complex equality, where goods should be distributed through different mechanisms in different spheres on the basis of their *shared social meaning*. His underlying view of society builds on the idea of spheres that are structured by diverging norms.¹⁶² Elizabeth Anderson improves upon this picture of sphere differentiation. She argues that we need not rely on contestable social meanings, but can rather identify purely *economic goods*. In striking similarity to Polanyi's account, only actual commodities are perceived to be appropriate to market norms.¹⁶³ In a similar vein, Michael Sandel argues that the "*character* of the particular good"¹⁶⁴ is corrupted by treating it as a marketable commodity. Without invoking a notion of societal spheres or pure economic good, Sandel holds that the character of a good can be described and assessed through a moral conception on a case-by-case basis.

Independently from their philosophical commitments to the origin of value, all four authors affirm the common core of moral commodification theory. In their view, markets are not neutral tools, but can have degrading effects on the non-market value of goods. According to Sandel, "markets don't only allocate goods; they also express and promote certain attitudes toward the goods being exchanged."¹⁶⁵ His particular worry is that commodification not only corrupts, but ultimately crowds out favorable attitudes and norms that people have towards certain goods.¹⁶⁶ Like Anderson, he thinks that by selling and buying such things on a market, we fail to value them in the appropriate way.¹⁶⁷

Since there is no place to review and compare the larger theoretical frameworks, I will proceed by reconstructing a version of the commodification argument that suits the purposes of this thesis.¹⁶⁸ With respect hereto, Sandel's view is the most promising. He argues that we can build on

¹⁶² See Walzer 1983, chapter 1 and 4.

¹⁶³ See Anderson 1993, 143 ff.

¹⁶⁴ Emphasis added. Sandel 1998, 104.

¹⁶⁵ Sandel 2012, 9.

¹⁶⁶ See Sandel 2012, 110 f.

¹⁶⁷ See also Anderson 1993, 144 ff. Sandel's worry is that Anderson's approach might collapse into essentialism or conventionalism. See Sandel 107.

¹⁶⁸ For a critique of the sphere-theoretic view which she pejoratively labels compartmentalization see especially Radin 1996 chapter 4.

specific moral conceptions of a good to arrive at a meaningful notion of commodification on a case-by-case basis. For the remainder of this section, I will introduce the two basic claims that market norms can diminish or even dissolve the value of a good. I will call these claims the complete and incomplete corruption claim respectively. I define a commodity as the object of buying and selling on an institutionalized market as specified in section 3.1.3. The process of commodification is defined as the assignment of the commodity status to a good.¹⁶⁹ To commodify a good is to treat it as appropriate for market transaction.¹⁷⁰

The *corruption claim* alludes to the incompatibility of market exchange and the moral conception of a good. It comes in two versions:

Complete corruption: Commodifying a good is conceptually incompatible with its moral value.

Incomplete corruption: Commodifying a good is in conceptual tension with its moral value.

In cases of complete corruption, market exchange fully dissolves the value of a good. To illustrate this, consider the example of a market in MVP awards. Trading honoring-rewards seems to be incompatible with why they are awarded in the first place. This is because their value would perish if bought instead of rightly earned.¹⁷¹ A more realistic and relevant case is the moral wrong of slavery. Sandel argues that slave trades are morally objectionable since the buying and selling of humans stands in immediate conflict to treating them as ends in themselves. Markets in human slaves should be prohibited since the value of human beings as worthy of dignity is irreconcilable with treating them as means and instruments for profit. Accordingly, we have a moral reason to block such exchanges.¹⁷²

In a case of incomplete corruption, the moral conception of the good stands in tension with assigning commodity status to it. As Margaret Radin has put it, we can “recognize a continuum reflecting degrees of commodification”¹⁷³ since the moral conception of the good can coexist with it being traded on the market. Consider Anderson’s discussion of prostitution. She holds that sexual

¹⁶⁹ This definition is similar to Carvalho and Rodrigues 2012, 268. I will omit the aspect of discursive commodification or “metaphorical markets” and stick to the narrow meaning of commodification. See also Radin 1996, chapter 1.

¹⁷⁰ Note that for Sandel, commodification can already arise at the level of simple monetary exchanges. Thus, he considers the example of paying kids for getting better grades as an instance of commodification since it forces an inappropriate and one-dimensional scale of value on education. See Sandel 2012, 51-55. Walzer also understands the problem of commodification as essentially tied to money. See especially Walzer 1983, 100-103. In contrast, Polanyi’s view is explicitly institutionalist. See Polanyi 2001, 75.

¹⁷¹ A similar argument can be presented in the case of friendship. See Sandel 2012, 93 ff.

¹⁷² See Sandel 2012, 9 f. The acceptance of the argument hinges upon one’s position as to the Kantian argument for treating human beings as ends in themselves. If one affirms it however, markets in slaves are a conceptual impossibility. Lukes thinks that such a conception is not uncontestable. See Lukes 2010, 308.

¹⁷³ Radin 1996, 104. Radin has a much broader understanding of incomplete commodification that is not essentially tied to a moral conception of a good. See Radin 1996, 115-118.

labor presents a moral problem for personal dignity since it imposes an instrumentalizing relationship between sex worker and customer. For Anderson, commercial sex also degrades the aspect of sharedness since the parties are not having sex for the same intrinsic reason. Rather than simply wanting sex with another person, at least the sex worker participates in order to earn money and not for sex itself.¹⁷⁴ A comparison of the argument against slavery with that against prostitution can clarify the distinction between incomplete and complete corruption. Both arguments are similar in that they object to instrumentalizing human beings and their capacities by alluding to a conflict with human dignity. In contrast to slavery however, the corruption in prostitution seems to remain incomplete. Prostitutes are not sold like slaves, i.e., they are not fully dehumanized by marketization. Rather, sex work in most western democracies is sold as a commercial service. Even though the performed work involves greater risk and vulnerability than other forms of income, many relevant problems for the profession do not genuinely arise from a moral conception of sex. Accordingly, it is unclear whether prostitution is fully incompatible with the concept of human dignity, provided that certain background conditions are in place to ensure the legitimacy and fairness of the transaction.¹⁷⁵ Despite these objections, it seems that the sexual relation is, in a morally relevant sense, still different in a market vis-a-vis a non-market setting. In Sandel's view, for example, incomplete corruption is also morally worrisome since such commodification slowly crowds out other relevant non-market norms.¹⁷⁶ However, with respect to incomplete corruption, there seems to be no conclusive moral reason to fully prohibit exchanges that are in tension with the moral value of goods.

In order to conclude this section, I will briefly recapitulate the argument. I will understand a good as completely corrupted if a contradiction or incompletely corrupted if a tension between a moral conception of the good and the assignment of the commodity status is established. Complete corruption provides conclusive moral reasons to block or prohibit market exchanges in such goods, *given the particular moral conception*. This qualification is important since the argument is only valid if the moral conception itself is affirmed. Incomplete corruption on the other hand arises from a tension between the commodity status and the moral conception of a good. Such cases can be regarded as indicating a need for market regulation since commodification degrades a morally valuable object or crowds-out favorable non-market attitudes towards it. Here again, actual regulation depends on the acceptance of the moral conception in question. The following section

¹⁷⁴ See the reconstruction of Anderson's argument in Satz 2010, 143. Satz's reference to Anderson's original paper is inconclusive.

¹⁷⁵ See Satz 2010, 143.

¹⁷⁶ See Sandel 2012, 112 f.

will first discuss shortcomings of commodification theory as a particular moral view on markets. Subsequently, I introduce the framework of noxious markets by Debra Satz which she considers as a better approach to the moral limits of markets.

3.4. Noxious Markets

Even though she finds some merit in the above sketched arguments, Debra Satz rejects commodification as an adequate framework to determine when and how markets should be limited from a moral viewpoint.¹⁷⁷ She presents three broader reasons for her diagnosis. First, Satz raises the concern that cases of complete corruption are very rare. There seems to be only a narrow range of (widely accepted) moral ideals that are strictly incompatible with organized market exchanges. Secondly, she disputes some of the degrading effects of markets. To see why, consider again the case of prostitution. Satz points out that it is not necessarily given that customers perceive their sexual relationship with a prostitute as only instrumentally valuable as Anderson assumes. To put it differently, market norms surely favor, but do not dictate a certain mode of valuation.¹⁷⁸ Thirdly, identifying cases of incomplete corruption seems to be unhelpful from a policy perspective. Where “selling a good embodies an inferior way of valuing it, this does not tell us whether or not we should allow that good to be sold.”¹⁷⁹ But if we cannot establish a conclusive reason for blocking a market, fairness considerations are more insightful for dealing with these cases. A fairness perspective concentrates less on moral corruption, but on “the underlying rules of the game.”¹⁸⁰

In the following I will introduce Satz’s framework of noxious markets that seeks to overcome the drawbacks of moral assessment via commodification theory. Her overall aim is to ground

moral distinction between types of markets, but one that is not primarily based on the special nature of certain goods, but on considerations that cut across goods.¹⁸¹

Rather than dealing with markets based on a moral conception of goods, as proposed by commodification theory, she establishes four moral values that are critical to assess market relations of the transacting parties.¹⁸² To distinguish noxious from morally unproblematic markets, Satz argues that weak agency, underlying vulnerability as well as extreme harm to individuals or society are superior in tracking the morally objectionable characteristics of particular markets in comparison to commodification theory.¹⁸³ Beyond these four dimensions that form the core of

¹⁷⁷ I take these from her discussion of Sandel’s view in Satz 2012 and adapt them to the proposed framework.

¹⁷⁸ See Satz 2010, 143.

¹⁷⁹ Satz 2012.

¹⁸⁰ Satz 2019.

¹⁸¹ Satz 2010, 110.

¹⁸² Satz assumes that these values are widely shared. See Satz 2010, 112.

¹⁸³ See Satz 2010, 98 f.

the noxious market framework, Satz considers whether certain markets directly undermine the equal status of citizens. Her social democratic view agrees with commodification theorists on the point that redistribution of wealth and income, i.e., issues of redistributive justice, would not fix all moral problems we might reasonably have with using markets as mechanisms of resource allocation.¹⁸⁴ She also follows up on Bowles's topology of markets in considering cultural and political effects on the exchanging parties by adding a distinctly moral perspective to these problems. In sum, markets can be noxious if they are "toxic to important human values."¹⁸⁵

Let us now take a closer look at Satz's coordinate system. The first two of her four moral parameters depict *harmful consequences* that can result from market exchanges, whereas the latter two relate to the underlying conditions of agency or the *sources* of market exchanges. If a market scores high in at least one of the parameters, markets are said to be perceived as noxious or unacceptable. According to Satz, markets are morally objectionable if they

1. produce *extremely harmful outcomes* for participants or third parties and/or
2. are *extremely harmful to society* by undermining the social framework needed for people to interact as equals and/or
3. are characterized by *very weak or highly asymmetric knowledge and agency* of market participants and/or
4. reflect the *underlying extreme vulnerabilities* of one of the transacting parties.¹⁸⁶

The first parameter, extremely harmful outcomes, alludes to a universally shared understanding of a minimum living standard with respect to the welfare and agency interests of individuals.¹⁸⁷ As an example, Satz considers a grain market which produces starvation since prices are set too high for some people. Where the basic welfare (or agency) interests of individuals are not satisfied and people fall beneath a certain threshold, markets are morally objectionable. The second parameter considers extremely harmful consequences for society to consist in the subversion of the equal status of individuals. Satz understands the interaction of equals "to be given by the preconditions necessary for individuals to make claims on one another [...] without having to beg or push others around."¹⁸⁸ Problematic cases are for example markets in child or bonded labor since the contractual arrangement by themselves undermine the equality of the exchanging parties. A

¹⁸⁴ See Satz 2010, 99 f. and 208 ff.

¹⁸⁵ Satz 2010, 3.

¹⁸⁶ These formulations are taken from Satz 2010, 94-99.

¹⁸⁷ Here, Satz draws on a distinction provided by Amartya Sen. Sen argues that the concept of a successful person gives rise to two irreducibly distinct but interdependent aspects, viz. a person's well-being and/or their agency. Whereas the former concentrates on the good of a person, the latter notion addresses the ability to form and pursue one's own interests. See Sen 1985, 40-47 and 59-61. See Satz 2010, 95 and 160.

¹⁸⁸ Satz 2010, 95.

different example is a market in votes, which is morally objectionable since it clashes with the notion of democratic legitimacy and the equal status of citizens. Without acknowledging Bowles directly, Satz also includes the issue of constitutive exchange in this parameter. In her view, markets are morally problematic if they shape agential capacities and preferences “in ways that are in tension with a society of equals.”¹⁸⁹

The third parameter points in the direction of agency and information failures that can underwrite market transactions. According to Satz, weak or highly asymmetric agency occurs where market participants are to a certain extent ignorant about relevant characteristics of the good exchanged and/or about the consequences that result from the transaction. Those markets are however first and foremost not (only) problematic for their harmful results, but concern the sources of market exchange, i.e., the justification of the transaction. Thus, if agents are systematically mistaken about important information and consequences during the exchange, the enforcement of contracts may be (perceived as) illegitimate. In terms of welfare economics, it could not be assumed that exchanges involving agency failures are a Pareto improvement. Last but not least, the fourth moral parameter refers to markets that result from exploitation or destitution. Here, Satz has in mind markets that do not present good alternatives to market participants but leave them with virtually no choice. She considers such situations to be characteristically asymmetric, in that only one of the parties is vulnerable to the exploitation. The unequal standing of the parties is not only reflected in markets relevant to match basic needs, but also in markets where the transacting agents have “highly unequal needs for the goods being exchanged.”¹⁹⁰

The unifying theme in the background of all parameters are “problems that are related to the *standing* of the parties before, during, and after the exchange”¹⁹¹ for which Satz provides two egalitarian interpretations on different levels. Even though her outlook appears to be broadly consequentialist, another critical moral dimension springs from an understanding of equality as based on agential capacities as well as rights and liberties that secure an *equal status of humans and citizens* in society.¹⁹² Therefore, the equal status of individuals as rooted in the assumption of an equal moral worth of all human beings is central to her view. Satz’s general worry is that markets can “undermine the social context in which people are able to interact on terms of equality.”¹⁹³ In

¹⁸⁹ Satz 2010, 95. Examples are markets in education, media or caregiving.

¹⁹⁰ Satz 2010, 96 f.

¹⁹¹ Satz 2010, 93. A notable exception may be the first of the four parameters that evaluates markets exclusively with respect to their outcome for individuals. Here, the moral problem goes beyond a notion of equal status. There are however cases where the extreme harm is constituted through its corruption of the equal status. See e.g., Satz 2010, chapter 8 on voluntary slavery.

¹⁹² Satz does not elaborate on the implications of this egalitarian ideal in terms of distributive justice.

¹⁹³ Satz 2010, 104.

addition, Satz provides a distinctly political interpretation of equality. Her understanding of an equal status in a democracy follows the approach of social theorist T. H. Marshall who holds that equal citizenship requires that citizens are granted social rights. In addition to formal rights, social rights are necessary to realize full membership and inclusion in society. They relate to a minimum standard of living with respect to education, health care, but also economic welfare more broadly, i.e., a sufficient level of income and housing. The intuitive thought is that the citizens' social rights are the crucial preconditions for a functioning democracy. They cannot act on equal footing with one another, if e.g., they have vastly different levels of education. In a similar fashion, a certain level of poverty or uncovered illness will lead to situations of desperation and open the door for likely exploitation of certain parts of society. According to Satz, social rights are not strictly a matter of material redistribution since they are not translatable into a money equivalent. For this reason, Marshall assigns such goods the status of inalienability for the fulfillment of social rights is necessary "to participate competently and meaningfully in democratic self-governance."¹⁹⁴

As to the second interpretation of equality as equal political citizenship, Satz draws two broader conclusions for the regulation of markets. First, markets should not be the central or exclusive mechanism to guarantee the distribution of goods relevant for the fulfillment of social rights, e.g., in education or health care. If these goods would only be sensitive to a person's ability to pay, their equal status would be reduced to privilege.¹⁹⁵ Second, equal citizenship can provide reasons to block or prohibit markets in some goods, e.g., in votes. If votes could be bought and sold, the notion of democratic equality would simply fall apart. Therefore, Satz herself, although without explicitly noting it, advances a version of the corruption claim based on a moral conception of votes.¹⁹⁶ By alluding to a democratic ideal, she hopes to establish a value which all citizens are likely to endorse.¹⁹⁷

Table 2 on the following page summarizes the parameters of noxious markets. Note that it does not follow from the fact that a market is morally objectionable, that it should be legally banned. Rather, Satz's framework helps not only to diagnose why markets are morally objectionable, but also already suggests a possible cure. If for example the source of a market's noxiousness lies in the weak agency of one of the parties, we could try to strengthen their position so as to reduce this shortcoming. In a different context, underlying vulnerabilities could be mitigated by providing

¹⁹⁴ Satz 2010, 101.

¹⁹⁵ See Satz 2010, 101 ff.

¹⁹⁶ She considers two possible interpretations of democracy as 1) governing oneself and 2) determining a common good. The latter republican version is also advanced in Sandel 1998, 107 ff. See Satz 2010, 102 f.

¹⁹⁷ See Satz 2010, 112.

more than one allocation mechanism so as to ensure supply in basic goods. In this fashion, Satz hopes to supersede attempts to incorporate, e.g., agency or information failures in a broader economic framework of market failure. Rather, her aim is to widen the assessment to include effects on the equal status of individuals and citizens as sources and consequences of markets. If treated correctly, formerly noxious market arrangements can thus be transformed into morally unproblematic markets. I will take up her proposed moral dimensions for the assessment of personal data markets in chapter five, to see whether there is reason to block or regulate markets in personal information. Before doing so, I will first introduce various types of market arrangements in chapter four and discuss recent advances in information technology that paved the way for their existence.

Source: Weak Agency	Source: Vulnerability
Inadequate information about the nature and/or consequences of a market; others enter the market on one's behalf	Markets in a desperately needed good with limited suppliers; markets with origins in poverty and destitution; markets whose participants have very unequal needs for goods being exchanged
Outcome: Extreme Individual Harm	Outcome: Extreme Societal Harm
Produces destitution; produces harm to basic welfare and/or agency interests of the individual	Promotes servility and dependence; undermines democratic governance; undermines other regarding motivation

Table 2. Moral Dimensions of Noxious Markets. Adapted from Satz 2010, 98.

4. Personal Data Markets

So far, I have investigated markets and their moral limits in mostly abstract terms. Chapter two presented a general overview of the standard model of “the Market” and the economic assessment of problematic cases of market failure. Chapter three investigated possible shortcomings of the market model and introduced three critical perspectives on markets as institutions for resource distribution. The following fourth chapter now turns to personal data markets that involve the trade of personal data.¹⁹⁸ My following exposition of various sorts of market arrangements is deliberately *descriptive*. It is however not primarily orientated towards neoclassical economics. In this chapter, my principal aim is to take the idea of data as payment seriously in order to develop a proper understanding of the commercial context in which individuals interact online. Whereas many scholars have investigated the possibility of so-called Price Markets, which rely on the idea of ownership over personal data, I follow Newman’s proposal to add Zero-Price Markets to the

¹⁹⁸ For convenience, I will use the terms personal data markets and data markets interchangeably.

picture. Rather than understanding market exchange as exclusively tied to the sale of data, there is empirical and conceptual reason to suppose that users already are de facto customers in common online settings. Instead of paying with money, I will discuss what it means to face data as exchange cost. Since I can show that commercial online settings are markets, there is reason to investigate their moral limits in chapter five.

To arrive at a proper understanding of personal data markets, section 4.1. will first discuss the relevant characteristics of personal data. This is necessary to clarify the object of exchange. Subsequently, section 4.2. introduces the notion of Big Data to give an overview of relevant technological advancements. I will also clarify why corporations have a commercial interest in exchanging data and how they use and process it to create profit. In the following section 4.3., I introduce a key distinction between personal data markets with and without prices. On so-called Price Markets, personal data is exchanged for money. On Zero-Price Markets, data is exchanged as a method of payment. Among other things, this distinction is relevant for normative assessment as it indicates differing decision scenarios for individuals. Next, section 4.4. is dedicated to exploring two variants of Price Markets, namely the Data Broker Industry and Laudon's economic model of a National Information Market. The last section 4.5. discusses Zero-Price Markets. I argue in this section that we can conceptualize the exchange of personal data for "free" digital products (or zero-price products) as a genuine market exchange as data is used as a means of payment.

4.1. Personal Data

Before addressing the different types of data markets, we need to examine the very notion of personal data more fully.¹⁹⁹ In the most general terms, the common-sensical equation of information as data is not fully justified since data as opposed to information is raw, i.e., not yet meaningful. To get from (raw) data to information thus requires interpretation.²⁰⁰ When considering the case of personal data markets in the following sections, it is key to have this distinction in mind. As it is somewhat counter-intuitive and hard to avoid sometimes, I will make it explicit when needed. Moreover, I will be mostly concerned with digital data, as the influence of information technology is most relevant for personal data markets. Of course, this does not mean

¹⁹⁹ I will stick to the standard usage and refer to data as a singular noun.

