

# THE EPISTEMIC PRECONDITIONS OF MARKETS AND THEIR HISTORICITY

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## I

### INTRODUCTION

When philosophers look at markets, what do they see? Do they think about them in terms of abstract models, expressed in mathematical equations and graphs such as Edgeworth boxes? Or do they have in mind concrete historical phenomena such as the annual fair in a medieval town, the famous tuna auctions in Tokyo, or the speculative online trading on platforms such as Robinhood? After all, all of these are markets in the sense that large numbers of agents exchange goods and services, using money as a medium of exchange.<sup>1</sup> Philosophers, especially those in the high liberal tradition,<sup>2</sup> typically ask questions about markets from a perspective of institutional design. They ask how values such as autonomy, justice, or social welfare can be realized through institutions like markets. But what methodology should philosophers use for approaching markets from this perspective? Economists typically look at markets from a perspective of efficiency, and their often very abstract modeling tools for understanding markets tend to focus on this value alone. Historians, sociologists, and ethnographers, in contrast, explore the rich variety of concrete markets, but this raises questions about the generalizability of their accounts.

In this article, I present an argument for why, on the spectrum that runs from abstract and theoretical towards concrete and historically-grounded methodologies for understanding markets, philosophers should move closer to the latter end.<sup>3</sup> One reason for doing this is that the character of markets—and hence also their potential role in institutional design—depend on complex relations between knowledge, responsibility ascriptions, and possibility of regulation. And these variables require a detailed analysis of concrete historical

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1. Lisa Herzog, *Markets*, STANFORD ENCYCLOPEDIA OF PHILOSOPHY (Edward N. Zalta ed., 2021), <https://plato.stanford.edu/archives/fall2021/entries/markets/> [<https://perma.cc/8BE9-3CJK>].

2. Samuel Freeman, *Capitalism in the Classical and High Liberal Tradition*, in LIBERALISM AND DISTRIBUTIVE JUSTICE 17–61 (2018).

3. My reflections are based on experiences in Western capitalist democratic societies; while some arguments may also be applicable to other societies, I do not claim such generality.

settings, not least because technologies of knowledge change over time.

To illustrate the type of phenomena I have in mind, consider an argument from Adam Smith's *WEALTH OF NATIONS*. Smith emphasizes, throughout the book, the importance of "good roads, canals, and navigable rivers" that connect different regions and thereby allow for the breaking down of local monopolies, the expansion of markets, and the deepening of the division of labor.<sup>4</sup> In Book V, he discusses how such infrastructures can be provided. One risk is that public authorities build them according to their own preferences, for example, out of a desire for prestige, instead of proportioning them to the transportation needs of a region. Another risk is that commercial companies do not provide them in good quality, making trade more burdensome and more costly than it should be. One might expect that Smith would suggest one optimal institutional solution for how to align the incentives for the providers with the optimal provision of these public goods. Instead, he draws a distinction between two types of such public goods—roads and canals—based on the knowability of the quality of supply.

In the case of canals, he argues, the right to raise a "toll or lock-duty" can be rented out to private providers, because a lack of maintenance would mean that "the navigation necessarily ceases altogether, and, along with it, the whole profit which they can make by the tolls."<sup>5</sup> Whether or not a canal is well maintained is an either-or question, and there can be little disagreement about it: ships can either pass or not. Therefore, it is easy to know whether or not the provider does a good job. The incentives are aligned in this case: The provider needs to monitor whether silt is building up or if other obstacles make the canal impassable—otherwise they cannot make any profits from the tolls—and this is precisely what the public needs from the provider.

For roads, however, the situation is different: "A high road, though entirely neglected, does not become altogether impassable."<sup>6</sup> Therefore, Smith holds, it is more difficult to align incentives: "The proprietors of the tolls upon a high road, therefore, might neglect altogether the repair of the road, and yet continue to levy very nearly the same tolls."<sup>7</sup> This would mean that the users of the road could get low quality services—which increases costs because of longer delivery times, broken wheels, among other things—while the provider extracts an excessive amount of money. Therefore, Smith suggests putting high roads "under the management of commissioners or trustees."<sup>8</sup> In other words, the best institutional solution for roads is more likely to be public rather than private.

The broader lesson that one can draw from Smith's discussion is this: Seemingly small differences in certain facts' knowability can majorly impacts which economic institutions are capable of achieving the desired outcomes. Or,

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4. See ADAM SMITH, *AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS* 120 (S.M Soares ed., MetaLibri 2007) (1776).

5. *Id.* at 560–66.

6. *Id.* at 562.

7. *Id.*

8. *Id.*

to put it differently, the epistemic situation opens up different avenues for institutional design. If the epistemic situation is clear cut, as in the case of canals, it is easy to hold providers accountable: liability can be easily defined, the incentives can be easily aligned, and there is no need for further public oversight. The system enforces itself because all relevant actors can easily agree about what is or is not the case—the canal is navigable or not. When it comes to high roads, in contrast, the epistemic situation is much messier. One can imagine the endless controversies about the quality of their maintenance, with long-winded legal proceedings and competing expert opinions. And while Smith's discussion concerns the provision of public goods, similar issues can arise regarding the possibility of establishing normatively desirable markets or indeed any markets at all. Take, for example, the existence and regulation of markets in goods that turn out to present a health risk. It is a crucial question—typically discussed retrospectively in legal proceedings—who knew what, with which degree of certainty, and what conclusions they drew or should have drawn from it. But what can or cannot be known and through which methods shifts over time. Hence, these issues of knowability provide an argument for the necessity of a contextually informed analysis of markets.

In what follows, I will explore these epistemic preconditions of markets in some more detail, with the help of more examples. After briefly explaining the understanding of markets that underlies my reflections, I discuss the interplay between markets and other institutions regarding the provision of relevant knowledge. I then argue that, in recent years, the use of big data has created a new frontier of these regulative problems: not only the availability of knowledge about products, but also the availability of knowledge about *customers* has implications for the design of markets and other economic institutions. Here, a paradigm shift in our traditional approach to knowledge and information is needed: More is *not* automatically better, and a crucial question is what should *not* be known. I conclude with some reflections on the methodological implications for understanding and normatively evaluating markets. I argue that philosophers interested in markets need to pay attention to historical specificities, and, for this purpose, a historically and sociologically informed approach to markets—which can use *specific* models in a toolbox approach but needs to be anchored in empirical methods—is better suited than highly general abstract models. The epistemic issues around markets, which I here focus on, illustrate this larger methodological point.

## II

### AN INSTITUTIONAL ACCOUNT OF MARKETS

In Part II, I briefly sketch out some basic, background assumptions about markets that stand behind my argument regarding their epistemic preconditions.