²⁰⁰ The General Definition of Information (GDI) elaborates on this idea of information as consisting of data and meaning: " σ is an instance of information, understood as semantic content, if and only if: σ consists of one or more data; the data in σ are well-formed; the well-formed data in σ are meaningful. That data is well-formed and meaningful means that it follows the syntax and semantics of a chosen system. This is to say that data complies with the rules of e.g., a computer coding language and expresses the assigned meaning of that system." See Floridi 2019.

that data is strictly digital in nature. A written message on a piece of paper is also data. Apart from that, I will not focus on markets in specific types of data like financial, genetic or health.

The moral philosopher Jeroen van den Hoven provides a helpful overview of some of the most relevant characteristics of personal data. The defining aspect of personal data is that it is “*about persons* – about their characteristics, their thoughts, their movements, behavior, and preferences”²⁰¹. But a datum is not only personal if it is in fact linked to an individual, but also if it could be linked to her. Thus, personal data should not be mistaken for indexicals like a generic name, the social security number or a unique address. It encompasses all data that relate to an identified or identifiable person (the data subject)²⁰² for example their eye color, sexual preferences or credit history. Personal data also includes so-called exhaust or collateral data, which is generated when using online services, e.g., ordering of the search terms, (in)correct spelling, click patterns, time spent on a website or in a location etc.²⁰³ Secondly, personal data is *multiple-realizable*, i.e., they are easily copied and stored in multiple databases as well as translated into various formats. Data are in this respect very different from ordinary commodities like groceries since they do not vanish through usage (or consumption).²⁰⁴ Even though data does not physically deteriorate, it is potentially vulnerable to the lifespan of soft- and hardware on which it is stored.²⁰⁵ Moreover, it may get out of date, e.g., if someone moves to a new home address.²⁰⁶ Third, data has *no single origin*, but is most commonly generated by different types of information or computing technologies from CCTVs and web browsers to satellites, sensor networks and genetic testing. Lastly and most importantly, the meaning of data is *context-sensitive* depending on its usage.²⁰⁷ This is the case since data continues to be raw and open to a multiplicity of interpretations as explained above. The usage of the same data in a different context can reveal new information which is sometimes called derived or inferred information (or derived data). To illustrate this, consider the example of geo-location data which is monitored through Google Maps. While using the app to navigate the car, that data informs the user about his or her location. It helps users orient themselves as they go about navigating. Put in a different context, say for example because your health insurance company has access to your location history, your regular visits at McDonalds (or the fitness club for that matter) could convey a different information. If your insurer associates your weekly stops

²⁰¹ Emphasis added. Van den Hoven 2009, 301.

²⁰² See GDPR 2016, Article 4, No. 1.

²⁰³ Though generally accepted, I think it is unhelpful to label such data as waste, since it is in fact a relevant input and resource for commercial usage. See Zuboff 2019, 67 f. See also Kitchin 2014.

²⁰⁴ See van den Hoven 2009, 307.

²⁰⁵ See Kitchin 2014, chapter 2.

²⁰⁶ I thank David Winkens for this point.

²⁰⁷ See van den Hoven 2009, 307.

at McDonalds with health risks, it might ask for a higher premium.²⁰⁸ An implication of this is that data is largely taxonomically neutral. It is not exclusively classifiable as groups or types of data for example as health or financial data.²⁰⁹

For the remainder of this section, I want to concentrate in more detail on the first and defining aspect of personal data, viz. how and when data is about individuals. The General Data Protection Regulation (GDPR) of the European Union (EU) defines personal data as

any information relating to an identified or identifiable natural person [...] who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, [...] or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person.²¹⁰

Van den Hoven argues that this definition is narrow in scope since the aboutness feature of personal data is strictly tied to the notion of identification. In other words, the link between data and person is made in a *referential mode*. Such a referential description is literally about a specific person. To say “Someone is lying in this room” while referring to a particular person by pointing at her is to identify that person. It is like saying “Rebecca is lying”. As Schwartz and Solove put it, “an identified person in the European Union is one that can be singled out, whether directly or indirectly, through a linkage to information that references her or him.”²¹¹ In contrast, simply considering that “Someone is lying in this room, whoever that is” is an *attributive mode* of description. Albeit the utterance is clearly about someone, it is not yet clear who this specific someone in the room is.²¹²

To better understand the implications for GDPR with respect to the two modes of descriptions, let us consider another example by Gavison. She discusses the story of a priest who, when asked at a party if he ever hears exceptional confessions, recounts that during his first confession, the confessor surprisingly confessed to murder. Later at that party, when a man arrives greeting the priest, he is asked how he became acquainted with him. “[T]he man replied: ‘[...] I had the honour being his first confessor.’”²¹³ Note that the priest has not provided any personal data according to GDPR since he did not refer to someone explicitly. The piece of information was anonymous as long as it was not about a specific individual. It is only in virtue of the additional information which

²⁰⁸ The American insurer John Hancock now offers discounted “interactive policies” that include the tracking of health data. See Chen 2018.

²⁰⁹ See Floridi 2019.

²¹⁰ GDPR 2016, Article 4, No. 1.

²¹¹ Schwartz and Solove 2014, 886.

²¹² See van den Hoven 2009, 309 f.

²¹³ Gavison 1980, 431.

the man himself (unintentionally) gave that he can be identified as the one who confessed to murder. As a result, the priest's attributive description arguably conveyed *identity-relevant information* not protected under EU legislation. Whether that attribution is revealed to be information about a specific individual depends on the context and the knowledge of the audience. I will follow van den Hoven in understanding both referential as well as attributive descriptions and therefore all identity-relevant information as personal data.²¹⁴ The next section will clarify the relevance of this view on personal data in light of recent technological developments. Profiling for example makes it possible to identify people based on classification or group characteristics rather than typical identifiers.

4.2. Big Data

Before addressing the various types of personal data markets, I want to turn to the question as to how exactly corporations create economic value through data exchange and collection.²¹⁵ What are the reasons for the concentration of such huge quantities of data in the hands of a few companies? Even though markets for data about specific individuals predate the commercial adoption of the digital computer, its recent growth and market penetration is connected to technological development, viz. the emergence of Big Data.²¹⁶ To understand this phenomenon, Rob Kitchin helpfully contrasts Big with Small Data. He argues that the two labels only arrived after costs and technical difficulties to generate, store and analyze very large data sets have decreased considerably. Hitherto, there was no need for conceptual differentiation since all data was small, i.e., created in controlled and restricted ways. Even though large data collections like the census were common, to be manageable, they were restricted to only few periodic iterations (slow velocity), operated typically not on an individual but on a more coarse-grained level (e.g., households), collected only non-exhaustive information and were limited in the variety of used data formats.

In contrast, big data are characterized by being generated continuously, seeking to be exhaustive and fine-grained in scope, and flexible and scalable in their production. Whereas small data are largely oases of data within data deserts, *big data produce a veritable data deluge*.²¹⁷

Therefore, data production and collection has changed not only in terms of scale but also in terms of other relevant dimensions. The difference of Big and Small Data is not only due to an increase

²¹⁴ See van den Hoven 2009, 309 f. See also van den Hoven et al. 2020. Macnish and Gauttier notice other drawbacks, e.g., that data ceases to be personal if a person dies. See Macnish and Gauttier 2020.

²¹⁵ Whenever I will refer to data collection, I mean to imply a market-like exchange relation.

²¹⁶ See Christl and Spiekermann 2016.

²¹⁷ Emphasis added. Kitchin 2014, chapter 2.

in volume, but also in structure, continuous creation and strong relatedness between data points and sets. Table 3 lists the differing characteristics between Small and Big Data.

	Small Data	Big Data
Volume	Limited to large	Very large
Exhaustivity	Samples	Entire populations
Resolution and Identification	Coarse and weak to tight and strong	Tight and strong
Relationality	Slow, freeze-framed/bundled	Fast, continuous
Velocity	Limited to wide	Wide
Flexible and scalable	Low to middling	High

Table 3. Comparison of Small and Big Data. Adapted from Kitchen 2014, chapter 2.

In view of these features, it is crucial to realize that Big Data not only refers to “the overwhelming wealth of digital data now available, but also to the development of new tools and methodologies to process this data.”²¹⁸ Information technologies commonly grouped under the umbrella term data analytics,²¹⁹ are the direct consequences of the requirement to process huge quantities of unstructured data.

With respect to data analytics, automated profiling is one information technology I will refer to repeatedly. Hildebrandt and Koops define profiling “as the construction or inference of patterns by means of data mining and [...] the application of the ensuing profiles to people whose data match with them.”²²⁰ In order to derive meaning from data, or even knowledge as Hildebrandt and Koops argue, automated profiling carries out three steps. First, data is collected and stored in databases in a machine-readable format. Secondly, “data mining, consists of applying algorithms to the data, aiming to discover patterns (clusters, association rules, correlations etc.) in the data that are not visible with the naked human eye.”²²¹ Lastly, algorithms are employed either top-down to test some hypothesis (supervised learning) or bottom-up, where an algorithm is trained to find new patterns of correlation in the data set (unsupervised learning).²²² Such correlations are used to identify people or attribute them to categories and groups.²²³ Against the backdrop of such developments, it is thus key to understand personal data as including both attributive as well as

²¹⁸ Kammourieh et al. 2017, 41.

²¹⁹ More precisely, data analytics can be understood as the “practice of using algorithms to make sense of streams of data.” Mittelstadt et al. 2016, 3.

²²⁰ Hildebrandt and Koops 2010, 431.

²²¹ Hildebrandt and Koops 2010, 431 f.

²²² See Hildebrandt and Koops 2010, 432.

²²³ See Hildebrandt 2008, 19.

referential descriptions, i.e., identity-relevant information. Since GDPR concentrates on identifiable information, it misses that “[m]embers of the group (e.g., a market segment) need not be *identified* but rather *classified* to be effectively targeted.”²²⁴ From a technical perspective, traditional identifiers, like contact details, are substituted by group characteristics as a form of shared identification.

On the most basic level, computational tools, like profiling, create meaning and value from immense digital data sets. To do so, they segment and classify input data to generate models from a given data set and refine these models until successful.²²⁵ In this way, data about individuals is “de- and recontextualized”²²⁶ in the hope of aggregative effects and ex ante unforeseeable results. As Daniel Solove has put it, “little bits of innocuous data can say a lot in combination.”²²⁷ With respect to digital business models this implies that the quality of (big) data products tendentially increases with the quantity of data with which an algorithm can be trained. Data brokers and other companies using Big Data follow a data maximization imperative since the more input data a company has, the better their product.²²⁸

Apart from technological and organizational issues, today’s commercial imperative for data collection may still seem surprising. The real economic value of using automated systems to build and maintain huge databases about users, is at least *prima facie* not obvious. What then is the purpose of profiling? The easiest answer to this question is that profiles can be sold. The following section 4.3.1. is dedicated to the industry of data brokers who specialize in this profession. Apart from that, van den Hoven presents two further reasons why the commercial usage of personal data and the demand for personal data products won’t decline in the future. First, companies have a general interest in knowing as much as possible about their customers both to improve their products, but also to target potential customers more effectively. Independent of the context within which data products are used, their general value for corporations lies in customer information that was previously not available. Based on the segmentations, classifications or inferred characteristics companies can base their decisions on more empirical grounds. Instead of treating all customers the same, it has become possible for corporations to get to know their actual or future customers. This also paves the way for increased personalization of products and better investment decisions

²²⁴ Mittelstadt 2017, 478.

²²⁵ How and why an algorithm arrives at correct results often remains a “black box”, i.e., incomprehensible to human reasoning. For more applications and a detailed view on data analytics see Mittelstadt et al. 2016.

²²⁶ Hummel et al. 2018.

²²⁷ Solove 2013, 1889 ff. I adopt his terminology of aggregative effect. Fluitt et al. refer to this as the composition effect and discuss several examples. See Fluitt et al. 2019.

²²⁸ See Zuboff 2019, 95. It should be noted that the quality of the data is of course a relevant factor.

in product development and marketing. Secondly, van den Hoven adds that companies try to calculate the risk of fraud or deception. This interest in personal information is of course often not in the interest of the data subject. From the perspective of companies however, customer profiles reduce a purported knowledge deficit (or informational asymmetries).²²⁹

Despite the inherent profit motives that arise from the new technological opportunities, Jathan Sadowski presents a more radical interpretation of the commercial motives for data accumulation in conceiving of *data as capital* in the digital economy. When data is interpreted as a form of capital, it becomes clear that companies seek to collect it in its own right. In this picture, data is not merely instrumental to monetary gain, but an independent driver for business activity.

In digital capitalism, data is not a substitute for money, but is rather elevated and put ‘on the same level as financial capital’ [...]. The imperative, then, is to constantly collect and circulate data by producing commodities that create more data and building infrastructure to manage data. The stream of data must keep flowing.²³⁰

Data as capital offsets a cycle of accumulating more data, even when companies are antecedently ignorant as to whether the collected data can be turned into economic profit. As the possibilities of data analytics increases, so does the investment in data as its main resource. A good illustration for this kind of strategy are products which tech corporations routinely offer with an existing business model, but from a motive of data accumulation. Sadowski quotes Andrew Ng, former top employer of Google: “At large companies, we launch products not for the revenue, but for data. We actually do that quite often [...] and we monetize the data through a different product.”²³¹ In these cases it becomes most clear how a data-driven business is interested in receiving data rather than money as payment.²³² So even though data may be monetized in different ways, it is instrumental that the flow of data from customer to company is as comprehensive as possible.²³³ Taken together, there is reason enough to suppose that the commercial want for personal data will remain unbroken.

4.3. Personal Data Markets

I will now turn to various sorts of market arrangements that revolve around the trading of personal data. My aim is to introduce a mapping of various types of markets that elucidate structural differences relevant for moral assessment. Combining the aforementioned understanding of

²²⁹ See van den Hoven 2009, 304 f. See also Hildebrandt 2008, 19 f.

²³⁰ Sadowski 2019, 4.

²³¹ Quoted in Sadowski 2019, 5.

²³² See Sadowski 2019, 8.

²³³ See Sadowski 2019, 5.

personal data with the definition of markets by Lukes from chapter three, I will discuss personal data markets as institutions that involve the trade of personal data. Lukes defines markets as

[i]nstitutions involving regular and frequent exchange, buying and selling, that is, trading with enforceable and enforced contracts that is, unlike gift-giving *conditional upon future payment*.²³⁴

To specify the method of payment, I introduce a key distinction between two types of personal data markets: personal data markets with prices or Price Markets and personal data markets without prices or Zero-Price Markets.²³⁵ The former involve money, the latter data as payment.

On *Price Markets* personal data is bought and sold for money. With respect hereto, two different Price Markets can be distinguished, where monetization of personal data happens directly as money is exchanged for data. On B2B Markets, personal information in the form of data sets or profiles is sold and bought on markets between businesses. Examples include credit score companies such as the German Schufa,²³⁶ as well as the data broker industry that is formed by corporations such as Experian, Acxiom and Oracle.²³⁷ On C2B Markets, a person sells personal data about her- or himself to a business. C2B Markets are discussed in the literature as hypothetical reform models. One example is Laudon's National Information Market which relies on novel property rights for personal data.²³⁸ *Zero-Price Markets* on the other hand revolve around zero-price products like watching a video on YouTube, where digital service or content are free of monetary charge. In order to use these services "for free", companies ask users to share personal data. From the standpoint of the customer, the monetization of personal data is here implicit since acquiring the product does not involve monetary payment. Examples of Zero-Price-Markets are all over the Internet. The most prominent zero-price products include Google's search engine as well as Facebook's various social media sites.

Before moving on to explicate the various types of markets in sections 4.4 and 4.5., I want to briefly motivate my way of proceeding. Why introduce a mapping of personal data markets? To distinguish between Price and Zero-Price Markets is helpful for a number of reasons. The first and most obvious issue is that Zero-Price Markets are mostly not treated as markets in their own right. As a result, their setup is either explicitly or implicitly omitted in moral assessment, basically since

²³⁴ Emphasis added. Lukes 2005, 299.

²³⁵ Overall, I will distinguish between three types of personal data markets. Additionally, Acquisti et al. mention a market where privacy can be bought as a good. I will not consider this alternative, but see Acquisti, Taylor and Wagman 2016, 473 f.

²³⁶ See www.schufa.de.

²³⁷ For an overview see for example Christl and Spiekermann 2016.

²³⁸ See Stigler 1980 and Laudon 1996. For a revival of Laudon's idea that banks as data intermediaries see Véliz 2018. A different economic model of "data as labor" is proposed in Posner and Weyl 2018, chapter 5.

they do not involve monetary payment. Shoshana Zuboff, one of the most prominent critics of the current architecture of the digital economy, or Surveillance capitalism as she calls it, argues for example that Google users are not proper customers since they do not pay for the company's services.²³⁹ There is reason to suppose that this view is simplistic and that a close investigation of the exchange costs that online customers bear can clarify the nature of the exchange. As always, a clearer statement of the problem also invites better assessment. The second reason for the distinction is that online price-avoidance is a structural feature that bears normative relevance for the evaluation of personal data markets since individuals are put in differing choice scenarios.²⁴⁰ It would be misleading to treat markets with and without prices as identical. Accordingly, an assessment of the limits of personal data markets should be responsive to this aspect.

Thirdly, even though Price and Zero-Price Markets are structurally different, it is helpful to clarify their interdependence in the wider personal data economy. Large online companies for example usually rely on multiple data sources and here especially on B2B Markets, which also collect and provide personal information.²⁴¹ On these markets, individuals are virtually uninvolved even though information about them circulates between companies. The most relevant aspect for individuals in this context is that the data broker industry forms an often unbeknown, but ever larger part of the context within which individuals make their data trading choices. Given that the meaning of personal data is context-sensitive, data brokers contribute to the formation of this context. In this respect, they have a vital influence on the value that companies can extract from personal data by increasing or complementing existing data sets simply by purchasing more data. In line with this understanding, I will mainly focus on the scope of data collection in the industry. Taken together, it can be assumed that the exposition of the various types of markets helps to assess the moral limits of personal data markets more carefully in chapter five.

4.4. Personal Data Markets with Prices

The following section deals with Price Markets as regular exchanges of personal data that are conditional on monetary payment. Here, personal data is directly priced and monetized. As explained above, such markets are relevant either as B2B Markets, where businesses trade personal data, or as C2B Markets, where individuals directly sell their personal data to companies. The next section 4.4.1. concentrates on B2B Markets, where data subjects themselves are not involved in the

²³⁹ See Zuboff 2019, 69.

²⁴⁰ A good example for this difference is the so-called zero-price effect. When marketed as “free,” consumers behave as if this not only reduces costs, but actually adds a benefit to the product. As a result, demand for “free” products increases overproportionately. See Ozer 2012, 226 f. See also Newman 2016, 74-77.

²⁴¹ See Christl and Spiekermann 2016.

trade. In the subsequent section 4.4.2., I introduce Laudon's economic model of a National Information Market that grants individuals the possibility to sell data. Even though it is an older proposal, Laudon's market is in my view still the best exposition for the economic case in favor of market-based information distribution.

4.4.1. B2B Markets

It is nearly impossible to get a clear view on the B2B Market for personal data. On the one hand, this is due to the unknown numbers of big and small companies that operate in the relatively new and understudied field. On the other hand, the business practices as well as the various sources of personal data that flow in- and outside the companies remain opaque due to corporate secrecy and a lack of regulation.²⁴² Already in 2014, the U.S. Federal Trade Commission (FTC) called for legal reform to enforce more transparency on the so-called data broker industry. To achieve some initial overview, the FTC reported on nine specific companies who buy and sell personal data. The FTC defines such data brokers as businesses that collect or purchase personal data from governmental, public and commercial sources such as “offline” governmental records, credit scores or online browsing histories. They do so in order to aggregate and analyze information to rent and sell personal data. The commission revealed that this sort of data collection has arrived on a grand scale:

Data brokers collect and store a vast amount of data *on almost every U.S. household and commercial transaction*. Of the nine data brokers, one data broker's database has information on 1.4 billion consumer transactions and over 700 billion aggregated data elements; another data broker's database covers one trillion dollars in consumer transactions; and yet another data broker adds three billion new records each month to its databases. Most importantly, data brokers hold a vast array of information on individual consumers. For example, *one of the nine data brokers has 3000 data segments for nearly every U.S. consumer*.²⁴³

The quote demonstrates that the collection of data is “vast” along two dimensions: First, the data broker in question covers almost the entire (U.S.) population. Second, it also has an extensive amount of data for every consumer in this population. Hence, if the meaning of data is context-sensitive, such data collections form a large part of the context against which individuals interact online. Even though customers usually have no direct relationship with such companies, data brokers store, analyze and market their information. As the discussion in later sections will show, this has significant effects on the decision scenario of individuals since they have to balance their

²⁴² See Rieke et al. 2016, 9. See Kitchin 2014, chapter 2. See Christl and Spiekermann 2016, 121 f.

²⁴³ Emphasis added. Federal Trade Commission 2014, iv.

interests and choices against a backdrop of already existing information about them. At least for the U.S. consumer, this means that every household is transparent in a significant way to data brokers and businesses who are willing to buy data from them. It is worth noting in this respect that some of the biggest data brokers are known to cooperate with big tech companies like Facebook. Accordingly, user content, likes and personal metadata, i.e., regular every-day online behavior, is paired with “offline” information on credit and purchasing histories across various contexts.²⁴⁴ Information that was for example previously only relevant to predict risk or prevent fraud is now also relevant to identify and target users for advertising. In other words, the integration of personal data is becoming pervasive and ubiquitous.²⁴⁵ Before addressing why companies are interested in amassing and buying data in such excessive quantities, I first want to clarify more fully the notion of B2B Markets.

In the following, I will slightly depart from the FTC’s perspective on data brokers. The definition that best fits my understanding of B2B Markets is that of Rieke et al. who treat data brokers as “companies or business units that earn its primary revenue by supplying data or inferences about people gathered mainly from sources *other than* the data subjects themselves.”²⁴⁶ The definition helps to bring out two important characteristics of the industry. First, it sharpens the insight that data brokers operate on the direct monetary value of personal data. They earn their “primary revenue” from personal data or the profiles and dossiers created from it. These profiles are data products marketed (both sold and rented) to other companies for risk mitigation and fraud prevention, marketing, people search,²⁴⁷ but also for customer relationship management.²⁴⁸ Apart from this, data brokers also operate in education, healthcare and on behalf of government and law enforcement agencies.²⁴⁹ Secondly, to achieve maximum value, data brokers go a long way to collect every bit of information that they can find about people both from publicly available and non-public sources, whereas online tracking is just a minor part of their activities.²⁵⁰ In turn, the legitimacy of data collection in the data broker industry is not a question of reciprocal exchange.²⁵¹

²⁴⁴ See Kitchin 2014, chapter 2. See also Rieke et al. 2016, 24 ff. as well as Christl and Spiekermann 2016, 121.

²⁴⁵ See Christl, Kopp, and Riechert 2017a, 9 f.

²⁴⁶ Emphasis in the Original. Rieke et al. 2016, 4.

²⁴⁷ See Federal Trade Commission 2014, Executive Summary.

²⁴⁸ See Bria et al. 2015. For an overview and comparison see Christl and Spiekermann 2016, 82 f.

²⁴⁹ See Rieke et al. 2016, 8. This definition, though more precise, makes it considerably harder to correctly estimate the revenues in the industry. Estimates for the U.S. market in 2012 go up to \$156 billion. See Rieke et al 2016, 13 f.

²⁵⁰ See Rieke et al. 2016, 10 f. See also Kitchin 2014, chapter 2.

²⁵¹ In their “Audience Lookbook”, the data broker Experian reports that they store “more than 50 years of historical information and industry experience [and] [t]he freshest data, compiled directly from hundreds of sources.” They store data on 300 Million U.S. citizens and 126 Million households. See Experian 2019.

It is the rule rather than the exception that this data is collected without the knowledge or consent of individuals.²⁵² Hence, data brokers have neither a direct monetary nor non-monetary commercial relationship with the individuals they collect information about.

4.4.2. C2B Markets

Various initiatives and activists have investigated market-based solutions to decrease privacy intrusion caused by the collection and processing of personal data.²⁵³ One way of realizing a more “user-centric economy” revolves around the concept of tradeable personal data ownership.²⁵⁴ In contrast to B2B Markets, where companies profit from personal information, users could then decide which personal information they want to sell. This has two supposed advantages. First, users are compensated for the use of information about them. Second, a property right gives them more effective control over their data than mere notice and consent. Jason Lanier for example argues that full data ownership would place data subjects at the heart rather than the outskirts of personal data monetization and ensure fair monetary compensation.²⁵⁵ Thus far, market trade of personal data is not based on individual property rights over personal data, but the idea of C2B Markets and data ownership reoccurs repeatedly in academic debate.²⁵⁶ I will present one example in detail to enable a more thorough understanding.

In addition to data activists, neoclassical economists like Kenneth Laudon and Hal Varian entertain the idea of a market in personal data.²⁵⁷ Both authors argue that personal data markets can have the possible advantage of maximizing preference satisfaction for both individuals and companies, given a proper setup of such a market.²⁵⁸ Laudon’s proposal of a National Information Market (NIM) is still one of the most promising and elaborated models of a C2B Market. His diagnosis leading to a market-based distribution of personal information is based on the theory of market failure as introduced in section 2.3. He argues that information privacy, i.e., the control

²⁵² See again Federal Trade Commission 2014.

²⁵³ Streamr seeks to establish a Data Union enabling collective forms of personal data trade. See Streamr 2020. See also www.ownyourdata.eu. Another example without a clear market-based agenda is the E.U.-based MyData Initiative. See Poikola et al. 2019. Tim Berners-Lee, original inventor of the World Wide Web, has developed the technological standard SOLID that could facilitate data ownership. See solid.mit.edu.

²⁵⁴ For an overview see Elvy 2017, 1374 ff. and Hummel, Braun, and Dabrock 2020.

²⁵⁵ Lanier originally proposed a system of micropayments. See Lanier 2013. Recently, he and other scholars entertained the idea of Data as Labor. See Lanier and Weyl 2018 and Weyl and Posner 2018, chapter 9.

²⁵⁶ See Gutwirth and Gonzalez Fuster 2018.

²⁵⁷ Notably, Laudon does not endorse the freestanding nature of markets. See Laudon 1996, 99.

²⁵⁸ Varian endorses the view that information markets increase efficiency provided that transaction costs for controlling personal information increase. See Varian 2002, 135 f. Very recently, Metzger has renewed the claim that personal data markets would increase economic efficiency. See Metzger 2020.

over personal information, is best understood in terms of a property interest.²⁵⁹ However, market arrangements such as the B2B Market seem to violate privacy. Like in the case of pollution, where for example CO₂ consumption remains unaccounted for in market prices, unacknowledged costs that individuals bear from privacy intrusions should be reabsorbed so as to express the real price of producing information services and data products. Accordingly, a market solution solves the issue of privacy by internalizing “the external cost of an information-driven economy”²⁶⁰ and delivers individual control in the sense of a property rather than a legal or administrative right. Laudon thus presents a classic case for market failure as introduced in chapter two. Since he accepts privacy as a moral claim, he shows some notable reservations as to a virtually free market model and calls for certain regulations so as to achieve socially efficient results.²⁶¹ In his view, the interpretation of control over information as morally relevant implies that certain informational asymmetries need to be respected.²⁶² Varian in turn, conceives of the privacy externality not as a moral problem, but in terms of individual annoyance caused by unsolicited mail or phone calls. To him, privacy really is just a matter of avoiding distraction. In this view, data processing is not a moral concern per se, but can turn problematic if it causes disturbance.²⁶³

To see whether NIM can ensure the alleged control, I will now take a closer look at its design. Laudon proposes that individuals administer their personal data by opening an information account at a so-called Local Information Bank, which functions as a trusted intermediary as well as a profit-oriented agent on the market.²⁶⁴ Like on financial markets, Laudon envisages these Information Banks to select and bundle information of various customers in order to sell it as baskets on a National Information Exchange, an analog to the Stock Exchange. Here, interested companies or organizations can buy them as information products. In this way, a multitude of different markets for credit, health or marketing information would emerge. Buyers of information baskets obtain “the right to use the information for commercial purposes other than that for which it was originally collected”²⁶⁵, however only for a restricted time period. In sum, the market arrangement enacts a property right for personal information and allows for monetary compensation. Laudon argues that these markets would clear when the supply for certain information equals the demand

²⁵⁹ It should be noted that Laudon speaks of information not data markets. I will assume for the sake of simplicity that the model also applies for raw data.

²⁶⁰ Laudon 1996, 101. See also Laudon 1996, 98 f.

²⁶¹ Note that this concession reflects the insight that Pareto efficiency is only a sufficient condition to achieve an ideal social state from a normative perspective. See again section 3.1.1.

²⁶² See Laudon 1996, 96 ff.

²⁶³ See Varian 2002, 128.

²⁶⁴ The Information Bank is similar to Lanier and Weyl’s proposal of a mediator of individual data. See Lanier and Weyl 2018, 5-12.

²⁶⁵ Laudon 1996, 99.

“at a price based on the anticipated future revenues each basket represented.”²⁶⁶ In order to maintain and finance the NIM, Laudon suggests a transaction tax to create revenues.²⁶⁷

One of the most interesting features of the NIM is that it clearly specifies what kind of information would and would not be available on markets. What is not traded on the NIM is data that is necessarily processed for example as a matter of authentication when paying with a credit card, i.e., data created for the original purpose of a transaction. Hence, it is not required that credit card companies buy information about their customers in order to pursue their business. Neither would governments need to pay for the processing of personal data to fulfill their purposes. What could be traded on the NIM is the customer’s purchase history for a secondary or tertiary purpose, for example for commercial data analytics in order to develop new products or market them more effectively. In Laudon’s picture, the credit card company could also sell personal data, provided that the data subject receives monetary compensation and consents to the transaction. In order to keep track of such purchases, Laudon proposes to create supervising institutions which should ensure transparency and audit mechanisms on the market. In this way, all secondary uses of personal data would be open to scrutiny and individual control through property rights.²⁶⁸

Taken together, the NIM is a straightforward model of a Price Market that affirms an explicit commercialization of personal data under individual control. In contrast to B2B Markets, individuals participate per default in any commercial transaction that involves information about them. Moreover, every personal data transaction is taxed. During chapter five, I will touch upon the question whether or not such a market can be morally attractive. The following section 4.5. deals with Zero-Price Markets and argues that today, individuals exchange personal data not for money, but for digital service or content use.

4.5. Personal Data Markets without Prices

The following section discusses Zero-Price Markets as regular exchanges of zero-price products that are conditional upon data exchange as a method of payment. In particular, I discuss multi-sided markets where personal data is monetized via interrelated products. In the digital world, Zero-Price Markets occur most often as platforms that involve targeted advertisement. Here, personal data allows for the connection of social media, web services or other digital products with ads. For reasons of brevity, I will mainly restrict my exposition in section 4.5.1. to Google Search as a reference point. The outlined market structure also applies to Facebook’s various social media

²⁶⁶ Laudon 1996, 99.

²⁶⁷ See Laudon 1996, 100.

²⁶⁸ Laudon also allows governments the role of information selling and buying. See Laudon 1996, 100 f. See also Varian 2002, 129 f.

networks as well as to many newspaper sites or any other market arrangement conditional upon the exchange of personal data.²⁶⁹ Section 4.5.2. elaborates on the notion of data as payment or exchange cost from the user side of such markets.²⁷⁰ Building on this, I investigate in the subsequent section 4.5.3. if the trade of zero-price products can really be understood as market exchange. I will thus debate whether we have conceptual resources to incorporate the notion of data as payment in a proper conception of markets.

In the following, my overall aim is to show that people often exchange personal data not as mere online users, but *de facto* customers. For the purpose of this thesis, the conceptual step to describe personal data exchange as a market transaction makes it plausible to apply Satz's framework of noxious markets to Zero-Price Markets in chapter five.²⁷¹ Before getting into the details of such market arrangements, let me emphasize that this section is about the descriptive, not the normative question as to whether we *can* rather than *ought* to conceptualize the exchange of personal data for free services as market transactions. I will argue that the absence of monetary prices is no reason to conclude that the exchange of "free" goods for data is a non-market transaction or free-as-in-gratis. This diagnosis has important implications for the normative discussion of personal data exchange in the subsequent chapter.

4.5.1. Zero-Price Products

Companies use one of two strategies to market products without a monetary price. The first business model involves the combination of multiple complementary products. The critical interrelation between the priced and unpriced products springs from a technological (or contractual) connection. Apple for example originally offered the iTunes software for free, with the technological provision that only digital music downloaded from the iTunes Store could play on it. A free tying product (iTunes) was meant to enable profits from the sale of tied products (music). Other examples include the operating systems of Google or Windows and their related products like apps, browsers or other software. Many of these strategies have come under scrutiny of antitrust regulation since they tend to hamper competition. For the purpose of this thesis, I will

²⁶⁹ My exposition of Zero-Price Markets owes a great deal to the account of John Newman, which is developed in Newman 2015, Newman 2016 and Newman 2018.

²⁷⁰ Scholarly debate only very recently recognizes digital business models as market arrangements that depend on the conditional exchange of personal information to use either service or content. See Newman 2018. Public debate about the economic value of personal data started earlier. See e.g., Zax 2011.

²⁷¹ Of course, it would also be possible to discuss personal data markets without such a connection. Data could simply be treated as hypothetical tradeoffs in monetary terms. In order to make a stronger case, I want to show that personal data markets and costs are real and not merely hypothetical.

not cover these markets since they do not primarily rely on the processing of personal data to create revenue.²⁷²

The second business model, which is my main concern for the remainder of the chapter, are so-called multi-sided platform.²⁷³ A multi-sided market connects groups of customers since “at least one of the groups positively values the presence of the other group.”²⁷⁴ The seminal example of such a business model is the American credit card market. In the U.S., consumers typically obtain credit cards for free, while merchants pay fees for the transactions. In this way, merchants overcompensate the supposed loss of giving away the cards and accounts for zero monetary charge. This strategy also helps to establish a large enough market and foster the widespread adoption of new cards. In contrast to credit card networks, digital Zero-Price Markets mostly involve an advertising business strategy and the processing of personal data. “Profitability in these markets turns on whether firms who have acquired a group of consumers can then sell those consumers’ information or attention (or both) to advertisers or data-seekers.”²⁷⁵ In other words, Google’s profitable product is their ad space, but unlike regular ad placements, Google offers a prediction of user behavior based on data analytics. Whereas Google does not literally sell personal data like a data broker would, they predict which users are most likely to click on certain ads based on their collected and analyzed personal data. This in turn allows advertisers to improve their targeting of potential customers on the platform and increases the efficiency of ad budgets.²⁷⁶

Even though Larry Page and Sergey Brin, the founders of Google, once proclaimed that the “goals of the advertising business model do not always correspond to providing quality search to users”²⁷⁷, Google’s ad revenues have still increased to a record high of 41,8 billion Dollars in 2019.²⁷⁸ In hindsight, Brin’s and Page’s initial concern about the quality of their search engine can be recast as the worry over the detriments of creating an interrelated product on a multi-sided market, a concept which was virtually unknown back then. In tying searches to ads, a rational and profit-maximizing economic actor necessarily privileges those platform functions that are connected to the more profitable product, which is ad space rather than search.²⁷⁹ Hence, the

²⁷² See Newman 2016, 154 ff.

²⁷³ For a technical treatment see Rochet and Tirole 2003.

²⁷⁴ Newman 2015, 156. This is sometimes referred to as network externalities. See Varian 2017, section 36.8. and Rochet and Tirole 2003.

²⁷⁵ Newman 2015, 156 f.

²⁷⁶ See Zuboff 2019, 93-99.

²⁷⁷ See Brin and Page 1998, 3831 f.

²⁷⁸ See Feiner 2020.

²⁷⁹ Of course, the two are interrelated since users value the quality of the search engine. Thus, the quality of search remains important to the company and Google has taken provisions to ensure the quality and relevance of ads. This however does not necessarily result in fewer personal data collection.

adoption of their business model virtually transformed Google's initial product, the search engine, into an advertising platform. Since advertisers positively value the presence of interested users as indicated by search terms the transformation is also reflected in the pricing strategy. Whereas advertisers pay significant prices for their placements, search is for free in order to maximize the potential group of ad viewers, or "eyeballs".

Beyond the facilitation of better advertising, Google uses the collected personal data for several other purposes. It would thus be misleading to conceive of the outlined market as simply two-sided. As discussed in section 4.2. personal data collection is an independent driver for business activity and helps for example to enable new product development. As a result, Google collects much more data than necessary for service improvement or targeted advertising and (re-)uses it in several other contexts. As data analytics promises future returns from cumulative effects, Zero-Price Markets should be literally understood as multi-sided. Moreover, personal data is collected across various contexts, e.g., when users visit Google Maps or Scholar. Hence, personal data on Zero-Price Markets is collected across various contexts.²⁸⁰ Whereas users search for websites or locations and advertisers buy ad space on the webpage displaying the search results, Google stores and analyzes the personal data for further use and research. Accordingly, personal data is monetized and contextualized in a multiplicity of ways.

For the remainder of this section, I will discuss how to conceive of the situation of individuals on Zero-Price Markets. Zuboff for example argues that it would be misleading to understand users as customers. She argues that individuals are not engaged in any market transaction since Google does not sell a product for a price.²⁸¹ In contrast to this view, I will argue that users are *de facto* customers. Since their consent to the collection of their personal data is needed, they face exchange cost in the form of data and time costs. The next section 4.5.2. elaborates on this situation by invoking the notion of data as a means of payment.

4.5.2. Data as Payment

What exactly does it mean to affirm that personal data is used as payment? John Newman argues that when²⁸²

²⁸⁰ See Zuboff 2019, 95.

²⁸¹ The arising moral problem is that multi-sided markets connect a non-market with a market transaction leading to worries over commodification. See Zuboff 2019, 67 ff. I will address this criticism in more detail in section 5.2.

²⁸² Newman discharges the idea that the marginal costs of digital production and distribution can reach zero and therefore that supply of digital goods is infinite, i.e., "without cost". For reasons of brevity, I cannot review this argument here. See Newman 2018.

for-profit firms operate in Free markets, they do not do so out of charitable goodwill. Offering Free products entails real, and often substantial, costs. For-profit firms must recoup those costs. To recoup their costs, they extract payment from consumers. Instead of paying with fiat currency, consumers pay with their *attention* or *personal information*. And where consumers pay, no matter the medium of exchange, Free is not free.²⁸³

So even when goods on markets have no prices, this does not mean that firms face no production cost. As the exposition of the market structure of multi-sided markets has shown, it is not easily concluded that free service use constitutes a non-market exchange. Since companies like Google are in need of collecting personal data in order to ensure the interrelation of both their products, there is reason to suppose that both advertisers and consumers are charged so that Google can make a profit. In a similar vein, Newman argues that consumers' exchange costs on digital markets typically as information or attention cost or as a combination of both.

In order to illustrate the two forms of exchange costs, and thus the nature of digital exchanges, I will consider the example of YouTube. When users click on a YouTube video, the platform often requires them to take 5 seconds or sometimes longer to watch an advertisement before the actual content starts. There is no way to avoid this ad exposure except maybe by shutting eyes and ears or by leaving the computer. And even then, YouTube seems to charge at least the time to wait for the required timespan. Castro and Pham argue that this leads to an Attention Economy with a similar market structure as explored above. In their view, consumers exchange their attention for “free” service use. In turn, platforms like YouTube sell this attention to interested advertisers. A problem with this view is that the authors do not fully investigate the market structure of the video platform and the role that data collection has for the business model. Notwithstanding that the picture of an Attention Economy has some merit, I think it is incomplete, since it neglects the central role of personal data exchange on multi-sided markets.²⁸⁴

In addition to charging time costs, YouTube also collects and processes personal data to maximize profit. This is done for multiple reasons, but primarily to allow for better recommendations and ad targeting through profiling. In comparison to attention cost, which constitutes a loss of time on behalf of the customer, it is *prima facie* not as clear that a person loses something in transferring personal data. Since personal data is only created during exchange and consumption, there is nothing “missing” which was previously in possession of the individual, like for example time. For the remainder of this section, I will deal with data costs as arising from the

²⁸³ Emphasis added. Newman 2018, 553. Van den Hoven and colleagues also conceive of attention and data as forms of payment. See van den Hoven et al. 2020.

²⁸⁴ See Castro and Pham 2020, 1 f.

general interest to control the circulation of information about oneself. That individuals should exert control over personal data is commonly accepted and some form of consent to data processing is legally required throughout the Western world.²⁸⁵ A study by Madden and Rainie underpins the importance of informational control. The authors found that 93 percent of Americans want control over information with 90 Percent saying that this control is important.²⁸⁶ In a different study, the same authors revealed that 86% of internet users try “to remove or mask their digital footprint.”²⁸⁷ Hence, a significant majority seems to have reason to minimize data collection. In sum, data subjects can be said to exchange personal data as an actual, not only hypothetical object, even in the absence of full ownership. Data costs represent an issue of individual control over personal information and often require sharing information that would otherwise not have been exchanged.²⁸⁸ The reason why it is shared in the first place is that it functions as the compensation for using a service.

In sum, I will understand the provision of personal data in exchange for service as personal data costs to which users usually consent – rarely in the terms of service, but instead – in a privacy policy. As specified in section 4.1., personal data can be any identity-relevant information. In the context of deliberate exchange, it is however likely that data is conferred in a referential mode in order to ensure identifiability. Beyond that, personal data collection functions like a method of payment, in that it enables the transaction on multi-sided markets.²⁸⁹ Where services cannot be used without data transfer, they can rightly be labelled as costing personal data. Conversely, I do not consider personal data as exchange costs if information processing is simply necessary for the original purpose of the transaction. Services cost personal data if that data is used for secondary purposes such as targeted advertisement, product development etc.

Moreover, I will concentrate on market arrangements that centrally involve data costs. Note in this respect that attention and data costs are structurally distinct, but often interdependent. YouTube and other digital companies argue for example that personal data collection allows them to provide more relevant content and ads to users. This can be interpreted as a claim to lower attention costs, since customers no longer waste time with uninteresting and irrelevant ads.²⁹⁰ With

²⁸⁵ See also van den Hoven et al. 2020 and Solove 2013.