Philosophers<sup>9</sup> tend to see markets as institutional phenomena rather than as arising naturally out of preexisting rights.<sup>10</sup> They look at them from the perspective of institutional design and with regard to the opportunities they offer for realizing certain values. From this perspective, markets can clearly take on very different forms, depending on the legal and social rules that embed them. Some allow for genuine, mutually beneficial exchanges without negatively effecting participants or third parties; others exploit individuals' vulnerabilities in the cruelest ways, doing immense harm to society or the environment.<sup>11</sup>

As a rule of thumb, institutional design should enable markets with overall positive effects, and block or redesign markets with overall negative effects (and arguably, there are far more social spheres organized as markets today than can be reasonably justified). But of course, this general formula hides many details, controversies, and tradeoffs between different kinds of effects—negative *and* positive—that certain markets can have on the realization of values such as autonomy, justice, or social welfare. Depending on the task of institutional design at hand, different sets of values are relevant and might need to be weighed against each other in different ways.

One can distinguish different levels of demandingness when it comes to the normative criteria for designing and regulating markets. The most modest requirement on markets is that they must be efficient in the sense of textbook economics, that is, they must not be marred by market failures, such as externalities.<sup>12</sup> An exclusive orientation to efficiency can only be defended, I take it, if one assumes that markets are one institution out of a whole set of institutions, and other values—for example, social welfare—are realized through other institutions, such as public institutions that provide social insurance.

A more demanding understanding of the institutional design of markets might want to also draw on values such as autonomy and fairness by establishing rules that prevent market participants from exploiting each other's vulnerabilities. This can, for example, justify rules against manipulative advertisement or the selling of addictive substances.<sup>13</sup> While libertarians might

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9. This statement does not cover certain strands of libertarianism that see markets as pre-institutional; for a critical debate, see generally Herzog, *supra* note 1.

10. For examples of similar views that frame markets as institutional phenomena, see generally KARL POLANYI, *THE GREAT TRANSFORMATION* (Beacon Press 2nd ed. 2001) (1944); LIAM MURPHY & THOMAS NAGEL, *THE MYTH OF OWNERSHIP: TAXES AND JUSTICE* (2002).

11. *Cf., e.g.*, MARJORIE KELLY, *THE DIVINE RIGHT OF CAPITAL: DETHRONING THE CORPORATE ARISTOCRACY* (2003) (analyzing several instances where corporate greed and corruption acted to the detriment of large numbers of consumers).

12. See generally ARTHUR CECIL PIGOU, *THE ECONOMICS OF WELFARE* (1920) (discussing the role of market failures, such as externalities, in disrupting market efficiency).

13. On the ethics of advertisement, see generally A. GOLDMAN, *Ethical Issues in Advertisement*, in *JUST BUSINESS* 235 (1984); Theodore Levitt, *The Morality (?) of Advertising*, 48 *HARV. BUS. REV.* 84, 84–92 (1970); Paul Santilli, *The Informative and Persuasive Functions of Advertising: A Moral Appraisal*, 2 *J. BUS. ETHICS* 27, 27–33 (1983); Thomas Carson et al., *An Ethical Analysis of Deception in Advertising*, 4 *J. BUS. ETHICS* 93, 93–104 (1985); Daniel Attas, *What's Wrong with 'Deceptive' Advertising?* 21 *J. BUS. ETHICS* 49, 49–59 (1999). Whether or not one understands such forms of regulation as also a matter of

reject such rules as paternalistic, it is very plausible to think that the members of a democratic society would want to protect their own autonomy and that of their fellow citizens by cutting off opportunities for the exploitation of non-autonomous forms of behaviors.<sup>14</sup>

Even more demanding conceptions of the institutional design of markets can build further norms and values into it, such as norms ensuring the protection of the environment or banning the exploitation of individuals beyond the boundaries of one's own society, like workers in transnational supply chains. The key assumption behind such approaches is that basic normative standards—such as human rights—hold worldwide and that goods become morally tainted if they have been produced in contexts in which these standards are violated.<sup>15</sup> This approach raises complicated questions about implementation, but supporting normative arguments are difficult to reject: if the point of markets is to allow win-win situations without violating basic normative standards, then should this not also apply to exchanges with individuals in other parts of the world?

This rough sketch is sufficient to indicate how complicated market design and regulation—and the implementation of the designed rules in practice—can be, given the endless variations in the character of markets. To make things even more complicated, the analysis needs to be comparative and holistic: how well could *other* institutions reach the goals that markets may not reach very well? For example, a question could be, “Under what condition could the public provision of certain goods lead to better outcomes?” This will, again, depend on a plethora of contingent factors, such as the capacity of public administrations, the healthiness of the democratic culture, and the functionality of the legal system of a country. Moreover, markets that coexist with other institutions can function very differently from the same markets that do not.

For the purposes of my focus on the epistemic preconditions of markets, it is helpful to distinguish between two broad strategies of institutional design. The first are rules and regulations that allow or ban certain activities, for example, certain production modes or the selling of certain products to minors. The second are rules and regulations that concern the *information* that must be shared with other market participants, typically the buyers, such as which product- or service-features need to be made public and in what ways.

Informational strategies may appear second best from a normative perspective—for example, warning consumers about certain risks instead of simply banning risky products—but they have, arguably, been very influential in

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improving efficiency depends on how one interprets individuals' preferences (as always fully rational or as sometimes irrational in ways that can lead to inefficient decisions).

14. An intermediate option is “nudging,” which has been described as “libertarian paternalism.” Richard Thaler & Cass Sunstein, *Libertarian Paternalism*, 93 AM. ECON. REV. 175, 175–79 (2003). For a defense from a philosophical perspective, see Andreas T. Schmidt, *The Power to Nudge*, 111 AM. POL. SCI. REV. 404, 404–17 (2017).