²⁸⁶ Madden and Rainie 2015.

²⁸⁷ Rainie et al. 2013.

²⁸⁸ Hereby, I assume that this data is not exchanged to enable the service use, but beyond that for a secondary purpose.

²⁸⁹ “With a query on a search engine, the searcher is implicitly selling information about her current interests in exchange for finding relevant results.” Acquisti, Taylor, and Wagman 2016, 448.

²⁹⁰ In other words, “profiling could benefit consumers by more precisely identifying their needs.” Hui and Png 2005, 472.

the general understanding of data costs in place, I will examine in the next section whether zero-price products are exchanged in the form of a market transaction. In order to argue in favor of such a picture, I will provide a better understanding of how market transactions are constituted. The following section 4.5.3. shows that payment in general, but not monetary prices in particular, are the relevant condition of market exchange. Thus, whenever digital services rely on data as payment, i.e., exchange costs, exchanging personal data for a product constitutes a market transaction.

4.5.3. Zero-Price Markets

To begin with, I will take a closer look at the alternative view to the picture advanced above, viz. that Zero-Price Markets constitute no market transactions. A major supporter of this picture is Shoshana Zuboff who understands free service use as a non-market transaction. According to her, companies like Google do not offer a physical product for sale which places the service

outside the marketplace, an interaction with “users” rather than a market transaction with customers. This helps to explain why it is inaccurate to think of Google’s users as its customers: there is no economic exchange, no price, and no profit.²⁹¹

In a rather dramatic fashion, she holds in turn that users are “the sources of raw material supply”²⁹², which she takes to be personal behavioral data. Accordingly, Zuboff seems to tacitly assume that payment is exclusively tied to money. Since Google Search is “for free”, users do not engage in economic exchanges. In the following, I will not directly discharge Zuboff’s view, but present a conceptual understanding of markets that covers some forms of personal data exchange. In a cost-based conception of markets, the absence of monetary prices is no reason to conclude that data exchange for zero-price products is not a market transaction. It simply involves a different method of payment other than money.

To get a better grip on Zuboff’s argument, note how she makes an implicit connection between market transactions, the sale of products and the existence of prices. Money is taken to be the main indicator of market transactions since it expresses prices for goods and the possibility of commercial market exchange. Her picture can be contrasted with a *cost-based conception of markets*.²⁹³ Here, other than sale, trade is considered as the constitutive form of exchange. Like sale, trade

²⁹¹ Zuboff 2019, 69. For an overview of the widespread use of similar arguments in legal debates see Newman 2015, 160 ff.

²⁹² Zuboff 2019, 70.

²⁹³ I depart in some respect from Newman’s economic definition to fit my understanding of markets as institutions. For example, I do not consider the aspect of voluntariness as a necessary condition for an exchange to count as a market transaction. Still, my inspiration is due to Newman 2015, 163-174.

requires payment. Unlike sale, payment need not necessarily come in the form of monetary exchange. The cost-based conception is thus wider in scope and includes sale as one form of exchange since prices are simply interpreted as cost on a monetary scale. The cost-based conception of markets views exchanges as market transactions that are conditional on exchange cost. A market exchange happens where a consumer faces an exchange cost, whether monetary or otherwise, to receive the desired object of exchange.²⁹⁴ Therefore, prices are not solely connected to money but to costs.

Under the cost-based conception of markets, a full-fledged market exchange occurs if consumers need to transfer personal data other than for the original purpose of the transaction. If for example a news site requires a consent to personal data processing and targeted advertisement for “free” articles, this service is not without charge.²⁹⁵ Rather, something of economic value has been transferred, from consumer to publisher for otherwise they would not require and accept the exchanged information as an adequate compensation for their service. In other words, a trade occurred. Social media sites in particular invite users to share detailed data about themselves. As van den Hoven and colleagues conclude, “[w]hen the service is free, the data is needed as a form of payment.”²⁹⁶ Since Zero-Price Markets in the form of multi-sided markets can be described as arrangements that require users to exchange personal data as costs for service use, zero-price products are exchanged as a market transaction. From a cost-based conception of markets, zero-price products do not fall outside the scope of the marketplace, but impose *de facto* data costs. In other words, users are *de facto* customers in these commercial online settings.²⁹⁷

To conclude the discussion, let me briefly motivate and defend my claim that data exchange really serves a method of payment on online platforms such as YouTube and Google. A good way to approach the issue of personal data as exchange costs, is to investigate more closely why it seems misleading to assume that advertisers are the only customers of big tech companies, while individuals are only users. To illustrate this, consider a world where the commercialization of personal data collection is banned. In such a scenario, it is highly unlikely that users would continue to enjoy today’s number and quality of digital services and content “for free”. Rather, they would need to pay, and hereby I mean money, in order to search websites, read articles and watch videos online since the structure of multi-sided platforms would crumble down. Google’s high revenue

²⁹⁴ Lukes allows payment to include non-monetary cost. See Lukes 2005, 299 f.

²⁹⁵ The German newspaper Zeit Online is an example of this business practice. See Zeit Online GmbH 2020.

²⁹⁶ van den Hoven et al. 2020.

²⁹⁷ I will continue to speak of users and customers since there is no inherent contradiction between the two terms. Rather, I will refer to customers as paying users.

result from the possibility of linking search and advertisement via personal data. To deny that people already pay a non-monetary price simply neglects the actual costs carried by customers which enable this flood of zero-price products through the interrelatedness of the products.²⁹⁸ Apart from that, the absence of prices seems to be hardly sufficient to conclude that zero-price markets are no market activity. Rather, real exchange costs occur for consumers, which is an observation that is backed empirically. A German study found that the majority of users perceive themselves as customers of digital services and view the transactions as economic in nature, i.e., conditional upon payment with data.²⁹⁹ Beyond that, the news site example illustrates that content providers also conceive of the data collection and processing as a necessary condition in order to allow readers access to their articles. Hence, their profit relies on the personal data exchange and substitutes or rather enables profit. Taken together, I think there is enough reason and conceptual resources to describe the exchange of “free” online products for personal data as a full-fledged market transaction. The following chapter moves from the description of such personal data markets to the assessment of their moral limits.

5. The Moral Limits of Personal Data Markets

The following chapter five will collect the various discussion from the previous chapters in order to address the moral limits of personal data markets. As introduced in chapter two, the standard neoclassical picture of markets privileges free economic transactions between rational agents on the basis that they can achieve an ideal social state, i.e., pareto optimal market outcomes. From this perspective, government regulation is only admissible if optimality is not achievable due to market failures caused by externalities or imperfect competition. In order to challenge the superiority of the “free market”, chapter three discussed the notion of government intervention and presented three critical perspectives that offer a different normative perspective on markets and their limits. Commodification theory for example argues that some goods are simply not suitable to market transaction, since commercial exchange can degrade their moral value. From a different viewpoint, Debra Satz argues that markets can be noxious if they violate basic agency interests or rely on an asymmetrical standing of the exchanging parties. The question that I will address in the following chapter is whether personal data markets are morally problematic from these moral standpoints. I

²⁹⁸ Confronted with the data-free scenario, it could be replied that some of the services and platforms could survive by implementing different ad-based business models. A good example for this is DuckDuckGo, a search engine which minimizes data collection and displays ads solely based on search terms. As true as that might be, the problem is that it remains highly unlikely that the profits generated from such business models would be as significant as in a personal-data-rich economy. It is crucial to realize the scale at which the likes of Google and Facebook profit from personal data collection which far exceeds ad profits.

²⁹⁹ See Deutsches Institut für Vertrauen und Sicherheit im Internet 2014, 15 f. and Madden et al. 2014.

will thus investigate the moral reasons to regulate the “free” commercial exchange of personal data and the kind of harm that can spring from such transactions. In short, I will discuss whether and under what circumstances personal data should or should not be a tradeable commodity.

The previous chapter four presented two types of personal data markets, viz. Price Markets and Zero-Price Markets. On Price Markets personal data is bought and sold for money either between companies (B2B Markets) or between a customer and a business (C2B Markets). On Zero-Price Markets, data is used as a method of payment to access services or goods. For reasons of brevity, I will focus on, but not entirely restrict myself to, the normative discussion of Zero-Price Markets. These markets form a key part of the current digital economy and are most relevant for the everyday online experience. Where possible, my exposition will still be of a general nature since there are some issues that pertain to the moral qualities of personal data markets *per se*. This is because the particular characteristics of personal data play an important role in assessing whether it should be tradeable or not. Apart from that, I cannot directly engage with the specific moral implications of B2B Markets, even though I will make some room to discuss whether C2B Markets are a viable alternative to current commercial online settings. In order to address the moral acceptability of personal data markets, I will touch upon all three critical market perspectives from chapter three and discuss their relevance for personal data markets as presented in chapter four. The principal focus of chapter five is however, to apply of Satz’s noxious market framework to personal data markets. I will show how Samuel Bowles structural analysis of markets can support Satz’s framework in relevant dimensions.

Let me briefly illustrate my way of proceeding in the following chapter. Section 5.1. presents a short overview of the status quo of commercial personal data use and governance as an issue of individual self-management. This short excursion will clarify that my discussion of Zero-Price Markets will rely on the *de facto*, not the *de jure status* of personal data as a means of payment. Building on this, I will enter the discussion of the moral limits of personal data markets by addressing the issue of commodification in section 5.2. My aim is to show that personal data is not completely corrupted on markets due to commodification. This diagnosis motivates the application of the noxious market framework in order to uncover the relevant moral dimensions for regulating personal data markets. The following section 5.3. engages with the noxious sources or background conditions of personal data markets. Section 5.3.1. considers the aspect of weak agency, i.e., whether individuals can competently assess their decision to sell or pay with data. Next, section 5.3.2. moves on to underlying vulnerabilities on Zero-Price Markets and discusses, among other things, the role of personal data in addictive design. Subsequently, section 5.4. completes the application of the noxious market framework by identifying noxious consequences of personal

data markets. First, section 5.4.1. investigates dimensions of individual harm as they arise from the violation of both basic agency and welfare interests. Secondly, section 5.4.2. discusses societal harm for example regarding the role of inequality as well as constitutive exchanges as discussed by Samuel Bowles. The closing section 5.5. summarizes the main arguments and presents an overview.

5.1. Status Quo of Commercial Data Use

Before moving on to the assessment of the moral limits of Zero-Price Markets I want to take a brief look at the legal status quo of commercial personal data use and governance. Only recently, the EU updated its data protection legislation and enforced the General Data Protection Regulation (GDPR) in 2018. The new legal framework received much attention and praise for the strengthening of data protection as a fundamental right. Among other things, EU citizens now enjoy the right of access, the right to rectification, the right to data portability as well as “the right to be forgotten.”³⁰⁰ Moreover, special categories of personal data, so called sensitive data, receive a higher level of protection.³⁰¹ Apart from that, the status of personal data as an economic good is in large part granted by individuals themselves, i.e., in virtue of their consent to data sharing and processing for commercial purposes.

Previously to the enforcement of GDPR, another major debate concerning the commercial nature of personal data was triggered by the EU proposal for a new Directive “on certain aspects concerning contracts for the supply of digital content and digital services”³⁰² (DCSD) in 2015. Herein, the EU initially planned to explicitly recognize personal data on online platforms as counter-performance for “free” digital service or content.³⁰³ Prior, consent to the processing of personal data was *legally* never considered as a method of payment.³⁰⁴ After publication, the proposal provoked the change of the text due to several critical voices. Giovanni Buttarelli, then European Data Protection Supervisor (EDPS), drew a drastic comparison. In his view there

might well be a market for personal data, just like there is, tragically, a market for live human organs, but that does not mean that we can or should give that market the blessing of legislation.³⁰⁵

³⁰⁰ For all rights of the data subject see GDPR 2016, Articles 12-23.

³⁰¹ This includes “personal data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, [...] data concerning health or data concerning a natural person’s sex life”. GDPR 2016, Article 9.

³⁰² See DCSD Proposal 2015.

³⁰³ See DCSD Proposal 2015, 3.

³⁰⁴ See Metzger 2020, 1 f.

³⁰⁵ European Data Protection Supervisor 2017, 7.

As a result of parliamentary and public debate, the DCSD is now less explicit about personal data exchange as payment or counter-performance.³⁰⁶ The legal blessing of Zero-Price Markets did not materialize, even though the EDPS fairly straightforwardly admits that data markets exist. With respect hereto, Axel Metzger, an outspoken advocate of personal data markets, points out that EU regulation seems to be beside the point. As he puts it, consumers are “engaged on a daily basis in the commercialisation of their personal data.”³⁰⁷ The gist of this view is that the *de jure* status of personal data is currently out of touch with its *de facto* status. As a result, the DCSD and GDPR *implicitly* allow for the commercialization of personal data on markets. The purported contradiction between commercial use of personal data and data protection as a fundamental right is tolerated in reality.

In the following, I will leave the complexities of the legal debate aside and concentrate on the *de facto* status of data as a means of payment. My exposition will be of a general philosophical nature, in order to capture the main problems with personal data markets and especially with data as payment. As a result of this general outlook, some problems may be more pertinent in the U.S. than in the E.U. Despite that, Daniel Solove argues that we can still distill a common core in the approach to privacy and data protection in Western societies since the 1970’s. According to him, the main focal point of privacy legislation and data governance has been individual consent to the collection, usage or processing of data, or in short, personal data self-management.³⁰⁸ Whether personal data *should* be used for commercial purposes is to be decided by individual citizens themselves.³⁰⁹

Under the current approach, the law provides people with a set of rights to enable them to make decisions about how to manage their data. These rights consist primarily of rights to notice, access, and consent regarding the collection, use, and disclosure of personal data. The goal of this bundle of rights is to provide people with control over their personal data, and through this control people can decide for themselves how to weigh the costs and benefits of the collection, use, or disclosure of their information.³¹⁰

³⁰⁶ See DCSD 2019.

³⁰⁷ Metzger 2020, 11.

³⁰⁸ In the original, Solove uses the term privacy self-management. I will not adopt this terminology, as it is closely connected to his taxonomical understanding of privacy. For reasons of simplicity, I will not engage in this wider discussion and simply address the issue as personal data self-management. This has the advantage of conceiving of privacy as a central concern, without understanding all problems with personal data self-management as related to privacy. See Solove 2006 and van den Hoven et al. 2020.

³⁰⁹ See Solove 2013, 1880.

³¹⁰ Solove 2013, 1880.

Despite new regulatory mechanisms like the GDPR, the core assumption still stands that individuals know best what's in their interest when it comes to data exchange. My discussion will engage with this idea of individual self-management of data and the centrality of individual consent to the commercial exchange of data in market settings.

5.2. Commodification of What?

Before addressing individual choice explicitly, I will first take issue with the moral worry of commodification as it is for example centrally expressed by the EDPS. In his view, markets in personal data somehow affect the very idea of data protection as a fundamental right through the commodification of personal data. Like a market in live human organs, personal data markets appear as a morally tragic institution. Moreover, the EDP adds the worry that the notion of data protection as a fundamental right should not be reduced to a commercial interest.³¹¹

The articulation of commodification theory in chapter three can help us entangle this claim. In section 3.3., I presented commodification as the process where the intrinsic moral value of a good is degraded or fully dissolved if exchanged on markets. Arguments that allude to commodification prompt us to consider whether it is morally objectionable in and of itself to treat a good as marketable. As applied to single markets, I argued that the moral corruption caused by commodification can be a matter of degree and separated two distinct claims that have different policy implications. First, commodifying a good, i.e., assigning the commodity status to it, can *completely corrupt* its value if this is incompatible with its moral conception. The paradigmatic example of complete corruption is slavery, where owning, buying and selling a human being is incommensurate with the idea of human dignity. Provided that the moral conception of human dignity is indeed widely accepted, commodification theory provides a conclusive reason to block such market arrangements. The argument against slave markets is here entirely rooted in the moral objection to treating people as property or rather as means to an end.

Secondly, commodification also comes in a lesser degree if the situation is more complex. A good is *incompletely corrupted* if commodification stands in conceptual tension with its moral value. Consider again the example of prostitution. Does sexual labor fully corrupt human dignity? Prima facie, the answer is unclear since an assessment is for example influenced by the actual market arrangement. The alleged instrumentalization of men or women due to prostitution is unlikely to be decided solely on the basis of a concept of human dignity, but on the basis of many other considerations like fair working conditions etc.³¹² A good indicator of incomplete corruption is the

³¹¹ See European Data Protection Supervisor 2017, executive summary.

³¹² See Satz 2010, 143.

coexistence of a plurality of moral conceptions of a good, as it is arguably the case when it comes to sex. In the face of incomplete corruption, the reasons to prohibit certain markets remain inconclusive. Despite that, the diagnosis helps to justify market regulation for example to sustain non-market attitudes or strengthen the personality rights of sex workers.

In the following, I will argue that markets in personal data are best understood as instances of incomplete corruption. The easiest argumentative strategy to achieve this conclusion, is to point out that markets in personal data are most likely no cases of complete corruption, i.e., they are not in full contradiction with a moral conception of the good in question. Before doing so, it should be mentioned that many scholars do not clearly distinguish between different approaches to the limits of markets as presented in this thesis.³¹³ As a result, claims regarding the commodification of personal data and the unfairness of market arrangements are discussed parallel or as virtually the same argument. In order to clearly delineate between different objects of critique, I think it is more helpful to keep the two strands of arguments apart. Whereas Satz's noxious market approach addresses the moral legitimacy of the exchange relation on markets, the commodification argument, in the version reconstructed here, relates to the intrinsic moral value of the good exchanged.

In the manner of Polanyi's empirical definition, Paul Schwartz presents a helpful starting point for discussion. According to him, "commodified personal data is a discrete package of personal information that can be exchanged for something else."³¹⁴ In line with my reconstruction in chapter three and four, personal data is assigned the commodity status as an appropriate object of exchange on the various types of markets presented. On Price Markets, personal data receives an explicit price tag and is exchanged for money. On Zero-Price Markets, personal data is used as a method of payment, i.e., it is exchanged for service use. Commodification theory now asks whether the assignment of the commodity status corrupts our moral conception of the good in question. As should readily appear, this question has no easy answer with respect to personal data markets. The reason for this is that it is *prima facie* unclear, what a moral conception of personal data amounts to.

This diagnosis indicates that the commercial usage of personal data is most likely not a case of complete corruption due to the absence of an immediate moral conception of personal data itself.

³¹³ Schwartz for example frequently alludes to commodification in his discussion of property rights and personal data. In the end, he discards markets in personal data mainly for fairness considerations and problems of asymmetric information that result in market failure. While this concern is surely legitimate, it is better classified as a fairness issue leading to unfavorable social results rather than one pertaining to the commodification and corruption of personal data. See Schwartz 2004.

³¹⁴ Schwartz 2004, 2069.

Unlike the corruption of human dignity in slavery, the moral wrong in the commodification of personal data takes a more indirect and therefore contestable way. Corruption only arises from the connection of commercial personal data use with other moral concepts. Several scholars proceed in this way and stress the importance of personal data for notions of the self and the person.³¹⁵ By adapting the famous phrase of Amartya Sen, such discussions “have offered us a wide menu in answer to the question: [commodification] of what?”³¹⁶ The options range from privacy³¹⁷ and dignity³¹⁸ to digital identity and autonomy,³¹⁹ as well as combinations thereof. All such approaches however face the same the problem. They cannot easily equate the commodification of privacy or dignity with the commodification of personal data.³²⁰ As a result, such views are unlikely to claim complete corruption. Beyond that, they will encounter competing and alternative conceptions that establish different relationships with moral values and personal data.³²¹ Consider again the case of corruption with respect to the fundamental right of data protection. In this case, even EU law itself accords individuals the ability to decide whether personal data should be used commercially or not. Therefore, a fundamental right to data protection as granted by the GDPR does not seem to be in full contradiction with the commercial usage of personal data, as long as an individual is competent to choose whether it is in her or his best interest.

As it stands, no moral conception of personal data has emerged that is widely accepted and in *full conceptual contradiction* with all instances of personal data trade. For the remainder of this thesis, I will thus avoid engaging in greater detail with the question as to the commodification of what? In doing so, I do not want to imply that this question is somehow irrelevant. In fact, commodification theory contributes substantially to the discussion of the moral limits of personal data markets by tying personal data to various moral ideals. The relevant point for the following discussion is however that these arguments will not serve as a conclusive reason to block personal data trade for reasons of commodification in a broadly liberal society. To put it differently, my assumption is that no moral conception of personal data will lead us to think that *any* market arrangement that involves

³¹⁵ The issue of commodification of personal data is sometimes discussed under the term datafication. I will avoid this terminology. See Viljoen Unpublished, 7.

³¹⁶ Sen 1979, 1.

³¹⁷ Nissenbaum’s account of contextual integrity builds on Walzer’s idea of sphere differentiation. See Nissenbaum 2010.

³¹⁸ See Zuboff 2019.

³¹⁹ See Cohen 2019.

³²⁰ By comparison, personal data, like sex, only concerns an aspect of a person. Slavery on the other hand affects the person in its full normative sense.

³²¹ A competing version of Nissenbaum’s account of privacy as contextual integrity are control-based notions of privacy. Several economists, Kenneth Laudon among them, argue that control over personal data also includes selling this information. See Laudon 1996.

personal data trade is wrong in and of itself, irrespective of the circumstances and regulatory provisions. In light of this diagnosis, I will take up Debra Satz's advice and look for other moral dimensions that can give us a better direction on how to assess and regulate such markets.³²² Satz for example prompts us to consider whether individuals are in fact competent to decide for themselves what's in their best interest when it comes to personal data markets. In her perspective, the moral worry with personal data exchange on markets resides not so much with the corruption of a moral conception of the exchanged good, but with the background conditions of individual choices.

5.3. Noxious Sources of Personal Data Markets

The following section will investigate the noxious sources of personal data markets. Thus, my discussion will move on to the application of Satz's framework. In contrast to commodification theory, she takes the exchange relations between the transacting agents, rather than the moral conception of the exchanged good, as the proper object of critique. My particular concern in the following two sections will be the background conditions within which market agents engage in personal data exchange. As described in chapter 3.4., Satz characterizes these "underlying conditions"³²³ as the sources of market transactions. To be more precise, Satz takes these sources to reflect an assessment of the moral legitimacy of economic trade.

With respect to the sources of market transactions, morally worrisome markets typically exhibit either weak agency and asymmetric information or occur in circumstance of underlying vulnerabilities. Whereas agency and information failures pertain to the very act of transacting (e.g., as ignorance regarding outcomes or associated risks), extreme vulnerabilities reflect the environment or living conditions which may prompt individuals to engage in the transaction in the first place. Personal data exchange can thus be problematic if an agreement to the exchange results from weak agency or is affected by underlying vulnerabilities. By extension, such agreement would carry only little normative force regarding the actual enforcement of contracts.³²⁴ The first section 5.3.1. will concentrate on weak agency and information failures. In order to fully elucidate the decision problem for individuals on personal data markets, I will show how Satz's criterion ties

³²² See again Satz 2012.

³²³ Satz 2010, 96.

³²⁴ See Satz 2010, 95 ff. With respect hereto, both dimensions are different from, but also linked to the consequences of market exchange. On the one hand, adverse outcomes are an important contributing factor to the normative relevance of agency and information failures as well as underlying vulnerabilities. On the other hand, a lack of agential control or ignorance about relevant risks is likely to result in negative consequences for individuals or society.

with Samuel Bowles's notion of contractual incompleteness. The subsequent section 5.3.2 covers issues regarding underlying vulnerabilities in personal data markets.

5.3.1. Weak Agency

I will now turn to the question whether human agents are well-equipped to exchange personal data in commercial transactions. If confronted with the choice to pay with data for service use on Zero-Price Markets or to receive payment for data disclosure on hypothetical C2B Markets, could we safely assume that people make decisions that are in their best interest? To put it slightly different, how close are personal data markets to ideal market conditions of full information and agential control? To address this question, I will investigate whether weak agency is a relevant problem regarding the moral legitimacy of personal data markets.

In Satz's view, weak or highly asymmetric agency occurs where market participants are to a certain extent ignorant about relevant characteristics of the good exchanged and/or about the consequences that result from the transaction.³²⁵ The following set of considerations will confirm that commercial personal data exchange on C2B and Zero-Price Markets suffers from both problems. First, the particular characteristics of personal data are problematic for market agents since the economic value of personal data is essentially tied to the so-called aggregation effect as well as the content indeterminacy of personal data at the point of exchange. As a structural feature of personal data markets, individuals (as well as companies) are in fact ignorant about the information they exchange.³²⁶ Hence, they can neither properly calculate what their data is worth nor what possible risks they will incur downstream the choice. In addition, individual agents likely lack the relevant capacities to fully understand the terms of the transaction on personal data markets. This is the result of asymmetrical and incomplete information, bounded rationality and various behavioral biases akin to the commercial exchange of personal data. In sum, there is reason to doubt that individual agreement to the terms of transaction on personal data market carries much normative force for the enforcement of contracts since they necessarily remain incomplete, in the sense specified by Samuel Bowles.

In light of this short overview of the larger argument, I want to begin by recapitulating the most important characteristics of personal data. With respect hereto, my account of these features does not amount to a moral conception of personal data. Rather, it is a description of relevant facts about the good exchanged which has implications for the assessment of the exchange relation in question. As already outlined in section 4.1., data is not equitable to information. Rather,

³²⁵ See Satz 2010, 96.

³²⁶ Individuals are not ignorant about the data points they are exchanging.

information is created from data sets through interpretation. As a consequence, the meaning of data is context-dependent on usage. In order to arrive at meaningful data, i.e., information, data needs to be analyzed. In this respect, the data to which it is related or linked alters the capacity to retrieve information on a large scale. This is why personal data is taxonomically neutral, i.e., the meaning and usefulness of data points is not tied or restricted to a specific context. Secondly, personal data is not private data. The personal aspect of data designates that it is identity-relevant information, i.e., about a natural person. Hence, personal data is not just private or sensitive data, but any data that is or can be about a particular person. Thirdly, data is multiple-realizable and can be easily copied, transformed and stored on databases, at least if it is (or transformed into) digital data. Other than natural resources like oil, data does not vanish through consumption, but can be re-used multiple times for varying purposes. Moreover, data has no single origin and is extracted from multiple sources. Data streams are not restricted to just one channel, but flow from computers, mobile phones, public registries etc. They come in various formats, can be (un-)structured or are (dis-)continually created. As increasingly more aspects of life migrate to the digital realm, data collection and production are accelerating. Last but not least, it is important to note that Big Data has a great influence on all of the above features. Since the emergence of powerful data analytics such as machine learning and the vast amount of data with which it can be fed from disparate databases, it is more likely that already a small and random collection of personal data points is highly and repeatedly informative as well as more easily linkable to a natural person.

The outline of these basic features of personal data already indicates several epistemic hurdles to assess personal data as a tradeable commodity. One of the most important issues is the *content indeterminacy of personal data*. Since the meaning of data or the actual information contained in a data set is dependent on context and the methods of processing, it is antecedently either hard to know or in fact unknowable for a single data subject what they are handing over. Even though companies vaguely specify or notice the secondary purpose of personal data usage, e.g., for targeted advertisement, service improvement or product innovation, it remains unclear just what the information content is that one is trading with a company when choosing to do so. In the context of Big Data, a cookie is not just a cookie, but an informative part of a bigger puzzle. In this respect, it is even impossible for companies themselves to determine the information inherent in the data set they want to collect. As discussed in section 4.2., data-driven businesses that analyze large datasets often seek to find novel correlations or unanticipated insights. To consent to such practices requires a considerable leap of faith from the perspectives of data subjects.³²⁷

³²⁷ See Barocas and Nissenbaum 2014a, 59 ff. See also Solove 2013, 1885.

Content indeterminacy is especially problematic for individuals on Zero-Price Markets, or any other structurally similar market, where personal data collection is continuous, fine-grained and extensive.³²⁸ Daniel Solove argues that self-determined personal data management is in this context nearly impossible. His main worry is the problem of aggregation or the *aggregation effect*:

Suppose a person gives out an innocuous piece of data at one point in time, thinking that he or she is not revealing anything sensitive. At other points in time, the person reveals equally nonsensitive data. Unexpectedly, this data might be combined and analyzed to reveal sensitive facts about the person. The person never disclosed these facts nor anticipated that they would be uncovered.³²⁹

Not only does data analytics have a large role to play in determining the content of each disclosed data point in time. Beyond that, cumulative effects can reveal new information due to the combination of disconnected data sets.³³⁰ When trading their data, individuals cannot simply take the data points for what they are “because their value or insightfulness is only established through processing.”³³¹ On commercial markets, the actual meaning retrievable from data is influenced by the technical skills of a given company as well as the existing data that a corporation already has (or can acquire) about a customer.³³² This crucial information is however inaccessible. Therefore, the problem of content indeterminacy is worsened by asymmetrical and incomplete information regarding the knowledge base and technical capabilities of corporations. Moreover, it increases with market concentration and monopolization as well as the existence of B2B Markets. Since Google or Facebook employ better informational technology and possess a greater volume and variety of customer data, an individual’s uncertainty as to what information is in fact traded becomes increasingly bigger.³³³ Moreover, due to collaborations with the data broker industry, the integration of personal data is becoming pervasive and ubiquitous. Even though users may deliberately choose not to reveal certain attributes, these may still be statistically predictable from other data points as profiling relies on linking people with similar group characteristics.³³⁴ Accordingly, it is hard for individuals to determine exactly what data is sensitive, private or

³²⁸ Depending on the actual institutionalization of C2B Markets, it would be possible to circumvent this problem. In Laudon’s proposal, data is understood as literal information. See Laudon 1996. If markets are intended to fuel Big Data as specified in chapter 3, the problem of content indeterminacy reappears.

³²⁹ Solove 2013, 1889.

³³⁰ See again Fluit et al. 2019.

³³¹ Mittelstadt et al. 2016, 10.

³³² See Hummel et al. 2018, section 4.

³³³ See Zuboff 2015, 83 f. and Zuboff 2020, 188 f.

³³⁴ I will revisit this point at length in later sections. See Mittelstadt 2017. See also Vilijoen 2020. For a demonstration see Kosinski, Stillwell, and Graepel 2013.

unproblematic and unclear how agents could properly attribute resulting harm to its original source.³³⁵

The above-said has implications for the commercial bargaining problem on personal data markets which involves the weighing of benefits and downturns. Since the information content of personal data is indeterminate, a market transaction involving personal data is likely to include consequences and risks that cannot be known at the point of exchange.³³⁶ In other words, the value of personal data is hard to know for individuals while exchanging data. Cloos and colleagues show for example that the sensitivity of information elevates the price an individual is willing to accept for that data.³³⁷ Moreover, findings of Benndorf and Normann indicate that data subjects show a declining willingness to sell personal data if it is non-anonymized, i.e., clearly linked to contact details.³³⁸ This information is however missing. In reality, individuals are in no position to know what information companies already acquired about them.³³⁹ Moreover, companies are not dependent on identifiable information since profiling creates value and sensitive information from linking people to one another based on group characteristics.³⁴⁰ Individuals can hardly predict the information contained in a given data set. As a result, the reservation to sell data (or exchange it), provided that it is easily linkable or sensitive, is unlikely to be adequately representable in personal data transactions. In addition, the risk of information-related harm is neither linear as it can accelerate at some point nor static since it is dependent on the specific usage and processing.³⁴¹ Taken together, this leaves corporations with considerable market power in comparison to individual market agents.

I will now move from general problems regarding the characteristics of personal data as a tradeable commodity to the capacities necessary for meaningful agential control in data disclosure. With respect hereto, Acquisti and Grossklags present insights from behavioral economics to discuss several agency problems. In addition to incomplete information regarding technical and legal knowledge,³⁴² the authors point to two more challenges that I want to discuss in more detail. Under the provision that information would be complete, i.e., that individuals could know the

³³⁵ See Ozer 2012, 230.

³³⁶ See Solove 2013, 1890.

³³⁷ See Cloos et al. 2019.

³³⁸ See Benndorf and Normann 2018, 1275.

³³⁹ As the overview of B2B Markets in chapter three has revealed, the scale of information available on individuals is beyond the expectation of ordinary people.

³⁴⁰ See Mittelstadt et al. 2016, 10.

³⁴¹ See Viljoen Unpublished, 41.

³⁴² Acquisti and Grossklags show that interviewees are largely overconfident regarding associated risks of data disclosure, e.g., identity theft, and underestimated the predictive potential of Big Data, e.g., the possibility to uniquely identify a U.S. citizen by the help of sex, date of birth and the zip code. Participants also had a significant lack of legal knowledge. See Acquisti and Grossklags 2005, 29 f.

information contained in ore derivable from a data set, the authors argue that human beings likely lack the necessary cognitive abilities to process relevant aspects of decisions concerning personal data.³⁴³ This is because the overall complexity of the digital commercial environment is too demanding for the *bounded rationality* of regular human beings. The natural cognitive capabilities of market agents seem to be too limited to process all relevant aspects of commercial personal data exchange, especially on Zero-Price Markets. As an indicator for this, Acquisti and Grossklags found that data subjects regularly employ “simplified mental models”³⁴⁴ in order to offset the complexity inherent to personal data transactions. This in turn leads to an incorrect and oversimplified assessment of commercial exchanges involving personal data.³⁴⁵ Next to bounded rationality and incomplete information, Acquisti and Grossklags also remark that individuals face the challenge of falling prey to behavioral shortcomings and biases or systematically observable *irrational behavior* in data exchange.³⁴⁶ So even if information were complete and individuals would have the cognitive ability to choose rationally, adverse behavioral tendencies like time inconsistency could still overturn a rational and self-interested data disclosure.³⁴⁷ Since risks or adverse outcomes only appear in the future, individuals might be tempted to opt into data transfer for “free” service use, even though the present reward is not big enough to actually justify future consequences.³⁴⁸ Acquisti and Grossklags conclude that “time inconsistencies in discounting could lead to underprotection and overrelease of personal information.”³⁴⁹ Beyond the issue of time inconsistencies, Cho, Lee and Chung found that individuals are unrealistically optimistic regarding their own ability to control online risks in comparison to others. Users also perceive their vulnerability to be much lower than their peers’. In other words, users are systematically overconfident regarding their ability to mitigate harm and calculate possible risks for themselves. As a result of this strong optimism bias, people tend to attribute risks and future harm from personal data collection and use to others, but not to themselves.³⁵⁰

³⁴³ The authors discuss decisions that relate to information as informational privacy. I will avoid this terminology in this section. See Acquisti and Grossklags 2005, 26.

³⁴⁴ Acquisti and Grossklags 2005, 30 f.

³⁴⁵ See Acquisti and Grossklags 2005, 30 f. The term bounded rationality is not meant to confer the irrationality of human agents, but their limited cognitive capacities. See for example Bowles 2004, 97. Bounded rationality might also explain why such a small percentage of people actually reads privacy policies and notices. Since the majority of users lacks both the sufficient legal and technical knowledge and ability to comprehend complex legal texts, they just skip reading them. For an overview of literature on the issue see Solove 2013, 1884 f.

³⁴⁶ Here, behavior is judged as (ir-)rational from the perspective of economic rational choice theory, i.e., in relation to choosing optimal means to achieve given ends. See again section 2.1.

³⁴⁷ See Acquisti and Grossklags 2005, 26 f.

³⁴⁸ The authors found that 44 percent of the participants acted time inconsistently. See Acquisti and Grossklags 2005, 31 f.

³⁴⁹ Acquisti and Grossklags 2005, 32.

³⁵⁰ See Cho, Lee, and Chung 2010.

Apart from these more general worries concerning the possibility to trade personal data, Zero-Price Markets exhibit a unique aspect of weakened agency. When data is traded in the form of compensation for service use, the absence of monetary prices can have a distorting effect on the perceived utility of a good or service. Newman argues that this so-called *Zero-Price Effect* “suggests that when prices reach zero, consumer demand skyrockets—even where a standard cost-benefit analysis seems to favor a non-zero-price alternative.”³⁵¹ In other words, consumers behave as if a “free” good not only reduces their costs, but actually adds a benefit to the product. Ozer observes that demand for such “free” products increases over-proportionately, even though the comparative valuations of products do not justify this increase. As a result, “consumers may fail to consider the tradeoffs implicit in using the service.”³⁵² With respect hereto, Shampner and Ariely argue that the best explanation for the zero-price effect is that people affectively overreact to the “free” offer, which apparently has “no cost”. According to this explanation, individuals no longer deliberate the costs and benefits of the zero-price option, but simply pick it.³⁵³ In the face of a missing price tag, individuals fall prey to the implicit data (and time) costs in commercial online settings.

What about strategies to mitigate above mentioned issues? Are these problems really inherent to commercial data exchange or can we avoid them in personal data markets? One reasonable way to mitigate the various hurdles would be to achieve a less complex consent and transaction mechanism that allow individuals to make better choices for themselves. If decisions are in fact overly demanding, a good policy solution would be to simplify the relevant facts and increase understandability and transparency for customers. Unfortunately, empirical research shows “only marginal improvement in consumer understanding where privacy policies get expressed as tables, icons, or labels, assuming the consumer even reads them.”³⁵⁴ Beyond that, Nissenbaum and Barocas argue that this approach results in a *transparency paradox*, where clarity leads to oversimplification and distortion of the actual terms of the transactions. At bottom, they hold that the inherent complexity of data exchange and processing is irreducible. The level of complexity “necessary to convey properly the impact of the information practices in question would confound even sophisticated users.”³⁵⁵ Accordingly, plain-language or graphic visualization as well as easier operationalization of decision-making cannot, in their view, achieve the appropriate level of

³⁵¹ Newman 2016, 74.

³⁵² Ozer 2012, 228.

³⁵³ See Shampner and Ariely 2006, 20-26.

³⁵⁴ Calo 2012, 1033.

³⁵⁵ Barocas and Nissenbaum 2014b, 32.

informedness to ensure legitimate consent to personal data transactions.³⁵⁶ Nissenbaum and Barocas argue that the problem really is inherent to the individual agreement to personal data transaction.

Taken together, the discussion of weak agency has brought two important things to light. First, defenses of personal data markets referring to the voluntary and competent choices of individuals will carry only little normative force regarding the legitimacy of those transactions. The cognitive hurdles to make an informed decision include incomplete and asymmetrical information, bounded rationality as well as systematically irrational behavior and the zero-price effect. Secondly, arguments that favor personal data markets for their ability to satisfy consumer preferences optimally will need to make reference to the weak agency of market participants. A good way to illustrate this situation is to employ Samuel Bowles's analysis of contested exchanges on markets. As discussed in section 3.2., Bowles understands particular market exchanges as contested if they exhibit *contractual incompleteness*. This is the case if the good exchanged is hard to fully formulate since it is too "complex or difficult to monitor that comprehensive contracts are not feasible or enforceable."³⁵⁷ As a result, the enforcement of contractual claims remain endogenous to the exchange. On personal data markets, such a situation occurs for several reasons. On the one hand, the characteristics of personal data make it the case that the information content cannot be fully specified in a contract. Since meaning is derived from data through antecedent analytics, a clear description of the exchanged information is very hard to obtain and most likely not even intended by companies.³⁵⁸ Moreover, fully specifying such contracts is hampered by the transparency paradox. As Barocas and Nissenbaum argue, the complexity necessary to convey relevant information to users is nearly insurmountable. And even if such contracts could be fully specified, comprehending and monitoring them would require expert knowledge well beyond the level of ordinary people. Paul Schwartz argues that this situation leads to an imbalance of market power which will likely result in a "lemon equilibrium", were customers are confronted with bad contracts regarding data disclosure.³⁵⁹ A more straightforward (and non-economical) way of putting this is that outcomes of personal data markets are unfair to individuals since the price of personal data is

³⁵⁶ See Barocas and Nissenbaum 2014a, 58 f. As Solove has put it, proposals to simplify consent to personal data exchange "neglect a fundamental dilemma of notice: making it simple and easy to understand conflicts with fully informing people about the consequences of giving up data, which are quite complex if explained in sufficient detail to be meaningful." Solove 2013, 1885.

³⁵⁷ Bowles and Gintis 1990, 167.

³⁵⁸ See Solove 2013, 1893. See also Litman 1298 and Sadowski 2019, 4.

³⁵⁹ In his discussion, Schwartz investigates C2B Markets and property rights for personal data. See Schwartz 2004, 2076-2081. The term lemon equilibrium derives from Akerlof's work on asymmetrical information and market failure as mentioned in chapter two. See again Akerlof 1970.

unilaterally influenced by companies.³⁶⁰ Left without the proper capabilities to comprehend the range of possible risks, Daniel Solove concludes that it “is virtually impossible for people to weigh the costs and benefits of revealing information or permitting its use or transfer”³⁶¹. Accordingly, personal data markets are most likely to be noxious due to weak agency.

5.3.2. Vulnerability

In order to complete the analysis of the noxious sources of personal data markets, I will now turn to the dimension of underlying vulnerabilities. According to Satz, underlying vulnerabilities of market transactions refer to the influences of both the circumstances of choice as well as living conditions of individuals to engage in a market transaction. Thus, the moral acceptability of markets is in part dependent on the standing of the market participants towards one another. To illustrate this, consider again the aspect of weak agency. In the previous section, I showed how systematic irrationality in human decision-making as well as certain features of personal data make it hard for agents to correctly assess the value of personal data as a marketable good. The central task was to analyze whether individual agents are well-equipped to exchange personal data on markets. The dimension of vulnerability adds more complexity to this picture since it looks into the structural aspects of the exchange. In order to assess underlying vulnerabilities, Satz considers questions such as: Is the good basic to one of the parties and in short supply or do people enter the exchange from a position of poverty? How do the parties relate to one another and do their capabilities differ to a relevant degree? Therefore, the dimension of vulnerability directs attention to the circumstances in which people agree to the terms of a transaction.³⁶² In order to properly deal with these questions, I will focus exclusively on underlying vulnerabilities of Zero-Price Markets.³⁶³

In her exposition of the noxious sources of markets, Satz makes two observations which I take to be critical for assessing the moral acceptability of paying with personal data for zero-price products. As a first step, Satz indicates how to detect markets that are potentially noxious. In her view, transacting agents are likely to be exploited when “the participants have highly unequal needs for the goods being exchanged.”³⁶⁴ Accordingly, markets can be noxious if the parties have

³⁶⁰ Note that this description fits the neoclassical definition of market power as the ability to influence the going market price. See again Varian 2014, 414.