15. See generally LEIF WENAR, BLOOD OIL: TYRANTS, VIOLENCE, AND THE RULES THAT RUN THE WORLD (2012). Similar arguments motivate the discussion about supply chain laws in Europa. I will come back to this topic below.

the justification of markets. After all, if grown-up individuals know everything they need to know about a certain product and do not use the product to harm others, why not let them decide for themselves whether they want to engage in certain transactions?<sup>16</sup> Such a consent-based justification crucially hinges on the question of whether individuals know *enough* for the consent to be normatively meaningful.<sup>17</sup> If this holds, and if there are no other reasons to think that the individuals' autonomy might have been compromised, then the principle of "buyer beware" can be applied. This means that the sellers are morally and legally off the hook—at least vis-à-vis buyers, but there may still be problems such as externalities vis-à-vis third parties or society as a whole. This is why the knowledge that buyers do or do not have plays a crucial role in the normative architecture of consent-based defenses of markets. Arguments for informing consumers, instead of direct regulation of market activities, also align well with a market-friendly and anti-paternalistic *zeitgeist* of the last few decades.<sup>18</sup>

My argument, in what follows, is that epistemic issues—who can know what, at what costs, at what point in time, with what degree of certainty, among other things—do indeed play a crucial role for understanding markets from this institutional-design perspective. But the assumption that—where market participants receive all relevant information—markets should always be allowed is too simple, even if one focuses on the epistemic dimension alone and leaves out other normative criteria. The accessibility of such information varies widely, and it is not only processed *within* markets, but also in other institutions—or so I will argue. And because the epistemic landscape changes over time—for example, with new methods becoming available for ascertaining certain facts—epistemic issues are also an important dimension of the historicity of markets, requiring a context-sensitive approach to solving them.

### III

#### THE EPISTEMIC PRECONDITIONS OF MARKETS AND MARKET REGULATION

Let me start with some terminology. As is standard usage, I use the term "information" for single pieces of evidence, and "knowledge" for a deeper understanding of evidence in its relevant context. Both information and knowledge can enter the premises of individuals' practical syllogisms that guide their actions; both can also fail to play a role because of problems such as denial or a weakness of will.<sup>19</sup> For example, an individual may have a general maxim not

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16. This corresponds to the "harm principle," as famously articulated by J.S. Mill. J. S. MILL, ON LIBERTY 6–18 (Batoche Books 2001) (1859).

17. For an example of a critical discussion see Vera Bergelson, *Consent to Harm*, in THE ETHICS OF CONSENT: THEORY AND PRACTICE 163, 163–192 (Franklin G. Miller & Alan Wertheimer eds., 2010).

18. See generally GRAHAM BULLOCK, GREEN GRADES. CAN INFORMATION SAVE THE EARTH? (2017).

19. See, e.g., DAVID DAVIDSON, *How is Weakness of the Will Possible?*, in ESSAYS ON ACTIONS

to buy food that increases the risk of cardiovascular diseases. Learning about new evidence concerning the effects of certain food products on cardiovascular risks can change her consumption patterns—rationally speaking, it should—but it may also, instead, lead to a nagging bad conscience and ways of rationalizing her inertia.<sup>20</sup> The same holds if she has certain principles concerning the effects of her consumption behavior on others: she may, for example, want to buy fair trade products, but she may not always follow through because of a weakness of will. In any case, it is clear that information about products or services is relevant for individuals when they act in markets.<sup>21</sup> And it is also relevant for market-regulating public authorities who might, for example, ban certain products because of the health risks they carry.

The information that economic actors need to make their decisions, however, is not always easily available. Some forms of knowledge can even be *in principle inaccessible* to them. For example, a private consumer in the 1920s would have had a very difficult time trying to get information about possible harms done by the products she bought as a result of their CO<sub>2</sub> emissions. What is more is that this person would simply not have known *that there is something to know* about the climate change issues that might have had an impact on her consumption behavior. A consumer in the 1980s, could, in principle, have known quite a few things about the climate change from reading scientific papers or environmental NGOs' reports. And yet—given that this topic was not very present in public discourse at the time—it would have been difficult for her to access the relevant sources of information, and it may have been all too natural to remain in denial about the little information that may have reached her through public media. We can call this second form of accessibility—which has more to do with publicly available sources, media attention, and societal discourses about certain topics than with in-principle knowability—*practical accessibility*.

The same questions about the availability of knowledge—in principle and in the practical sense—also arise for public authorities tasked to regulate markets. Nevertheless, the responsibilities tied to their institutional roles—for example, employees of public health authorities—can imply that they *should*, as far as possible, acquire certain forms of knowledge.<sup>22</sup> Issues of practical accessibility should play a lesser role here than in the case of private consumers. For example, many market authorities have units dedicated to research, and they are in contact

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AND EVENTS 21, 41–42 (1980) (discussing the failure of information to guide an individual's actions in light of denial or a "weakness of the will"); For an overview see SARAH STROUD & LARIA SVIRSKY, *Weakness of Will*, STANFORD ENCYCLOPEDIA OF PHILOSOPHY (Edward N. Zalta ed., 2021), <https://plato.stanford.edu/archives/win2021/entries/weakness-will/> [<https://perma.cc/UQH3-366M>].

20. For an example on denial, see ADRIAN BARDON, *THE TRUTH ABOUT DENIAL: BIAS AND SELF-DECEPTION IN SCIENCE, POLITICS, AND RELIGION* (2019).

21. An additional dimension of the problem, which I here omit for reasons of space, is the question how ideology plays into individuals' ability to give consent. This question is complicated because one would have to take into account not only the effect of societal ideology onto individual behavior, but also the potentially ideological role of economists as market designers.

22. For a discussion of "should have known" cases, see SANFORD GOLDBERG, *Should Have Known*, 194 SYNTHESE 2863, 2863–94 (2017).

with other researchers in academic or other institutions.

But the idea that market participants in today's market societies could be fully informed about every product or service they buy is highly unrealistic. There are simply too many transactions the consumers need to engage in, and often very specific forms of expertise is needed to truly understand all dimensions of a product or a service (including the effects it might have on third parties).<sup>23</sup> It is an interesting question whether, morally speaking, individuals *should* engage in transactions based on insufficient knowledge. This question seems to be a rather theoretical exercise because acquiring all this knowledge is unfeasible in today's world of divided labor and highly specialized expertise. Fortunately, the social reality of many markets is, in fact, different: instead of buyers having to carry all the informational responsibility on their own, there are *other* mechanisms that support them in this epistemic task.<sup>24</sup>

Often, other institutions—for example, public institutions that provide certifications or those that regulate markets directly—take on part of the epistemic tasks that buyers would otherwise have to carry on their own. In this sense, the perspectives of individual market participants and of the institutional framework around markets cannot be analyzed separately. Instead, an individual's epistemic situation and their ensuing behavior need to be understood as socially embedded, especially when it comes to the practical accessibility of knowledge.<sup>25</sup> For example, food markets in Western countries are surrounded by a whole plethora of institutions that implement knowledge about hygiene, medicine, and public health into the regulation of markets, enacting rules and

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23. This can be understood as a dimension of the “paradox of choice”: Does having too much choice lower welfare? See, e.g., BARRY SCHWARTZ, *THE PARADOX OF CHOICE* (2004) (providing a critical discussion of the paradox of choice on economic behavior and outcomes). But see B. Scheibehenne, R. Greifeneder & P. M. Todd, *Can There Ever Be Too Many Options? A Meta-Analytic Review of Choice Overload*, 37 J. CONSUMER RES. 409, 409–425 (2010); A. Chernev, U. Böckenholt & J. Goodman, *Choice Overload: A Conceptual Review and Meta-Analysis*, 25 J. CONSUMER PSYCH. 333, 333–358 (2015). These meta-reviews of experimental studies show that the empirical evidence is still quite inconclusive overall.

24. Interestingly, this was already thematized in George A. Akerlof's famous 1970 paper on the market for lemons, in which he showed that information asymmetries can lead to the breakdown of markets. See George A. Akerlof, *The Market for “Lemons”: Quality Uncertainty and the Market Mechanism*, 84 Q. J. ECON. 488, 488–500 (1970). He briefly discussed counteracting institutions that can help in cases of systematic information asymmetries: guarantees that signal quality, brand-names that give sellers an incentive to uphold their reputation, or chains that function in a similar way; lastly, for certain services, licenses or other forms of certification can help ensure the quality of service. *Id.* at 499–500. On the role of brand names see David Kreps, *Corporate Culture and Economic Theory*, in *PERSPECTIVES ON POSITIVE POLITICAL ECONOMY* 90, 108–111 (James E. Alt & Kenneth A. Shepsle eds., 1990)). Nevertheless—and despite the intense engagement with questions of information (for example, information asymmetries)—economic theorizing has tended to focus on epistemic processes *within* markets, rather than in surrounding institutions; moreover, the methodological individualism of a lot of economic theorizing has, arguably, led to a focus on *individuals'* knowledge, rather than knowledge held by collectives such as organizations or groups or market participants.

25. See generally LISA HERZOG, *RECLAIMING THE SYSTEM: MORAL RESPONSIBILITY, DIVIDED LABOUR, AND THE ROLE OF ORGANIZATIONS IN SOCIETY* 23–45 (2018). For a perspective from the angle of responsibility see generally Susan Hurley, *The Public Ecology of Responsibility*, in *RESPONSIBILITY AND DISTRIBUTIVE JUSTICE* 187, 187–215 (Carl Knight & Zofia Stemplowska eds., 2011).



regulations on this basis. As an individual consumer, this whole apparatus and the epistemic processes that go on within it are largely invisible to me. I can pick any jar of yogurt from the supermarket shelf without having to worry about hygiene issues, and in some countries, I can even choose among products with different labels concerning environmental standards or animal welfare.

However, the existence and the concrete form of these epistemic infrastructures<sup>26</sup> are historically contingent on the political constellations in different countries. Changes in the knowability and reliable communicability of different forms of knowledge change the form they take, and even the very need for them. Take, for example, developments in the information available about used cars—Akerlof's famous example in his paper *The Market for Lemons* that kicked off economic research on information asymmetries.<sup>27</sup> It is not completely utopian to imagine that, in the future, much more information about used cars can be made available to potential buyers in a reliable way.<sup>28</sup> Modern cars are equipped with numerous sensors that systematically track and record their life histories in great detail: the mileages, the occurrence of accidents and any technical defects. Thus, a full digital footprint of each vehicle exists and could, in principle, be made available to potential buyers. We can expect that this will massively change the nature of the used car markets, potentially making the role of middlemen and middlewomen superfluous.

The problem in this, as in many other cases, lies on a different level: this information would have to be made available to potential buyers in a trustworthy way. This means that the communicative process has to be protected against manipulation by those who could benefit from falsifying information. This is nothing new—doctored mileages already plague the existing second-hand car market.<sup>29</sup> It can be expected that future digital information systems would not only see their own forms of manipulation and deceit, but hopefully also counteracting forces. There is a broader problem: whenever economic interests are at stake, we must expect the manipulation of information, or at least the temptation for it, to be both within markets themselves and the surrounding institutions. If consumers turn to advisors or agents—for example, real-estate agents for buying a home—how can they be sure that they are reliable and honest towards them? Or, if regulatory authorities turn to scientists to understand the health impacts of certain products, how can they be sure that these scientists are

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26. I have developed the concept of epistemic infrastructures for markets in Lisa Herzog, *The Epistemic Division of Labor in Markets: Knowledge, Global Trade, and the Preconditions of Responsible Agency*, 36 *ECON. & PHIL.* 266, 266–286 (2020) and LISA HERZOG, *CITIZEN KNOWLEDGE: MARKETS, EXPERTS, AND THE INFRASTRUCTURE OF DEMOCRACY* (2023).

27. See Akerlof, *supra* note 24.

28. On the use of data from car sensors and the ensuing business models, see SHOUSHANA ZUBOFF, *THE AGE OF SURVEILLANCE CAPITALISM: THE FIGHT FOR A HUMAN FUTURE AT THE NEW FRONTIER OF POWER* loc. 2414 (2019) (ebook).

29. See *Odometer Fraud*, WIKIPEDIA, *THE FREE ENCYCLOPEDIA*, [https://en.wikipedia.org/w/index.php?title=Odometer\\_fraud&oldid=1168621627](https://en.wikipedia.org/w/index.php?title=Odometer_fraud&oldid=1168621627) [https://perma.cc/NC6U-4D7Q] (last visited Aug. 30, 2023) (providing a brief overview of vehicle odometer fraud in second-hand car markets).

truly independent? In other words, the epistemic questions around markets lead to questions about control and oversight over the processes through which the relevant knowledge or information is produced and transmitted.

These arguments allude to a lurking infinite-regress problem. The need for oversight over the epistemic mechanisms that make certain markets possible or normatively attractive raises a “who guards the guardians” question. After all, stories about the manipulation of information in markets regularly hit the news, and there are probably few consumers in Western societies who have never been the victim of misleading advertisement, hidden clauses in contracts, or other informational pitfalls.<sup>30</sup> At the level of market regulation, historians have unearthed numerous manipulative practices by corporations, especially around markets—such as tobacco or medical products—that can put the health and the lives of buyers at risk but deliver high profits at the same time.<sup>31</sup> Given how much money is at stake—and maybe also given the prevailing ideology of free markets, which often puts the burden of proof on public authorities rather than corporations—this should not come as a surprise. By keeping consumers and regulators in the dark, or actively misinforming them, opportunities for profit making can be protected even in cases in which, from a normative perspective, markets should obviously be regulated differently, or even be shut down completely.<sup>32</sup>