³⁶¹ Solove 2013, 1881.

³⁶² See Satz 2010, 97 f.

³⁶³ Additionally, I have to avoid several important discussions that deal with vulnerabilities and the commercial exchange of personal data. One central issue are desperate data exchanges where individuals engage in a transaction for the lack of income alternatives. See for example Viljoen Unpublished, 41 and Schwartz 2004, 2086. Moreover, I will not address the social importance of digital platforms and possible associated vulnerabilities. For a short discussion see Zuboff 2020, 10 f. and Zuboff 2015, 85. Lastly, I cannot properly deal with the particular vulnerabilities that children face on Zero-Price Markets.

³⁶⁴ Satz 2010, 97.

different interests in a good as this can lead to asymmetrical consequences. Albeit her chief example are goods that are desperately needed, I want to argue that we can also recognize this particular structural aspect on Zero-Price Markets. To see why consider that the exchanged data is literally personal, i.e., about only one of the parties. By implication, this leaves individuals with entirely different risks than companies, e.g., exposure to information-related harms.³⁶⁵ In addition (and in part for that reason), the market agents make widely different use of the good. As a matter of fact, the objectives of individuals and companies seem to be diametrically opposed on Zero-Price Markets as the structure of multi-sided markets shows. Whereas individuals have reason to minimize the circulation of their personal data, data-driven companies seek to extend the production and recording of it, in order to increase opportunities for profit via the interrelatedness of products.³⁶⁶ In this sense, data transfer on Zero-Price Markets is only a secondary transaction for individuals as a means to access “free” services, but of the essence for companies monetizing this personal data.³⁶⁷ Therefore, Zero-Price Markets fit the description of markets that are potentially noxious due to underlying vulnerabilities. The balance of potential risks is unequally distributed as a structural feature of such markets.

The relevant question now becomes whether and how companies deal with their privileged position in the market setting, which leads us to Satz’s second observation. Satz holds that exploitation is likely to occur where “people come to the market with [...] widely different capacities to understand the terms of their transactions”³⁶⁸. In this case, the standing of the parties is problematic, since only one agent is vulnerable to the other, not only with respect to the personal consequences but also regarding the abilities to correctly understand the outcomes in the first place. As discussed in the previous chapter, this condition holds as well on Zero-Price Markets for reasons of weak agency. However, current Zero-Price Markets show structural features that not only “*reflect* the different and underlying positions of market agents but [...] also *exacerbate* them by the way they operate.”³⁶⁹ In order to demonstrate this additional feature in the following, I will investigate two specific and common business practices that arise from deliberate design choices of companies, viz. dark patterns and addiction by design. I will thus argue that Zero-Price Markets are not only morally problematic as they exploit existing vulnerabilities but in fact deepen weak

³⁶⁵ See van den Hoven 2009, 311. I will discuss harmful consequences for individuals in section 4.3.1.

³⁶⁶ See Human and Cech 2020.

³⁶⁷ See also Acquisti, Taylor, and Wagman 2016, 448.

³⁶⁸ Satz 2010, 97.

³⁶⁹ Satz 2010, 98. Emphasis in the original.

agency. Companies deliberately shape online consenting so as to further the maximization of data collection as well as the time spent with digital products.

The fact that Zero-Price Markets have a special tendency to exploit users, is rooted in their digital nature. Since consent banners and user profile menus are coded and carefully constructed by companies themselves, web designers encounter viable opportunities to push or *nudge* users into preferred directions via user interfaces. With respect hereto, the term nudging, originally coined by the behavioral economists Thaler and Sunstein, refers to the practice of shaping choices by attending to behavioral and cognitive shortcomings.³⁷⁰ As already discussed in the previous section, the study of behavioral economics suggests that individuals are often highly influenced by presumably irrelevant aspects of a choice, e.g., the assembly of options. When shopping for example, people regularly fail to select what they “really” prefer (i.e., they fail to choose rationally), but simply pick those items that are placed on eye-level. Beyond that, humans can also be very bad decision-makers, systematically favoring small gains in the present over future higher ones or using misguided heuristics especially with respect to statistical evaluations.³⁷¹ Accordingly, nudging can be employed to enable better decision making, by removing weak agency.³⁷² Daniel Solove for example proposed to use nudges as part of a larger strategy to ensure self-determined personal data disclosure.³⁷³

In contrast to such an enabling use, data companies utilize behavioral insights in a different manner. With respect hereto, Harry Brignull was one of the first to investigate the manipulative potential of commercial user design or what he calls *dark patterns*.³⁷⁴ In contrast to employing individually beneficial nudges, that would be designed to improve an individual’s decision, dark patterns are best understood as commercially beneficial nudges. Rather than designing choice architecture (i.e., the set-up of available options) in user interfaces to eliminate or curtail bias and weak agency, dark patterns deliberately exploit cognitive shortcomings and behavioral tendencies

³⁷⁰ Thaler and Sunstein define a nudge as “any aspect of the choice architecture that alters people’s behavior in a predictable way without forbidding any options or significantly changing their economic incentives.” Thaler and Sunstein 2008, 6.

³⁷¹ Thaler and Sunstein coined the term Libertarian Paternalism to stress that nudging is a liberty-preserving way to influence peoples’ decisions by moving people in the direction of making the right decisions “as judged by themselves.” Thaler and Sunstein 2008, 252. See also Thaler and Sunstein 2003, 176.

³⁷² The U.S. government employed behavioral insights to design retirement plans in a way that “privileges” options which are presumably in the best interest of individuals. For a discussion see Kirchgässner 2015.

³⁷³ See Solove 2013, 1901.

³⁷⁴ See Brignull 2011. Before Brignull, Schwartz has discussed such practices as “smokescreen tactics”. See Schwartz 2004, 2080.

so as to achieve what is in the self-interest of the data collecting company.³⁷⁵ In order to collect as much personal data as possible, companies actively and purposefully complicate digital consenting so as to one-sidedly ensure their preferred level of data flow. In this way, consumers' vulnerability increases due to the asymmetric control in shaping the environment of exchange on Zero-Price Markets.

The practice of dark patterns is widespread, especially among big tech companies that rely on multi-sided markets and personal data analytics as a business model. In their investigation of the data collection practices of Google, Facebook and Microsoft, the Norwegian Consumer Council found that dark patterns “are used to nudge users towards privacy intrusive option.”³⁷⁶ Among the observed techniques are

privacy intrusive default settings, misleading wording, giving users an illusion of control, hiding away privacy-friendly choices, take-it-or-leave-it choices, and choice architectures where choosing the privacy friendly option requires more effort for the users.³⁷⁷

In practice, this means for example that both Facebook and Google regularly select data-intensive options as the default setting. Since users tentatively stick to default options, both companies routinely ask the highest possible price in terms of data cost from customers.³⁷⁸ Another investigation of online consent formats by Human and Cech stresses the severity of deliberate cognitive strains on customers. One of many methods that Microsoft and Amazon use is to actively cover relevant information under a multitude of interactions. Even though it remains possible to restrict data collection, both companies impose considerable cognitive cost on customers to arrive at their desired user settings.³⁷⁹ They do not only display options tentatively, but employ several measures to make it harder to arrive at less data-intensive options by requiring customers to click through various sites of plain text or searching for relevant settings in unrelated menus.³⁸⁰ In this way, dark patterns are used to obstruct individuals from selecting options which restrict the data collection and use, and thus lower the price and exchange cost for their service one-sidedly. Choice architecture in user design is purposefully used to shape choices in the interest of data collectors.³⁸¹

³⁷⁵ See Forbrukerrådet 2018, 6 f. Thaler and Sunstein have coined the term “sludge” for nudges that introduce friction in decision-making and lead to negative effects. See Thaler 2018. For a discussion of the interrelation between sludge and dark pattern see Sunstein Forthcoming, 12.

³⁷⁶ Forbrukerrådet 2018, 3. Privacy intrusiveness is here understood as the scale of personal data collection.

³⁷⁷ Forbrukerrådet 2018, 3.

³⁷⁸ For the status quo bias see also Thaler and Sunstein 2008, 35.

³⁷⁹ See Human and Cech 2020.

³⁸⁰ See also Mathur et al. 2019.

³⁸¹ Susser et al. argue that nudges play into online manipulation. The following section will address manipulative practices at greater length. See Susser, Rössler, and Nissenbaum 2019.

As a result, the normative significance of individual consent to a data transaction reduces even further than discussed in the previous section.

Beyond the use of dark patterns, companies also engage in the deliberate use of *addiction by design* in order to increase personal data collection as well as the time spent with the product.³⁸² In their discussion of the moral limits of the digital Attention Economy, Clinton Castro and Adam Pham point to the addictive potential of “free” new media sites and services like Twitter, YouTube, Instagram or Snapchat. They show how developers exploit the human psychology of habit formation so as to deliberately set up user addiction and weakened agency.³⁸³ In a similar fashion like dark patterns, new media design can be said to raise the cognitive effort of individuals to act rationally and in their best interest.³⁸⁴ Beyond that, addictive design raises the stakes for individuals to exit market relations. By now, many psychological studies investigate social media addiction of various sorts.³⁸⁵ The consequences of addictive new media are mental health problems such as feelings of anxiety, unhappiness and depressive symptoms.³⁸⁶ In contrast, companies profit both from the larger time that their customers consume advertisement next to videos or other content and the more personal data that can be collected in the process. Again, the structure of the market privileges companies over users by distributing risks and negative consequences unequally between the transacting parties.

What exactly is the role of personal data in the context of addiction by design? Despite being a desired object of exchange, personal data is also important in designing the effectiveness of a habit-forming cycle as it is considerably increased by real-time personalization.³⁸⁷ Burr et al. argue that new media addiction is a second-order effect of the influence of various coercive, deceptive and persuasive techniques that are employed to steer user behavior toward company interests.³⁸⁸ The

³⁸² According to Eyal, online habit formation works in four repeated steps: trigger, action, variable reward and investment or user contribution. See Eyal 2014, chapter 1. See also Alter 2017. Habits can be understood “as specific type of automaticity characterized by a rigid contextual cuing of behavior that does not depend on people’s goals and intentions.” Wood and Neal 2009, 580.

³⁸³ See Castro and Pham 2020, 7 f. In their discussion of the so-called Attention Economy, Castro and Pham put a strong focus on time costs and neglect the issue of data costs. Moreover, they take addiction to be a matter of weak agency not vulnerability. As outlined above, I think it is more helpful to treat addiction as a vulnerability, since it effectively arises from corporation’s profit motives and is deliberately designed rather than inherent to the market exchange per se. In my view, the key issue is rooted in the problematic structure of Zero-Price Markets.

³⁸⁴ Sean Parker, former Facebook CEO, confirms the deliberate addictive design. See Castro and Pham 2020, 8.

³⁸⁵ For specific internet addictions like social media addiction see for example Balakrishnan and Griffiths 2017. Social media addiction is often paired with other problematic online behavior. For an overview of potential mental health problems see Chen et al. 2020.

³⁸⁶ For an overview see Castro and Pham 2020.

³⁸⁷ See Castro and Pham 2020, 1.

³⁸⁸ The authors also consider changes in beliefs due to recommender systems. I will touch upon that issue in the next sections. See Burr et al. 2018, 754.

“prolonged exposure to personalized, adaptive rewards”³⁸⁹ can thus foster behavioral addiction. In this respect, personal data collection enables companies to tailor recommendations to users in order to “hook them” and keep them consuming their products. The collection of personal data thus reinforces more collection of data or to put it differently, through addictive design, costumers are exposed to increasing data and time costs. Corporations that rely on the monetization and extensive collection of personal data have a worrisome incentive to design products so as to exploit and exacerbate these individual vulnerabilities. Whether behavioral addiction results unintentionally as second-order effects or in fact intended by companies, cannot be decided here. It should be clear however that new media addiction is beneficial for corporations as the data and time costs increase on the customer side of the market. Market transactions that involve such product design create conditions in which some people can no longer protect themselves against high data costs and resulting harm of new media addiction. In the sense of Satz’s definition such a market structure is noxious as it potentially enforces vulnerabilities on market agents that are asymmetrically beneficial to one of the parties.

5.4. Noxious Consequences of Personal Data Markets

The discussion of noxious sources of market exchanges involving personal data has brought several problematic issues to light. With respect to the moral assessment of personal data markets, both weak agency and underlying vulnerabilities loom large in the background conditions of the transactions. The main issue that complicates commercial personal data exchange for individuals, is the inherent contractual incompleteness of personal data trade due to the content indeterminacy of personal data. In addition, I have discussed various cognitive and behavioral hurdles which complicate the possibility of making an informed decision about the personal and commercial value of data. Next to the issue of weak agency, section 5.3.2. showed that individuals are also vulnerable to the asymmetric standing vis-a-vis corporations and the commercial incentive to maximize data collection. User design on Zero-Price Markets is a particular problem as it opens the possibility to exploit cognitive shortcomings through dark patterns and benefit from the addictive potential of digital products. This latter issue of behavioral addiction illustrates vividly that Zero-Price Markets are not only morally problematic since they rely on questionable background conditions. Beyond that, new media addiction can be said to constitute a worrisome outcome of Zero-Price Markets since it leads to various kinds of mental health problems and harm for individuals.³⁹⁰ The following section has the aim to evaluate how personal data markets contribute to negative consequences for

³⁸⁹ Burr et al. 2018, 757.

³⁹⁰ See again Chen et al. 2020.

individuals and society. Other than in the previous sections, the discussion will not center on the transaction of personal data itself, but rather on the possibilities of using personal data in a digital and data-rich environment, e.g., via profiling and algorithmic decision-making.³⁹¹ Section 5.4.1. will deal with data-related harm and risks for individuals and third parties whereas section 5.4.2. concentrates on harm for society and the impact of personal data exchange for democracy.

5.4.1. Harm for Individuals

Debra Satz introduces a basic distinction between basic welfare and agency interests of individual agents in order to approach the relevant dimensions of harm that markets can produce for individuals. Building on Amartya Sen's work, Satz holds that "welfare interests concern a person's overall good, and agency interests concern a person's ability to participate in deciding matters that bear on that good."³⁹² Therefore, markets can evoke moral repulsion not only if they leave either the exchanging agents or third parties extremely worse off in terms of their well-being, e.g., unhappy, exposed or distressed. Beyond that, Satz holds that markets can also override the agency and valuations of individuals.³⁹³ In her view, an intrusion into the agency of a person constitutes a harmful outcome in and of itself that parallels physical harms. The aim of this section is to apply the distinction between basic welfare and agency interests to personal data markets. Again, my discussion will remain selective due to reasons of brevity. I will begin with violations of basic agency interests and later move on to harm that concerns the well-being of persons.

In order to fully capture the issue of *agency violations* on personal data markets, it is first necessary to articulate a clearer understanding of agency itself. Up until now, I have treated the issue of (weak) agency through the lens of economic rationality and looked into decision-making according to the standards of rational choice theory and behavioral economics. The application of Satz's agency criterion requires however a broader notion of autonomous choice. Susser and colleagues develop one possible account of autonomy that fits this conceptual need. In their view, an autonomous person is both a competent and an authentic agent. They understand autonomy as relying on

³⁹¹ See van den Hoven 2009, 311 f. Many scholars worry that a data-rich environment will strengthen corporate influence on and even control over individuals. For an extensive collection of examples see Christl 2017b, chapter 3.

³⁹² Satz 2010, 95.

³⁹³ See Satz 2010, 94 f. According to Sen, the irreducible duality of agency and well-being derives from the notion of a person. In his view, it is not possible to reduce moral claims to respect individual decisions concerning one's good and values to good effects for the well-being of that person. Rather, alluding to "the agency aspect points to the appropriateness of going beyond a person's well-being into his or her valuations, commitments, etc." Sen 1988, 42.

competencies to deliberate, to form intentions, and to act on the basis of that process [...] [as well as for individuals to] critically reflect on their values, desires, and goals, and act for their *own* reasons – i.e., endorse them *authentically* as their own.³⁹⁴

I will follow their approach as a means to illustrate the influence of personal data on agency. Note how this account moves beyond the economic concept of instrumental rational action and choice introduced in the second chapter and applied in the previous sections. From the economic viewpoint, goals are simply exogenously given. The central requirement of rational choice theory is that a rational agent be able to order these goals completely and transitively. Therefore, systematic irrationality is a matter of failing to choose according to a rationally ordered list of given objectives. In contrast hereto, Susser et al. specify the capacities that are necessary for the formation of individual goals in the first place.³⁹⁵ By doing so, they open up the possibility to discuss whether and how personal data can influence the process of choosing competently and authentically or rather autonomously. The central question thus becomes whether personal data can have a negative influence on competent and authentic decisions about one's own good.

A central worry of Susser, Rössler and Nissenbaum is the manipulation of individual choices through *micro-targeted advertisement*. At the core of this issue stands the corporate influence on user behavior via profiling. Facebook for example reportedly advertised to marketers their ability to infer emotional states of their users by the help of information technology.³⁹⁶ In order to locate the moral problem related to corporate influence on agency, Susser and colleagues distinguish between three related, but distinct concepts of behavioral influence. The authors understand persuasion narrowly as a matter of convincing someone of the superiority of some option either by transparent incentive or argument. Coercion in turn is defined as the active influence on options available to a decision-maker. The act of limiting relevant options is therefore an example of a coercive method.³⁹⁷ Finally, Susser et al. understand manipulation as “imposing a hidden or covert subversion of another person's decision-making power.”³⁹⁸ In contrast to persuasion and coercion, where behavioral influence is exerted via available (or absent) options, the particular moral wrong of manipulation is the hidden interference with the process of decision-making. In this view,

³⁹⁴ Emphasis in the original. Susser, Rössler, and Nissenbaum 2019, 36.

³⁹⁵ For the distinction between external and internal workings of agency see again Carter 2019.

³⁹⁶ See Susser, Rössler, and Nissenbaum 2019, 5 ff.

³⁹⁷ See Susser, Rössler, and Nissenbaum 2019, 3 and 15 f.

³⁹⁸ Susser, Rössler, and Nissenbaum 2019, 26.

manipulation affects basic agency interest by undermining “authorship over [...] actions”³⁹⁹ and inducing preferred ends foreign to the individual.⁴⁰⁰

According to Susser and colleagues, the particular problem of personal data collection and processing is that profiling allows companies to hiddenly infer intimate knowledge about people that is relevant for their decision-making processes. With the help of this information, companies can micro-target people in very specific life circumstance without their knowledge.⁴⁰¹ So even though Susser et al. concede that the exploitation of vulnerabilities as well as targeting, e.g., in extraordinary live circumstances like a pregnancy, are not a necessary condition for online manipulation, the authors hold that the effectiveness of manipulative practices is greatly enhanced through these techniques.⁴⁰² Despite the fact that individual consumption choices may not be as important as, e.g., participation in a political process, the exploitation of psychological vulnerabilities still poses a transgression of individual autonomy.⁴⁰³ As corporate success is more likely the more personal data is collected and analyzed, individuals engaging in personal data trade have a higher risk of falling prey to online manipulative practices. Zero-Price Markets are an especially problematic setting as they intimately connect the collection and processing of personal data with decision points for online users. The hidden influence on the decision-making powers of online user can evoke moral repulsion since they can contribute to systematic violations of individual autonomy.⁴⁰⁴

In addition to the active influence of corporations on user behavior, Zero-Price Markets also show another morally troublesome effect that results from the continuous collection of personal data. In this way personal data markets can institutionalize a constant gaze at human beings that can lead to so-called *chilling effects*. This problem is especially acute due to the market power of large tech companies such as Google and Facebook, which operate across various contexts and have

³⁹⁹ Susser, Rössler, and Nissenbaum 2019, 17.

⁴⁰⁰ See Susser, Rössler, and Nissenbaum 2019, 24 f. It is important to stress in this respect, that well-meaning manipulation does not eliminate the particular moral problem. Manipulative practices that leave people better off, can still count as troublesome from the perspective of autonomous persons.

⁴⁰¹ The company Target analyzed the shopping behavior of their customers and found that certain shopping patterns indicate whether female customers are pregnant and even how far along they are. This “pregnancy prediction score” was used to target customers (hiddenly). See Duhigg 2012.

⁴⁰² The necessary condition to count as manipulation is hidden influence. Rather than relying on a success theory of manipulation, the authors hold that manipulative practices are “strategies that a reasonable person should expect to result in manipulation.” Susser, Rössler, and Nissenbaum 2019, 27.

⁴⁰³ Facebook has been alleged of this practice. The company denied that psychographic profiling is used for targeting based on emotional states. However, Facebook presented relevant research to ad agencies. What is of main importance here is that the technical possibility to micro-target people already exists. See Tiku 2017. I will deal with voter analytics in the following section.