The answer to this “who guards the guardian” question can only be a holistic one: it takes a whole system of epistemic agents and institutions to ensure that the conflicts that arise around the epistemic infrastructures of markets are won by citizens and their democratically elected representatives. But the influence of money on politics in many countries does not make this task easier. It takes independent media and journalists who have the willingness to dig into specific issues, independent scientists and other experts, as well as a public that does not react to reports about problems by shrugging their shoulders and continuing to follow the seductive advertisement narratives. As I have argued elsewhere, the democratic systems of our societies are currently not up to the task of winning this game in favor of democracy by reining in or banning the many existing

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30. On the use of “boilerplate” in contracts and the problem that consumers give up essential rights by signing them, see generally MARGARET RADIN, *BOILERPLATE. THE FINE PRINT, VANISHING RIGHTS, AND THE RULE OF LAW* (2013). Another insidious strategy is to insert even legally invalid clauses in contracts, on the assumption that at least some market participants will assume them to be legal. See, e.g., Meirav Furth-Matzkin, *On the Unexpected Use of Unenforceable Contract Terms: Evidence from the Residential Rental Market*, 9 J. LEG. ANALYSIS 1, 1–49 (2017) (examining illegal provisions in rental lease contracts).

31. For longer contextual discussions on the “tobacco strategy” see generally, for example, *THE CIGARETTE PAPERS* (Stanton A. Glantz et al. eds., 1996); ROBERT N. PROCTOR, *THE NAZI WAR ON CANCER* (1999); NAOMI ORESKES AND ERIC CONWAY, *MERCHANTS OF DOUBT: HOW A HANDFUL OF SCIENTISTS OBSCURED THE TRUTH ON ISSUES FROM TOBACCO SMOKE TO GLOBAL WARMING* (Bloomsbury Press 2010); SHAWN OTTO, *THE WAR ON SCIENCE: WHO’S WAGING IT. WHY IT MATTERS. WHAT WE CAN DO ABOUT IT* (2016).

32. Other examples beyond tobacco include obfuscation around cancerogenic insecticides or around climate change. See ORESKES & CONWAY, *supra* note 31.

markets that are of questionable normative quality.<sup>33</sup>

However, the problem is not only an internal one of protecting market participants against harm done to them by other market participants within the institutional framework of one society. Above, I have already mentioned the possibility of holding markets to normative standards that also consider their effects on human beings and the environment beyond national boundaries. Given the global span of many value chains, this is an important issue. For a long time, the only way through which it was addressed was voluntary labels, for example, fair trade labels, that coalitions of producers and activists managed to establish in certain markets. In some of those markets where the labels were reasonably successful—such as coffee or chocolate—other producers responded by creating alternative labels with lower standards. As a result, consumers would be faced with the additional challenge of understanding which of these labels are reliable and capture the relevant normative criteria.<sup>34</sup> Various countries have recently begun to enact legal rules about supply chain liability for companies.<sup>35</sup> Here, similar epistemic questions arise: in some cases, it is relatively easy to provide relevant information and to hold market participants to account; in others, this is a huge challenge. Moreover, it is questionable whether purely informational measures such as labels and reports—and the hope for the good will of end consumers—can do the work. From a normative perspective, more decisive regulatory measures are clearly needed.

Here is an intriguing illustration of these problems: the case of blood diamonds. Blood diamonds are mined under harsh working conditions, and the gains from which were used to finance armies and combat groups in civil wars. For several decades, activists have tried to fight the trade of blood diamonds by establishing a certification scheme called Kimberley Process, which would ensure that only diamonds mined under better conditions and without ties to civil war parties would make it into global markets.<sup>36</sup> This process is beset by many problems—not least because of the lack of cooperation by certain states—but this is not the place to go into the details.<sup>37</sup> What is clear, however, is that the task of providing reliable information (which is called resource validation in this context<sup>38</sup>) is a great challenge: diamonds are easy to smuggle and the incentives of doing so—for example, by getting them into a different cutting facility that carries a conflict-free certificate—are huge. This is why chemists have tried to

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33. For detailed arguments to back up this claim, see generally HERZOG, *supra* note 26.

34. On fair trade, from a philosophical perspective, see, for example, Valentin Beck, *Theorizing Fairtrade From a Justice-Related Standpoint*, 3 GLOBAL JUST. 1 (2014).

35. For example, the EU is currently in the process of passing laws about supply chain accountability with regard to human rights and environmental standards. See, e.g., EUR. COMM'N, *Just and Sustainable Economy: Commission Lays Down Rules for Companies to Respect Human Rights and Environment in Global Value Chains*, (Feb. 23, 2022), [https://single-market-economy.ec.europa.eu/news/just-and-sustainable-economy-commission-lays-down-rules-companies-respect-human-rights-and-2022-02-23\\_en](https://single-market-economy.ec.europa.eu/news/just-and-sustainable-economy-commission-lays-down-rules-companies-respect-human-rights-and-2022-02-23_en) [<https://perma.cc/5YQG-9FUX>].

36. WENAR, *supra* note 15, 315–19.

37. See generally, EXTRACTIVE INDUS. TRANSPARENCY INITIATIVE, PROGRESS REPORT (2022).

38. WENAR, *supra* note 15, at 319.

come up with methods of mineralogical analysis that would provide a non-manipulable source of information about the mine of origin.<sup>39</sup> If successful, tests about the origins of diamonds could be implemented at various steps in the value chain, and this could help sorting the innocent diamonds from the tainted diamonds in ways that would be much harder to manipulate than the current mechanisms. Of course, many political and practical questions remain, for example, about accountability structures for the companies involved or the willingness of governments to implement such measures. But with new epistemic tools, new opportunities for institutional design become available, offering new possibilities of creating morally acceptable institutional solutions.<sup>40</sup> Public authorities wielding reliable epistemic tools could much more easily take stricter measures, such as banning the trade of tainted diamonds.

Let me draw some more general conclusions from the examples I have presented. First, the knowledge that surrounds markets—that is or is not made available to potential buyers, or that forms the basis for the regulation of markets or fails to do so—matters greatly for their normative character, and it is often hotly contested because of the financial interests at stake.<sup>41</sup> The battles around it take place not only in front of courts or in public and political discourses, but also within expert committees that advise politicians or directly between scientists or other experts who are aware of how much is at stake when their findings become publicly available. In the institutional handling of such knowledge, seemingly small details in regulations—for example, who carries the burden of proof for certain claims or what methodologies are recognized for providing evidence—can make a massive difference. So can technological developments that make new ways of generating, transmitting, or controlling relevant forms of knowledge available to different parties. The distribution of costs (who can or cannot pay for expert advice, or who must carry the costs for proving certain claims) is another important dimension of these battles—market participants with deep pockets, such as large corporations, will often be able to carry costs quite easily, whereas this can be a major challenge for individual workers or consumers and even groups from poorer countries.

The second point is that the complexity of global supply chains makes these epistemic processes much more complicated, and thereby also opens more doors for manipulation of information. Leif Wenar illustrates this problem after discussing the taintedness of many diamonds:

The way that global supply chains merge together further deepens the fog of wares. . . . Only one in five diamonds, for instance, ends up in jewelry—most go onto drill bits used in mining. Diamonds harvested from the bloody fields in Zimbabwe may have been

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39. Catherine E. McManus et al., *Diamonds Certify Themselves: Multivariate Statistical Provenance Analysis*, MINERALS, Oct. 16, 2020, at 1, 10–12.

40. Of course, the case of blood diamonds is a simple one in the sense that the moral questions are relatively uncontroversial. In other case, an ongoing democratic debate about facts, values, and possibilities of implementation will be needed to improve institutional governance.

41. See generally Dorothy Nelkin, *Science, Technology, and Political Conflict: Analyzing the Issues*, in *CONTROVERSY: POLITICS OF TECHNICAL DECISIONS* (Dorothy Nelkin ed., 1984).

fixed onto a drill used to extract oil from Mexico, which was then refined into gasoline that filled the truck that brought oranges to your supermarket. The next orange you pick up may be, in this remote sense, a “blood orange”—you simply cannot know.<sup>42</sup>

Now, transparency would not, in principle, be impossible for many products. After all, global supply chains today are often accompanied by digital documentation that is, in principle, transmissible even to end customers.<sup>43</sup> This may sound utopian in the context of Wenar’s example because of the intermediate goods like the drill and the gasoline. But for many goods and the markets in which they are traded, the obstacles are no longer technical.<sup>44</sup> Rather, they stem from social complexity and vested interests: numerous players, with competing interests, are part of the process. For example, information often does not travel across the legal boundaries of different companies, which may have only been set up to avoid liability and traceability. This could, in theory, be changed. But, for many players it would not be beneficial if information about, say, the working conditions of farmers, traveled all the way to end customers. Hence, without external pressure, it cannot be expected that companies would make all their knowledge and information available.

The third point to note is that, for many real-life cases, accessibility in a practical sense, rather than knowability in principle, matters the most, especially when it comes to the behavior of end customers. This means that the battlefield around market-related knowledge encompasses not only the creation and provision of knowledge and information, but also the *form* in which they are presented and made more or less salient for market participants. A famous case in point is the presentation of the sugar and fat contents and the calories of food products in either small print or “traffic light” symbols that are much easier to process for customers. The very fact that the legally mandatory provision of such symbols gets fought ferociously by the food industry in many countries suggests that they expect different forms of presentation to make a difference.<sup>45</sup> Parallel arguments apply to the presence or absence, as well as the framing, of certain topics, such as the risks of certain products, in public discourse.<sup>46</sup> Given that consumers are hardly able to inform themselves about all the possible features of the products they buy, it is often the salience of information that matters.

Lastly—circling back to the theme of the historicity of markets—the

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42. WENAR, *supra* note 15, at xx (footnotes omitted).

43. See, e.g., Stephanie Watts & George Wyner, *Designing and Theorizing the Adoption of Mobile Technology-Mediated Ethical Consumption Tools*, 24 INFO. TECH. & PEOPLE 257, 259 (2011).

44. One could, in theory, imagine that all information about products, including intermediate goods, is saved on a giant blockchain and thus available to customers. This may not be desirable for reasons of resource use (as the energy use of blockchains is enormous), but with progress in computer technology, other ways of securely storing information may become available in the future.

45. This example is discussed in COLIN CROUCH, *THE KNOWLEDGE CORRUPTERS. HIDDEN CONSEQUENCES OF THE FINANCIAL TAKEOVER OF PUBLIC LIFE* 43–44 (2016). On the ineffectiveness of pure calory information, but the effectiveness of calory information in combination with other interpretive or contextual nutrition information, see generally the systematic review Susan E. Sinclair et al., *The Influence of Menu Labeling on Calories Selected or Consumed: A Systematic Review and Meta-Analysis*, 11 J. ACAD. NUTRITION & DIETETICS 1375 (2014).

46. The legal battles around Roundup (and its potential to cause cancer) are a recent case in point.

character and reliability of epistemic infrastructures of markets can vary massively, both over time and across different legislative and cultural contexts. Adam Smith's example of high roads versus canals is, in this respect, too simple. It presents a case in which there is a clear, generally understandable matter of the fact at stake: the ease of transportation along canals or highroads does not require sensitivity to cultural contexts or specific social norms. But this is not true for many other products and the markets in which they are traded. Below, I will draw out some of the methodological implications that this fact has for philosophers evaluating markets. Before that, however, let me discuss how the epistemological battles around markets currently see a new frontline opening up—namely the shift from knowledge about products to knowledge about customers. The use of digital data has boosted the latter type of knowledge so massively that we can speak of a qualitative change, even though the phenomenon is not entirely new.

#### IV

##### A NEW FRONTLINE: FROM PRODUCTS TO CUSTOMERS

So far, my focus has been on epistemic questions and controversies around products. These represent half of the challenge for sellers: how can they present their products in the best possible light, what information should be foregrounded and made salient, and what information should not be presented in too bright a light? The second half of the challenge, for sellers, is to understand potential customers: what their wants, needs, and desires are. The sellers need to consider how the customers can be moved to buy *precisely this* product and how they can be made to come back for further purchases. Companies that better know their customers and what motivates them can better tailor their messages to them. And of course, there are many specialized intermediaries—from PR agencies to market-research companies to agencies organizing test audiences—that offer services answering these questions.

If one assumes that buyers are always fully rational and make all decisions only after having been fully informed themselves, one would hardly expect normative problems here, even if companies came to know more and more about their potential customers. After all, why would anybody buy something they do not really want or that does not fit their needs? But the behavioral scientists have long argued that this picture of consumer behavior is too simple. Human moods fluctuate. Their will power is sometimes stronger, sometimes weaker; some decisions are taken spontaneously, while others are driven by irrational fears or hopes; sometimes, individuals act out of a sense of moral duty, and, in other cases, they are carried away by group behavior and “go with the crowd.”<sup>47</sup> And it is, of course, not completely new that sellers take advantage of moods or situational pressures working in their favor. The history of advertisement, since its beginnings in the nineteenth century, is full of shrewd attempts to gain the

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47. For example, see the overview in HURLEY, *supra* note 25.

attention of potential customers and to convince them to do something that they otherwise may not—namely, to buy a certain product.<sup>48</sup> And it is also nothing new that companies try to understand their audiences, and use different messages for different groups.