⁴⁰⁴ See Susser, Rössler, and Nissenbaum 2019, 29.

significant standing for everyday social life and communication.⁴⁰⁵ What is at stake here is not so much the particular use of personal data, but the everyday experience of being watched closely. Daniel Solove argues that this form of surveillance can lead to a violation of basic agency interests, as monitoring can amount to a form of (social) control. The chilling effect describes the process of proactive behavior adaption out of precaution of downstream consequences.⁴⁰⁶ Despite the unwelcome feeling of being watched, “[s]urveillance can lead to self-censorship and inhibition.”⁴⁰⁷ Depending on the influence of personal data in the overall society, these chilling effects can produce pressure of conformism and affect the autonomy of individuals. To prevent the self-imposed alteration of behavior or anticipatory conformity, governments can have a reason to limit the closeness of data trade on Zero-Price Markets.⁴⁰⁸ Otherwise, people may reasonably forego certain forms of expression or actions on- and offline to avoid bad outcomes from data-driven and automated decision making.⁴⁰⁹

Without disputing the importance of the direct and indirect corporate influence on user behavior via profiling, I want to argue in the following that there is still a greater violation of basic agency interests that results from personal data markets. The chief problem relates to people’s privacy, an issue I have avoided until now. For the sake of argument and in order to avoid a longer discussion regarding the advantages and shortcomings of various concepts of privacy, I will adopt Adam Moore’s normative understanding of privacy as “an access control right over oneself and to information about oneself”, including “exclusive control use and control over personal information”⁴¹⁰. According to Moore, privacy is closely connected to autonomy since privacy interests are a matter of (competently and authentically) determining who can know what about

⁴⁰⁵ See again Zuboff 2015.

⁴⁰⁶ See Solove 2006, 491 ff. It should be noted that Solove defends a cluster account or taxonomy of privacy. In his view, privacy is best understood as a contextual and pluralistic concept, where various privacy violations show a Wittgensteinian family resemblance without referring to one overarching principle. See Solove 2006, 485 f.

⁴⁰⁷ Solove 2006, 493.

⁴⁰⁸ See Zuboff 2015, 82.

⁴⁰⁹ See Christl 2017b, 25.

⁴¹⁰ Moore 2008, 414. Moore’s concern with accessibility is inspired by Gavison 1980. Privacy is a notoriously contested notion, and control-based accounts have received wide criticism. For an overview see van den Hoven et al. 2020. I selected Moore’s normative account for its principal compatibility with ownership over personal data and thus different versions of personal data markets. If privacy would preclude ownership over personal data per se, the investigation would likely steer in the direction of commodification. See Moore 2005. It should also be noted that Solove defends a cluster account or taxonomy of privacy. In his view, privacy is best understood as a contextual and pluralistic concept, where various privacy violations show a Wittgensteinian family resemblance without referring to one overarching principle. See Solove 2006, 485 f.

oneself.⁴¹¹ The gist of privacy in Moore's view is that a person needs to be able to restrict access to information about herself if she wants to.⁴¹²

With this preliminary understanding of privacy at hand, I want to come back to some of the central points of the previous sections and discuss implications for the violation of basic agency interests. I argued in the section 5.3.1. that trading personal data is morally problematic since it is hard for individuals to weigh the benefits and downturns of such a transaction. Another and more fitting way of describing this issue is that personal data markets are morally troublesome since market participants lack the ability and competency to clearly express their privacy valuations. Therefore, Zero-Price Markets can be described as choice settings that prevent individuals from adequately expressing their *privacy preferences*. As a result, online users cannot competently and authentically decide what is known about them.⁴¹³ The broader point is that such a market institutionalizes a systematic violation of basic agency interest since it leaves individuals unable to make an informed choice about what should and should not remain private about them. Such a market undermines a person's ability to determine which actions are in one's best interest.⁴¹⁴

Considerations that speak in favor of such a diagnosis, viz. that people cannot adequately weigh options with respect to their privacy, are the reviewed aggregation effect and content indeterminacy of data, informational asymmetries, incomplete information, bounded rationality and systematic behavioral shortcomings, but also the transparency paradox. Together they can easily lead to a misrepresentation of individual preferences in personal data trade, especially on Zero-Price Markets where the volume and variety of data is hard to monitor. The perception of such transactions is thus likely to rest on a false picture of both the effects for one's individual well-being (whether positive or negative) as well as the ability to execute control over one's personal information in such a bargain. To illustrate this, consider again the issue of price-sensitivity of personal data on markets. As Benndorf and Normann point out, individuals show a declining willingness to sell their data if they are easily identified via contact details.⁴¹⁵ Moreover, Cloos and colleagues find that the sensitivity of information is connected to the expectation of higher prices.⁴¹⁶ Individuals will however have a hard time to express their subjective valuation of privacy through

⁴¹¹ See Moore 2005, 186

⁴¹² See Moore 2008, 416.

⁴¹³ This is not the case since the trade lacks moral legitimacy as argued in section 5.3.1. Rather, personal data trade can violate the interest of individuals by making it impossible for them to decide what is good for them. If a market undermines this form of agential control, governments have a reason to interfere with such scenarios.

⁴¹⁴ Of course, one could argue that rational individuals would never engage in such transactions. Even if this would be true, the institutionalization of such markets would still have no argumentative support.

⁴¹⁵ See again Benndorf and Normann 2018, 1275.

⁴¹⁶ See Cloos et al. 2019.

the act of a trade in a commercial context which relies on the analysis and combination of disparate and fragmented sets of personal data. Rather than asking straightforwardly for sensitive information (or easy identification via contact details), companies are in a position to infer the relevant aspects from data that is perceived as less sensitive. Since individuals have only a limited ability to know what they are doing, their agency interest in determining their overall well-being (in terms of privacy) is considerably reduced. The harm so understood does not solely derive from the diminished well-being, for example through inference and usage of information or re-identification, but from the incompetence of individuals to properly regulate information disclosure through market exchange. The moral worry is that markets systematically violate the privacy of a person by transgressing their valuations of what should remain personal. Accordingly, a government can favor a limit on market transactions, where individuals cannot perform competent agency to express their own (dis-)likings with respect to information disclosure. Enforcing such individual decisions through market arrangements would in turn violate their basic privacy interests.⁴¹⁷

To conclude this section, I will now take a brief look at individual harm through violations of *basic welfare interests* on and from market exchange of personal data. Characteristically, information-related harms differ from classic examples of physical harms, since they relate to more intangible transgressions like reputation loss, public exposure as well as discrimination. As a result, they are harder to formulate even though they can leave a considerable mark in the form of psychological distress and stigmata.⁴¹⁸ Jeroen van den Hoven holds for example that in “information societies, identity-relevant information is like guns and ammunition.”⁴¹⁹ Other than regular commodities, personal data thus carries the risk of financial and psychological harm as well as privacy transgressions.⁴²⁰ Apart from the addictive potential of digital products, the release of identifiable personal data can already pose a threat to some individuals or cause emotional strain, public exposure and stalking. In this respect, it is again helpful to deepen the understanding of the importance of privacy and its intricate relationship for individual well-being. In Moore’s view, privacy is valuable in and of itself for an individual since it is a necessary condition for human flourishing. Moore argues that privacy is a human universal, where his account is one particular example that explicates this necessary aspect of human welfare. From this perspective, the

⁴¹⁷ Note that this argument pertains to the isolated situation of individuals on Zero-Price and C2B Markets. Again, a solution could be a collectivized form of data trade.

⁴¹⁸ See Solove 2006, 487 f. See also Calo 2011, 1133.

⁴¹⁹ See van den Hoven 2009, 311.

⁴²⁰ The example of offensive pregnancy advertisement by Target is an instance of privacy violation. In this case, a daughter who had chosen not to tell her parents that she was pregnant got exposed because she received constant pregnancy advertisement to her home address. See Duhigg 2012.

ubiquitous flow of information can harm a person's well-being, if it is impossible to seek meaningful seclusion.⁴²¹

Other information-related harm results from algorithms and *automated decision-making*. The ethical implications of such systems are manifold and can result both in diminished agency as well as well-being. Section 4.2. discussed how profiling creates meaning through data mining and algorithms that detect correlations to identify people or attribute them to categories and groups.⁴²² Mittelstadt and colleagues present several morally relevant issues that relate to the practice of profiling. Among other things, Mittelstadt et al. argue that algorithmic profiling can draw inconclusive evidence based on falsifiable correlations, lead to biased decision-making from misguided or inaccurate evidence and even result in unfair outcomes due to discrimination. Discrimination can arise when the categorization and classification reflect sensitive attributes such as gender, ethnicity or sexual preference in automated decision-making. Computer scientists and other scholars have tried to mitigate such problems through fairness-by-design or privacy preserving data mining. Since the adoption of such standards remains largely optional, trading data is likely to expose people to discriminatory analytics and unfair treatment. As a result, data-driven credit-scores or differential pricing can result in financial disadvantage, stigmatization and self-fulfilling prophecies.⁴²³ Moreover, information-related harm, is likely to impose a greater relative burden based on the socioeconomic status of users. As Madden and colleagues point out,

the use of big data can injure the economic stability and civil rights of the poor, such as when they are targeted for predatory financial products, charged more for goods and services online, or profiled in ways that limit their employment and educational opportunities.⁴²⁴

Personal data markets are therefore no neutral mechanisms of resource allocation. Rather, they can harm individuals by leading to biased decisions on the basis of (inferred) sensitive attributes. The constant gaze and fine-grained mode of data collection of Zero-Price Markets is especially worrisome in this respect, since individuals easily lose control over their self-presentation when entering an exchange.⁴²⁵ Through surveillance and profiling, corporations can harm individuals and gain a relevant advantage over them.

⁴²¹ See Moore 2003, 222 f. Even though I cannot adress this point for reasons of brevity, Moore also argues that meaningful privacy is especially relevant for the transition into adulthood. A special moral problem is thus the still unchallenged participation of minors in Zero-Price Markets.

⁴²² See again Hildebrandt 2008, 19.

⁴²³ See Mittelstadt et al. 2016, 5-10. See also Christl and Spiekermann 2016, chapters 6.5. and 6.6.

⁴²⁴ Madden et al. 2017, 66.

⁴²⁵ See Rössler 2015, 150 ff. Self-presentation can be constructed as a constitutive feature of autonomy. David Velleman is one advocate of such a position. For a discussion see van den Hoven 2009, 315 ff.

The last and particularly worrisome aspect of individual personal data trades is that they produce considerable *externalities* on third parties. A general downside of relying on personal data self-management is that personal data is not discrete with respect to the people it is about. Consider the example of a person who, as a part of a “free” service use, discloses his contact details or grants access to a photo gallery that includes his family and friends. Even though this data is about several people, it is legitimately traded by a single user. Despite such obvious cases, personal data markets have wider implications for third parties due to the aggregation effect and data mining practices discussed in previous sections. As Barocas and Nissenbaum point out, attributes about a person can already be inferred on the basis of statistical properties of other people. Therefore, it is no longer necessary to exchange data with a specific person in order to know relevant facts about them. Statistical inference can substitute the disclosure of personal data of some people with the information about similar other individuals and groups thereof.⁴²⁶ According to Barocas and Nissenbaum this leads to the

tyranny of the minority: the volunteered information of the few can unlock the same information about the many. This differs markedly from the suggestion that individuals are ill equipped to make choices that serve their actual interests; rather, even if we accept that individuals can make informed, rational decisions concerning their own privacy, these decisions nonetheless affect what institutions (to whom these individuals have disclosed information) can now know (i.e. infer) about others.⁴²⁷

Because profiling and other data analytics relate people to one another via personal data, personal data markets will (and already do) produce large externalities on uninvolved third parties.⁴²⁸ Even though a person may for example choose not to disclose sensitive information like their sexual preferences, it may still be possible to infer sexual orientation based on the disclosed data of other connected people, even though this data does not explicitly refer to them.⁴²⁹ As illustrated above, this can both transgress basic welfare and agency interests of individuals. Moreover, the following discussion in the next section will show that externalities are of particular societal concern.

⁴²⁶ In this respect, anonymization of personal data is ineffective since identification can be a statistical property. See Barocas and Nissenbaum 2014a, 55 f.

⁴²⁷ Emphasis added. Barocas and Nissenbaum 2014a, 61 ff. Computer scientists have estimated that only 20 percent of the population is needed to infer a given attribute for the whole of the population. See *ibid.*, 62.

⁴²⁸ I will pick up this issue in more detail in the next section. See Viljoen 2020.

⁴²⁹ Jernigan and Mistree inferred sexual orientation solely on the basis of gender and sexual orientation of connected people on social networks. See Jernigan and Mistree 2009. Later research has even demonstrated that this is possible for people who are not registered on that network. See Horvát et al. 2012.

5.4.2. Harm for Society and Democracy

The following section completes the application of the noxious market framework to personal data markets. The last parameter which I will consider are extremely harmful consequences for society. Satz understands such outcomes as the subversion of the equal status of individuals in society when market relations complicate or undermine the interaction as equals. Moreover, she holds that markets are morally problematic if they condition individuals “into passive accepters of a status quo”⁴³⁰ or shape agential capacities and preferences “in ways that are in tension with a society of equals.”⁴³¹ Markets can also be a morally troublesome if they corroborate the legitimacy of the political process.⁴³² For reasons of brevity, I will concentrate on three main issues.⁴³³ To begin with, I will pick up the issue of externalities from personal data markets and review their importance for an egalitarian society. My aim is to show that the economic value of personal data is inherently and irreducibly social. Next, I will show how personal data trade and processing can influence the people we become. The section closes with a brief look at the Cambridge Analytica scandal and the issue of political campaigning by the help of psychographic profiling.

As discussed in the previous section, any personal data market creates externalities on third parties since most information technologies like profiling work with statistical properties. Accordingly, it is not necessary to capture data of all members of society, but only of a minority in order to predict and infer information about all individuals. A good example of this issue is Facebook’s business practice of shadow profiling. In order to profile nonregistered users, Facebook creates a profile based on inferred data.⁴³⁴ Facebook may for example approximately know a user’s level of income, based on their relationship with other people, even though this person is not registered on the platform. When thinking about the social aspect of personal data markets, it is thus most important to realize that personal data is not only about one person, but that “data is a social relation”⁴³⁵. In order to illustrate this issue, Salomé Viljoen argues that personal data not only relates data subjects vertically to data collectors such as Facebook, but more importantly, horizontally to other individuals. In this way, classification creates group identity based on assumed, inferred or real properties and patterns. Crucially, horizontal relationships are population-based, in that they connect all people with the relevant features.⁴³⁶ This is another way

⁴³⁰ Satz 2010, 95.

⁴³¹ Satz 2010, 95.

⁴³² See Satz 2010, 96.

⁴³³ Unfortunately, I cannot cover in detail the relation of poverty and personal data exchange. For discussion see Rössler 2015 and Madden et al. 2017.

⁴³⁴ See Tufekci 2018.

⁴³⁵ Viljoen 2020.

⁴³⁶ See Viljoen Unpublished, 27.

of saying that the chief value in profiling lies in the social, i.e., in correlations based on group membership.⁴³⁷

On the basis of the inherent *horizontal relationality* of personal data, Vilijoen argues that it is in fact unhelpful to conceive of personal data's effects on third parties as externalities. In her view,

data's relationality is central to the business of data production and constitutes much of what makes data production economically valuable to begin with. [...] Treating data's relationality as an accidental byproduct of data creation [...] misdiagnoses a feature as a bug.⁴³⁸

Accordingly, it would be wrong to regard horizontal relationality and aggregative effects as external to the market exchange of personal data. In contrast to externalities (or accidental by-products), horizontal relationality is the deliberate outcome of data analytics and personal data markets. To illustrate this, Vilijoen helpfully points to the difference between pollution (as a classic externality) and horizontal relationality. In her view, every market participant can agree in principal that carbon emissions (or other forms of pollution) should be avoided if possible. In the case of data's horizontal relationality however, corporations have no interest whatsoever in minimizing their potential to relate people to one another, which leads to the peculiar vulnerability of users discussed in section 5.3.1.⁴³⁹ Let me put this a slightly different way. From the perspective of the theory of market failure, externalities should ideally be internalized, for example by establishing property rights. With respect to pollution, a standard policy solution is thus to assign a price to carbon emissions in order to reabsorb their costs. This in turn leads to efficient market allocations via the price mechanism. It is however unclear, how the assignment of property rights to personal data can do the same for the horizontal relationality of personal data. If we grant individuals the opportunity to sell (or pay with) their data, we do not internalize a social cost. By assigning a property right to personal data, the aspect of horizontal relationality is not reabsorbed since it is not expressed by individual decisions. Even though data would have a positive price for an individual, its actual worth and meaning is still realized on a collective level. Taken together, it is unclear how to account for the social cost of horizontal relationality in personal data markets.

Apart from the question of market design, I will now move on to discuss egalitarian concerns with horizontal relationality and the ability of corporations to infer information on whole populations. The chief moral problem is that commercial data usage (as payment or sale) is not just the addition of another consumption choice. Institutionalizing personal data markets affects every

⁴³⁷ See also Madden et al 2017, 67.

⁴³⁸ Vilijoen Unpublished, 31. I would like to thank Salomé Vilijoen for giving me the permission to quote her unpublished work directly.

⁴³⁹ See Vilijoen Unpublished, 31 f.

member of society via horizontal relationality, whether they participate in the market or not. In turn, personal data trade can have direct effects on the representation of the horizontal relationship of citizens. Statistical classification based on hypothetical group characteristics can easily bear on the equal standing of the parties and the resulting opportunities and choices open to them. Due to the fine-grained mode of data collection on Zero-Price Markets, it is for example hard for market participants to prevent that their socioeconomic status is known. Even if they would prefer so, corporations can infer this information from associations with groups of “similar people”.⁴⁴⁰ As discussed in section 5.3.1, data analytics can also be inaccurate, arbitrary or based on sensitive attributes such as age, ethnicity, socioeconomic status or gender. Accordingly, personal data markets can lead to discriminatory decision-making without proper control for individuals and society. A society that is concerned with the equal status of citizens needs to turn attention to this irreducible feature of personal data markets.

This is also the larger worry in Barocas’s and Nissenbaum’s drastic analogy of the tyranny of the minority: Already a relatively small fraction of society is sufficient to allow corporations to engage with the whole population on a data-driven basis.⁴⁴¹ Adding the choice to pay with data on Zero-Price Markets or to sell data on Price Markets, changes the whole environment for a society, independent of the actual individual engagement in the market. Allowing some people to make money from their data or to use it as a method of payment, detracts others of the choice not to reveal information about themselves. A resulting problem is that people can no longer opt out of practices like algorithmic decision-making or determine by themselves what can be known about them.⁴⁴² Even if cautious people have reason to think that automated systems could incur negative effects on them, they have little possibility to prevent this from happening.⁴⁴³ In a society that aspires to egalitarian ideals, it is a worrisome effect that enabling opportunities for some can result in removing and altering choices for others. Mittelstadt argues that GDPR and other regulatory attempts, that focus on the level of individuals alone, cannot address these worries.⁴⁴⁴

In addition to this overall social or horizontal effect of personal data markets, I will now move on to approach Satz’s worry with markets that shape personalities and agential capacities. A good way to discuss this issue, is to connect it to Samuel Bowles’s notion of *constitutive exchanges* as

⁴⁴⁰ See Madden et al. 2017, 66 f.

⁴⁴¹ See again Barocas and Nissenbaum 2014a, 55 f.

⁴⁴² Non-participation may even bring the negative effect of correlations based on inaccurate or simply false evidence. In order to prevent this, it could become de facto mandatory to engage in personal data trade.

⁴⁴³ Mittelstadt develops a notion of group privacy in order to address the worries of group membership based on statistical classification. Unfortunately, there is no space to discuss this issue. See Mittelstadt 2017. See also Taylor, Floridi, and van der Sloot 2017.

⁴⁴⁴ See again Mittelstadt 2017, 478.

presented in section 3.2. In his analysis of neoclassical market theory, Bowles stresses that the concept of market failure is an insufficient tool to assess certain markets since it fails to consider them as cultural institutions and social settings. He holds in accordance with Satz that particular markets can affect the personalities, i.e., the authentic goals and valuations of competent market participants. In his view, individual preferences are in these cases constituted, shaped and cultivated through a market.⁴⁴⁵ I attribute this moral concern to an egalitarian perspective in the sense that markets should be evaluated in terms of their contribution to enable or inhibit human capacities as full members of society.

Based on the discussed violations of basic agency interests in section 5.4.1., there is reason to conclude that personal data markets are best understood as a constitutive exchange relation in the relevant sense. Personal data can relate in several dimensions to an agent's capacity to competently and authentically determine their own good with respect to both individual goals in general as well as individual privacy in particular. The commercial trade of personal data is thus likely to affect the formation of people's preferences, e.g., via micro-targeting or corporate surveillance. If participation in data markets leads to social pressure and conformism, an egalitarian society has reason to limit such influence on its members. Despite its relevance in online manipulation, personal data is also a key resource in addictive product design and discriminatory algorithmic decision-making. To prevent discrimination whether based on age, gender, ethnicity or any other sensitive attribute is especially important from the perspective of an egalitarian society. With respect hereto, I have just discussed how profiling and personalization concern the segmentation of a population where "only some segments are worthy of receiving some opportunities or information, re-enforcing existing social (dis)advantages."⁴⁴⁶ Taken together, a data subject's preferences as well as its membership in society can be said to be intimately tied to the market exchange of personal data in various dimensions. Sticking with Bowles's terminology, personal data markets have larger cultural and societal effects which evoke moral concern in an egalitarian society.