In recent years, however, the amount and the depth of information about individuals that sellers can access have exploded thanks to the use of digital tools and the traces that humans leave behind in their online activities.<sup>49</sup> Arguably, this has led to a qualitative shift in the ways in which individuals can be targeted and their most intimate desires can be used against them. How exactly this works, and how good the manipulation of individual behaviors works, is shrouded in business secrecy. But various leaks and discoveries of problematic plans have led to public outcries that have potentially prevented their implementation—like, for example, when it became publicly known that Facebook planned to sell advertising space targeted at psychologically vulnerable teenagers.<sup>50</sup> Cases such as data collection in smart homes, clothes, or furniture raise questions about whether companies should be allowed to know details about individuals that not even their most intimate friends would know, such as audio recordings from their bedroom.<sup>51</sup> Companies in markets, such as car insurance, encourage data sharing by customers, for example, by offering lower rates if one agrees that data from the sensors in the car are directly passed on to them.<sup>52</sup>

Many of these issues have been analyzed through the lens of privacy.<sup>53</sup> This is certainly an important concern, which deserves attention not only from a perspective of justice (who can afford privacy) but also from a perspective of democratic theory (what does it do to a democratic society if the line between “public” and “private” breaks down). A widely observed phenomenon is the so-called privacy paradox: individuals say in surveys that they value privacy, but their behavior does not reflect this or not to the same extent. For example, when it comes to consenting to the terms and conditions of online services, many individuals simply accept without even reading them.<sup>54</sup> How to deal with this

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48. See, e.g., TIM WU, *THE ATTENTION MERCHANTS. THE EPIC STRUGGLE TO GET INSIDE OUR HEADS* (2015).

49. See generally ZUBOFF, *supra* note 28; CARISSA VELIZ, *PRIVACY IS POWER. WHY AND HOW YOU SHOULD TAKE BACK CONTROL OF YOUR DATA* (2020); Stacy-Ann Elvy, *Commodifying Consumer Data in the Era of the Internet of Things*, 59 B.C. L. REV. 423 (2018); Rebecca Lipman, *Online Privacy and the Invisible Market for our Data*, 120 PENN ST. L. REV. 777 (2016).

50. Sam Levin, *Facebook Told Advertisers It Can Identify Teens Feeling ‘Insecure’ and ‘Worthless’*, THE GUARDIAN (May 1, 2017, 3:01 PM), <https://www.theguardian.com/technology/2017/may/01/facebook-advertising-data-insecure-teens>.

51. An example discussed by Zuboff is “smart bed technology” that collects data from people’s sleeping rooms, ZUBOFF, *supra* note 28, at 4255–80.

52. See, e.g., Caley Horan, *Our Insurance Dystopia*, BOSTON REV., June 14, 2021, <https://www.bostonreview.net/articles/our-insurance-dystopia/> [<https://perma.cc/ZQ4S-9EMJ>].

53. See generally VELIZ, *supra* note 49; BEATE RÖSSLER, *THE VALUE OF PRIVACY* (2004); HELEN NISSENBAUM, *PRIVACY IN CONTEXT: TECHNOLOGY, POLICY, AND THE INTEGRITY OF SOCIAL LIFE* (2010).

54. See, e.g., Susan B. Barnes, *A Privacy Paradox: Social Networking in the United States*, *FIRST*

phenomenon is beyond the scope of the present paper—for the foreseeable future, we must assume that the collection and use of data for microtargeting ads and other communications to individuals will continue.

In addition to questions about privacy, these technological developments also raise urgent questions about the characters of the resulting markets. The more companies can know about potential customers, the more the epistemic battle shifts from what can and should be known about products to what can and should be known about customers. Indeed, the adage in many digital business models that “the customer is the product” suggest that this is what one should expect. Of course, epistemic questions about products do not completely lose relevance. If companies know enough about customers to anticipate how they will make decisions and react to different kinds of information, however, they can provide tailor-made informational menus to different customers. In this sense, epistemic questions about the product fold into questions about the epistemic relationship between companies and their customers.

From the perspective of institutional design and regulation, the question is how these new technologies and their epistemic possibilities can change markets from spaces in which genuine win-win transactions are made possible towards spaces where—when one side attempts to take advantage of the less-than-fully-rational behavior of another—they would receive far fewer or no benefits. The use of detailed digital information about customers is not unambiguously negative. A positive case can argue that a more specific targeting of potential customers allows for sending them the information they are really interested in, which could, at least theoretically, reduce the overall amount of advertisement that individuals are shown. This could lead to better matchmaking and, therefore, increase overall efficiency and welfare. The darker side, however, is that companies may not just show information, but rather target individuals’ most intimate wishes, as well as anxieties and fears, and thereby trigger decisions that are made in a less-than-fully-autonomous way, or even manufacture preferences from scratch.<sup>55</sup> This would lead to inefficiencies from customers making buying decisions that they later regret, and the violations of normative standards such as fairness, transparency, and avoidance of manipulation. Moreover, there is also a distributive question: how much do companies gain and how much do customers gain? For example, if companies get a very clear sense of different customers’ different abilities to pay, they can potentially skim off much higher profits than using an average price—but is such price differentiation justifiable and desirable?

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MONDAY, Sept. 4, 2006. On individuals not reading terms and conditions, see, for example, Yannis Bakos et al., *Does Anyone Read the Fine Print? Consumer Attention to Standard-Form Contracts*, 43 J. LEGAL STUD. 1, 32–33 (2014); Victoria C. Plaut & Robert P. Bartlett, *Blind Consent? A Social Psychological Investigation of Non-readership of Click-Through Agreements*, 36 L. & HUM. BEHAV. 293, 293 (2011).

55. See, e.g., GEORGE A. AKERLOF & ROBERT J. SHILLER, PHISHING FOR PHOOLS. THE ECONOMICS OF MANIPULATION & DECEPTION 45 (2015); JOHN KENNETH GALBRAITH, THE AFFLUENT SOCIETY 119 (1958). WU, *supra* note 48, at 1082 quotes the example of advertisement for oral care products that refers to women’s fear of not finding a husband because of halitosis—which shows that the issue as such is not new.