To conclude the discussion concerning the moral acceptability of personal data markets, I want to take a brief look at their implications for the political realm. One particular instance, viz. Facebook's Cambridge Analytica scandal, has raised public concern regarding the influence of micro-targeting, political ads and voter analytics on the results of free elections.⁴⁴⁷ Bennett and Lyon argue that these debates "reflect a new realisation that elections are, to some extent,

⁴⁴⁵ See Bowles 1991, 12.

⁴⁴⁶ Mittelstadt et al. 2016, 9.

⁴⁴⁷ See Cadwalladr 2017.

determined by the capture of personal data.”⁴⁴⁸ As a recent report of the Tactical Tech collective shows, political campaigning especially in the US relies both on aggregated consumer data provided by data brokers, but also by internet platforms like Google and Facebook. These platforms in addition to messaging apps are also used to target individuals with political advertisement. A third relevant actor are political consultants who use data analytics to segment and classify the population-level data to improve the targeting and communication on a micro-level.⁴⁴⁹

Personal data markets in its various forms thus play a key role in current data-driven electioneering.⁴⁵⁰ Like commercial data analytics, voter analytics aims at targeting personalized messages to potential voters in order to influence their voting behavior.⁴⁵¹ With the help of Facebook data, Cambridge Analytica allegedly based their voter profiling in the 2016 U.S. election on inferred psychographic profiles of over 200 million voters. Hence, the political consultancy aimed at influencing voter behavior on a deeper level than simple segmentation. The principal problem that arises from online political advertising and micro-targeting is “the possibility of sending different messages to different groups.”⁴⁵² In theory, micro-targeting could undermine the democratic process as it allows campaigns to send differential and even contradicting messages to different segments of the population based on the psychographic classification. Susser et al. argue that this particular instance of data-driven electioneering is morally worrisome since it is a form of manipulation as defined in the previous section. By using psychographic profiling, Cambridge Analytica aimed at circumventing the decision-making powers of voters and tailored political messages to the personalities of users without their knowledge.⁴⁵³

Whether political advertisement is in fact as powerful as journalists and consultants themselves claim, is hard to test empirically.⁴⁵⁴ On the one hand, this is due to differences and particularities of political systems. On the other hand, persuasion and behavioral influence is not easily observed, especially if it is exerted over a longer period of time. Jessica Baldwin-Philippi discusses empirical research that is in sum skeptical of the efficacy of political advertising. She argues that data-driven electioneering has not yet elevated to a worrisome level since the targeted “messages largely echo the narratives found in national-level ad campaigns.”⁴⁵⁵ Currently, data-driven electioneering seems

⁴⁴⁸ Bennett and Lyon 2019, 3.

⁴⁴⁹ See Tactical Tech 2019, 12 f.

⁴⁵⁰ I borrow this terminology from Bennett and Lyon 2019.

⁴⁵¹ See Bennett and Lyon 2019, 4.

⁴⁵² Saunders 2020, 75.

⁴⁵³ See Susser, Rössler, and Nissenbaum 2019, 9-12.

⁴⁵⁴ For an overview of literature regarding the efficacy of data-driven electioneering see Bashyakarla 2019.

⁴⁵⁵ Baldwin-Philippi 2019, 4.

to be more effective in mobilizing voters than persuading them of a particular viewpoint.⁴⁵⁶ Even though this empirical research appeases some of the larger worries, it does not of course eliminate the possibility that voter analytics can work on some level.⁴⁵⁷ In light of the speed of technological advancements and the process of digitalization, it is likely that personal data will continue to be used as a means to gather information on as well as the support of voters. A democratic society thus has every reason to ensure that citizens are not unknowingly influenced due to data-driven electioneering. Even if the Cambridge Analytica scandal was not decisive in winning the election, “[s]uch practices threaten the autonomy of citizens, and in doing so, they threaten democracy.”⁴⁵⁸ Governments thus have a reason to regulate data processing and collection to prevent political manipulation on the basis of personal data.

6. Conclusion

This master thesis had the aim to investigate the moral limits of personal data markets. Before presenting my main results, I will briefly recapitulate what has been said so far. The discussion started in chapter two with an exposition of the economic market framework to convey a general outlook over the standard view on markets. Here, I articulated the basic concepts of neoclassical economics as well as the default case for assessing markets from an economic perspective. I showed that microeconomics conceives of the market as arising from the rational choices of individual agents, both self-interested customers and profit-oriented firms. Subsequently, I presented the theory of market failure and its relation to efficient market outcomes as valued by the agents themselves. Based on the diagnosis of market failure, microeconomics allows for government intervention in markets to the extent that it can bring about Pareto optimality. Typically, this intervention does not allude to a stricter regulation, but rather the widening of the market scope in order to internalize all relevant costs in the price mechanism. The discipline of neoclassical microeconomics does not establish actual limits of markets.

The following third chapter presented three approaches that articulate critical perspectives and improvements of the standard market approach. My discussion of the economic notion of government intervention was a first step to show that markets are not neutral, but political institutions. I adopted Steven Lukes understanding of markets as institutions that trade goods on the condition of (future) payment. Next, I presented Samuel Bowles’s typology of markets which

⁴⁵⁶ See Baldwin-Philippi 2019, 6 f. A possible explanation for this is that voter unlike commercial data analytics is not as intimately tied to a decision point. Usually, citizens still vote in an analog environment.

⁴⁵⁷ Susser et al. present other research that speaks in favor of the success of political targeting. See Susser, Rössler, and Nissenbaum 2019, 11 f.

⁴⁵⁸ Susser, Rössler, and Nissenbaum 2019, 37.

casts doubt on the universal applicability of standard efficiency analysis. In his view, neoclassical microeconomics fails to consider the structural heterogeneity of different markets. Bowles argues instead that certain markets produce contested and constitutive exchanges which require separate attention in assessment. While contested exchanges pertain due to inherent contractual incompleteness, constitutive exchanges have social and cultural effects since they shape personalities and capacities. Subsequently, I introduced commodification theory and argued that it is possible to reconstruct a version of Michael Sandel's view of commodification that applies to goods on a case-by-case basis with recurrence to a moral conception of that good. In cases of complete corruption, a moral conception of a good can be said to be in full contradiction with commodifying it (think slavery). Alternatively, goods can also be incompletely corrupted if their moral conception is only in tension with assigning the commodity status (think prostitution). Lastly, I discussed shortcomings of commodification theory and introduced Debra Satz's noxious market approach. In a similar fashion like Bowles, she takes the proper object of moral critique to be different types of markets rather than moral conceptions of goods. To ground a distinction between markets, she articulates four moral dimensions relevant for the assessment of the relations among market participants. Whereas weak agency and underlying vulnerabilities relate to the sources of market exchange, i.e., its moral legitimacy, individual and societal harm consider the consequences of markets.

Chapter four finally introduced several types of personal data markets. To begin with, I presented the most important features of personal data relevant for commercial trade. Two of these features stand out. First, personal data conveys identity-relevant information about a natural person. Second, the meaning or information content of personal data is context-dependent on processing and usage. The subsequent section took issue with the latest technological advancements in Big Data and profiling and pointed to relevant implications for profit-oriented corporations. For the remainder of the chapter, I presented and defended the distinction between Price and Zero-Price Markets. On Price Markets, personal data is bought and sold for money. Zero-Price Markets in turn involve regular exchanges of zero-price products that are conditional upon data exchange as a method of payment. Furthermore, I introduced two types of Price Markets, the B2B Market or data broker industry, where businesses sell data to other businesses, as well as Laudon's proposal of the National Information Market as an illustration of possible C2B Markets. Here customers (more or less directly) sell personal data to businesses. The last section of chapter four was devoted to conceptualizing the widespread idea that data is used as a de facto method of payment to obtain "free" digital services or products. First, I discussed two business strategies to market zero-price products. The most common variant in a digital environment are multi-sided markets such as

Google Search. Second, I clarified the notion of data as an exchange cost. Finally, I argued that the absence of prices is no reason to conclude that the trade of zero-price products is not a market transaction. Rather, data (and attention) can serve as the relevant exchange costs. Accordingly, individuals who use zero-price services or products are best understood as *de facto* customers.

Finally, chapter five presented a novel perspective on the moral limits of personal data markets. My aim was to investigate whether Zero-Price Markets expose individuals to morally questionable choices or not. The starting point for discussion was a short overview of the current legal status quo of commercial data use, which *de facto* accords individuals the ability to decide whether commercial usage of personal data is legitimate or not. Subsequently, I argued that charges of commodification of personal data are unlikely to result in complete corruption of the moral value of the goods in question. This paved the way for the application of the noxious market framework to personal data markets. The following section 6.1. presents the main results of this inquiry. In order to simplify matters, I will restrict myself to recapturing the main points with respect to the moral limits of Zero-Price Markets. Additionally, I will conclude this thesis by presenting an outlook on how to regulate Zero-Price Markets based on the analysis.

6.1. Noxious Zero-Price Markets

In sum, Zero-Price Markets score high along all four dimensions of Satz's framework. The most important worries concern the background conditions or sources of personal data trade. My discussion of weak agency presents viable arguments to challenge the current status quo of relying on individual consent to decide the legitimacy of commercial data usage. As it stands, there is little reason to suppose that a data subject's market decision alone can in fact transfer this legitimacy. Self-determined individual data management seems to be nearly impossible under current conditions. This diagnosis is mainly supported by the content indeterminacy of data and the aggregation effect of Big Data and profiling. Both issues pose a systematic problem for individuals to correctly assess the benefits and associated risks as well as the economic and personal value of their data. The situation is worsened by several cognitive and behavioral shortcomings like bounded rationality, decisional biases, a lack of legal and technical knowledge, asymmetrical information as well as the zero-price effect. Furthermore, Nissenbaum and Barocas argue that the inherent complexity of individual data exchange is irreducible and cannot be translated to a fully specified contract. As a result, I argued that personal data trade is an instance of Bowles's contested exchange since the contractual specification of information content of data is either very hard or not even intended at the point of exchange. Accordingly, the information retractable from the collected data remains endogenous to the exchange and nearly impossible to monitor for individuals.

In addition to the moral problem of weak agency, individuals are also exposed to underlying vulnerabilities due to the unequal need for the exchanged good. Since personal data is only the secondary transaction for individuals, but of the essence for companies, multi-sided markets create worrisome market settings for individuals. Additionally, the balance of potential risks is unequally distributed as a structural feature of such markets. Since the traded data is identity-relevant only for one of the parties, users are vulnerable to big tech companies. The likelihood of user exploitation is only exacerbated by the ability of corporations to deliberately design the choice architecture on Zero-Price Markets. This gives companies like Google or Facebook the opportunity to superimpose cognitive costs of various sorts to complicate decisions. I discussed the examples of dark patterns and addictive design as manifestations of this problem.

The result of this situation are unfair outcomes and bad contracts for individuals who use online services “for free”. Other informational welfare harms include the risk of identity theft and fraud, public exposure and discrimination from algorithmic decision-making. Moreover, Zero-Price Markets create considerable externalities for other individuals since personal data disclosure is not discrete. As information technologies like data mining and profiling create meaning on a population level, individual data disclosure also exposes and informs about others. Moreover, Zero-Price Markets transgress basic agency interests due to systematic privacy violations, increased risk of online manipulation as well as chilling-effects from the fine-grained mode of data collection. The most important worry in this respect is that Zero-Price Markets make it nearly impossible to correctly express one’s privacy preferences and valuations in the transaction.

Other major concerns relate to the harmful social outcomes of personal data markets since they can affect the equal status of citizens. With the help of Viljoen’s notion of horizontal relationality, I reconceived the issue of externalities from a societal and egalitarian perspective to show that the value of personal data is irreducibly social. This has the morally worrisome effect that personal data markets impact the whole society. On the one hand, statistical classification is worrisome as it may represent citizens based on inaccurate, arbitrary or discriminatory attributes. The relationality of personal data can thus undermine the equal status of citizens in automated systems. On the other hand, it may be hard for people to opt-out of data-driven decision-making, even if they do not share data about themselves on markets. The opportunity to use personal data commercially, detracts others of the choice not to reveal information about themselves. Moreover, I argued that personal data markets institutionalize constitutive exchange relations within the meaning of Bowles’s typology of markets since they shape preferences, goals and personalities. Thus, a proper assessment of markets needs to address personal data markets as a social setting and cultural institution. Finally, I argued that data-driven electioneering is a special concern for democratic

societies. Even though it is unlikely that the Cambridge Analytica scandal had a deeper influence on the election results in 2016, the commercial availability poses a continued challenge for government regulation.

Before moving on to sketch a possible policy solution, I want to present a more general result of my discussion that concerns neoclassical appeals and defenses of personal data markets. Metzger for example argues that markets in personal data are a superior way of resource allocation since they lead to efficient outcomes.⁴⁵⁹ An attractive conclusion of my discussion is that even if that would be true, Metzger's argument is somewhat beside the point. Since personal data markets include both contested and constitutive exchange relations, personal data markets are structurally different from the standard case of a Walrasian market. To apply standard efficiency analysis as the single normative criterion to assess personal data markets is thus a category mistake. To see why, consider that the constitutive aspect of personal data trade corroborates the usage of the Pareto criterion since the preferences that are supposed to justify the outcomes originate from within the market.⁴⁶⁰ Economists would have to choose arbitrarily whether the ex-ante or ex-post preference rankings of the exchanging parties are to count as relevant.⁴⁶¹ Additionally, personal data exchanges are also structurally contested, which means that relevant terms of the transaction remain endogenous to the exchange. Standard efficiency analysis overlooks the inherent power relationship relevant to the assessment of such market settings.⁴⁶²

6.2. Regulating Zero-Price Markets

The main contribution of this thesis is the diagnosis of personal data markets as noxious. I want to end this investigation by sketching an answer to a quite obvious, but so far unaddressed question. In light of the presented high scores in all relevant moral dimensions, should Zero-Price Markets be blocked or regulated? My best answer is that the cumulative considerations speak in favor of reorienting data governance from isolated individual decisions on markets to a more collective approach regarding the exchange and management of data. In general, this does not necessarily preclude the distribution of personal data through market-like mechanisms. More importantly, it points to a reinterpretation of data protection as a social right, where regulation aims at retaining

⁴⁵⁹ According to Metzger, it is in general the case that a “[m]arket model is better suited to maximise welfare than a state-centered regulation.” Metzger 2020, 11 f.

⁴⁶⁰ Bowles 1991, 15.

⁴⁶¹ See Satz 2010, 49. Footnote 29.

⁴⁶² Another interesting result of this diagnosis is that personal data markets are structurally similar to labor markets according to Bowles's typology of markets. For entirely different reasons, Lanier and Weyl argue as well that data is similar to labor. See Lanier and Weyl 2018.

the full equal membership of all individuals in society.⁴⁶³ Overall, my answer stays true to the spirit of Satz's approach. In her view, the diagnosis of moral problems can turn attention to the problematic feature of markets without hastily condemning every possible market arrangement. The relevant moral object of critique is not some moral conception of a good, but different types of markets. In particular, moral assessment should address the relationship of market participants to retain the equal standing of the parties. On the basis of the above diagnosis, the background conditions of Zero-Price Markets are clearly the focal point for market regulation. Since weak agency and underlying vulnerabilities systematically disadvantage individuals, delegating the transfer of legitimacy to individual consent is not only insufficient, but hardly possible. Beyond that, personal data markets also relate to the equal standing of citizens in a democratic society. Accordingly, data protection can be conceived of as a crucial precondition of a functioning egalitarian society. If people are to act on equal footing with one other, personal data markets need to satisfy certain minimal standards. In the following, I want to end this master thesis by giving a brief outlook on a policy proposal designed to address some of the main problems with personal data markets.

Delacroix and Lawrence argue that one way to rectify the bargaining problem that arises from contractual incompleteness is the set-up of trusted intermediaries. In their view, bottom-up Data Trusts can be designed to supplement the current data protection regime in the EU. By aggregating consumer interests and pooling expert knowledge to monitor and specify data trading contracts, data trustees could counterweigh the asymmetrical power of large companies. Such institutions would exert the current fundamental rights on behalf of data subjects and negotiate terms of transaction from a collective standpoint without additional (profit-)motives of their own. A sufficient plurality of such intermediaries could serve different privacy valuations or combinations of risks and benefits in a market-like fashion.⁴⁶⁴ The interpretation of data protection as a social right could also lead to a certain upper level for commercial data exchange in order to prevent informational harm and risk such as chilling-effects, but also to mitigate addictive design. Most importantly and in analogy to modern health insurance, a system of Data Trusts could be designed as legally mandatory, which would make consent banners a relic of the past. With such regulation in place, corporations could no longer shape the online choice architecture for data exchange or

⁴⁶³ I should note that such a claim needs further philosophical work and defense.

⁴⁶⁴ Laudon's Data Banks are a similar proposal. Since the intermediaries follow profit motives, the NIM does not eliminate underlying vulnerabilities. There is also reason to doubt that property rights minimize risk or enhance control. See Laudon 1996. Delacroix and Lawrence also allow trusts to be wholly commercially oriented. Even though this might be worrisome, the set-up is an improvement since the profit motive is not inherent and can be avoided. See Delacroix and Lawrence Forthcoming.

capitalize on the zero-price effect. The terms of transaction would be negotiated independently between Data Trust and corporation instead.⁴⁶⁵ Overall, the merits of this and similar proposals are likely to rest upon the right balance struck between collective and individual interests since they cannot counteract all morally relevant worries. The horizontal relationality of data and possibility to infer information on whole populations seems to be one unwelcome effect of most if not all largescale data exchange arrangements.

It was the aim of this master thesis to allow for a reflected moral judgement of personal data markets. The key objective was to add a novel and more fine-grained perspective on the proper regulation of markets, by investigating the limits of personal data markets through the lens of Satz's noxious market framework. Rather than tying the evaluation of commercial personal data exchange to moral notions of privacy and commodification, as it is commonly done, I followed Satz in arguing that the structural aspects of exchange relations bear the chief normative significance in evaluating (personal data) markets. In this way, I hope to have clarified that a range of moral concerns are relevant in understanding the moral problem with commercial personal data trade. Even though privacy violations will remain a focal point of the philosophical debate concerning the limits of personal data markets, my inquiry has shown, that other issues are all the same troubling. Any policy proposal that does not address for example the weak agency and vulnerability of online users, will fall short of rectifying the noxiousness of personal data markets.

⁴⁶⁵ Data Trusts could also strengthen socially beneficial modes of data sharing such as data donations. See Hummel et al. 2020.

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Links:

- www.darkpatterns.org (last access November 30, 2020).
- www.schufa.de (last access November 30, 2020).
- www.ownyourdata.eu (last access November 30, 2020).

Attachments

German Abstract

Um digitale Dienste und Produkte möglichst ohne Preis anbieten zu können, verarbeiten und monetarisieren große Technologieunternehmen mit der Zustimmung der Nutzer personenbezogenen Daten. Aufgrund der Verletzung der Privatsphäre und des Datenschutzes sind Handelsbeziehungen dieser Art jedoch zunehmend gesellschaftlicher und philosophischer Kritik ausgesetzt. So argumentiert etwa Shoshana Zuboff, dass der andauernde Datenfluss, den „kostenlose“ digitale Plattformen erfordern, Individuen vor die moralisch illegitime Wahl stellt ihre Daten gegen essentielle Infrastruktur eintauschen zu müssen. Ziel dieser Arbeit ist es, unter Anwendung des Konzepts der „noxious markets“ von Debra Satz eine neue Perspektive auf die moralischen Grenzen von Märkten für personenbezogene Daten zu eröffnen. Eine moralische Untersuchung der zugrundeliegende Tauschbeziehung und Marktstrukturen zeigt, dass Märkte für personenbezogene Daten insbesondere deshalb als moralisch besorgniserregend erscheinen, da sie auf der schwachen Handlungsfähigkeit und der zugrundeliegenden Verletzlichkeit der Nutzer beruhen. Darüber hinaus kann der Handel mit personenbezogenen Daten Individuen sowie einer demokratischen und egalitären Gesellschaft schwerwiegenden Schaden zufügen. Aus diesen Gründen sind Märkte für personenbezogenen Daten weder allein durch die Zustimmung einzelner Nutzer noch durch ökonomische Effizienzüberlegungen zu rechtfertigen.

English Abstract

In order to offer digital services and products without a price, large technology companies process and monetize personal data with the consent of users. Due to concerns with privacy violations and data protection, commercial relationships of this kind are increasingly subject to social and philosophical criticism. Shoshana Zuboff, for example, argues that the constant flow of personal data that “free” digital platforms require confronts individuals with a morally illegitimate choice to trade their data for essential internet infrastructure. The goal of this thesis is to provide a new perspective on the moral limits of such personal data markets by applying Debra Satz's concept of “noxious markets”. My moral inquiry into the underlying exchange relationship and market structures reveals that personal data markets appear to be of particular moral concern because they rely on the weak agency as well as the underlying vulnerability of users. Moreover, trade in personal data can cause serious harm both to individuals and to a democratic and egalitarian society. For these reasons, markets for personal data cannot be justified solely on the basis of individual user consent or considerations of economic efficiency.