Thus, regulators are faced with new questions about the normatively desirable forms of markets. The answers likely differ depending on many contextual factors, including the kinds of goods and services that are bought and sold, and the degrees of vulnerability of different customers.<sup>56</sup>

Of course, a skeptic might ask how bad the situation really is, and whether the ability of algorithms to predict human behavior based on past data may have been massively exaggerated. Human beings have free will, the skeptics might say, and are always good for surprises—that algorithms cannot predict—instead of just continuing their past patterns of (buying) behavior. On that reading, all the money that has flown, and continues to flow, into data analytics and algorithmic advertisement models is based on a fad that is largely speculative in character, and the bubble will burst before too long.

Maybe the skeptics are, to some extent, correct. We have probably all experienced advertisements targeted at us that seem to follow a very simplistic logic. For example, the author of this paper received advertisements for German language courses for months after moving back to her native country Germany from the United Kingdom. Nonetheless, the risks are real and there are indeed serious normative questions lurking here for this following reason: our societies are structurally unjust, putting many individuals in positions in which their autonomy is infringed.<sup>57</sup> For example, many individuals experience scarcity of money or time, which creates a bandwidth tax on their mental capacities.<sup>58</sup> In such situations, they are more likely to be vulnerable to misleading or seductive messages, and less likely to be able to protect their privacy.<sup>59</sup> If this scenario plays out, it would be another way in which markets, enhanced by digital tools, create a Matthew effect: more benefits for those who already have, and more exploitation of those who are already disadvantaged.<sup>60</sup>

The regulation of markets with regard to these new epistemic issues takes a form that we may find unfamiliar: it concerns questions about *what should not be known*, rather than what should be known. Coming from a past in which knowledge was all too often scarce, the question of whether there might be *too much* knowledge is one that we may still need to learn to ask and to answer. And I take it that we will have to answer it in context-sensitive ways. Depending on the relations we have to other players, we may or may not want them to know certain things about us—donating medical data to a trustworthy research

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56. A related question, which I cannot address here for reasons of space, is the way in which digital companies function as multisided markets and use knowledge from some of their areas of activities in others in problematic ways, which again raises political-epistemic problems and challenges for market regulation.

57. On structural injustices and the resulting societal positions, see IRIS M. YOUNG, *RESPONSIBILITY FOR INJUSTICE* 18–19 (2011).

58. SENDHIL MULLAINATHAN & ELDAR SHAFIR, *SCARCITY*, 39 (2013).

59. See Lizzie O’Shea, *Digital Privacy Is a Class Issue*, *THE NEW REPUBLIC*, May 30, 2019, <https://newrepublic.com/article/154026/digital-privacy-class-issue> [<https://perma.cc/E5P8-H68C>].

60. On the Matthew effect, see generally Robert K. Merton, *The Matthew Effect in Science*, 159 *SCI.* 56 (1968); on the risk of algorithmic decisions leading to Matthew effects, see LISA HERZOG, *Algorithmic Bias and Access to Opportunities*, in *THE OXFORD HANDBOOK OF DIGITAL ETHICS* (2021).

institution is very different from giving it away to commercial insurance providers, for example. And as in the case of knowledge about products, seemingly trivial details in the institutional design can be expected to play a great role in, for example, liability rules about the provision of certain data. Those who want to defend market solutions therefore need to be very careful to attend to such details, both to understand how existing markets actually function and to provide recommendations for how these markets could be made better.

## V

### CONCLUSION: METHODOLOGICAL IMPLICATIONS

In this article, I have discussed how the knowability of both product features and customers' preferences matters for the character of markets and the design of economic institutions from a philosophical perspective. Depending on what can be known by whom, and how this enables or obstructs the practices of holding actors accountable, different institutional arrangements may be needed in order to fulfil the normative criteria that markets should fulfill—whether it is the minimum standard of efficiency or the more demanding standards such as autonomy, fairness, or non-violation of human rights in the supply chain. As such, the historical state of the art of different forms of knowledge matters for understanding which markets or other economic institutions can be put in place and how their functioning can be controlled, either by market participants themselves or by other parties.

In philosophical approaches to markets, these differences matter: they can make a decisive difference for the normative evaluation of markets compared to other institutional solutions. This means that, methodologically speaking, philosophers need to be cautious about the kinds of models or theoretical approaches they draw on to describe markets. Many traditional models used to describe markets, with a high level of abstraction and a pure focus on efficiency, are of limited usefulness when it comes to understanding the intricate differences between different types of products and, presumably, how the increasingly detailed knowledge about customer preferences changes markets. Instead, more fine-grained approaches are needed in order to capture the diversity of forms that markets can take.

To be sure, one *can* also formally model these differences between different institutional solutions—including the difference between Smith's canals and roads—if one likes. One could use concepts such as asymmetric information or transaction costs for describing them, and one could also build formal models for the purpose of illustration. After all, we always use concepts, and often also models, when thinking about social phenomena. But this use of models happens on a much lower scale of abstraction than, say, models of general equilibrium. In addition, depending on what kind of phenomenon one wants to describe, one needs to be willing to switch to different concepts or models that can capture them better. In other words, what I am proposing is a toolbox approach of concepts and models at the microlevel that can be used for understanding the

specificities of a wide range of specific markets.

But importantly, the use of such conceptual tools can only happen *after* one has understood what the epistemic preconditions of a certain market, or another economic institution, are, and how they influence the ensuing institutional dynamic. This requires methods other than abstract modeling. Often, the most promising starting points are qualitative approaches that aim at understanding specific institutional or market situations from the perspective of those directly involved.<sup>61</sup> In some cases, other forms of expert knowledge—such as the mineralogical expertise for determining the origins of diamonds based on their chemical features—are needed in order to understand what the options are.

For a realistic assessment of markets or other economic institutions, however, knowability is not the only factor that matters. It also matters to get a realistic picture of what knowledge buyers will typically have access to: how likely they are to process information, how they perceive different alternatives, and whether information is provided in ways that a lay person can understand. If one genuinely wants to make a case for the “buyer beware” norm in certain markets, then the question of how relevant knowledge can be made available to buyers in a way that supports autonomous decision-making is an urgent one. And, of course, one can also raise broader questions—about education, ideological and social pressures, among other things—that play a role for enabling individuals to make autonomous decisions, and therefore often intersect with the kind of epistemic questions I have discussed in this paper.

These issues also lead to questions about the role of scientists and scholars in the political battles around markets and market regulation. As historians have shown, many researchers have willingly entered an unholy alliance with corporations in order to delay the regulation of societally harmful markets. Corporations—with their think tanks and industry associations—have become very savvy in influencing research and the broader public’s perception of it. Awareness of these problems within academia still seems to be limited to specific fields, such as pharmaceutical research. Without understanding the ways in which epistemic battles around market regulation are fought, however, researchers might, willingly or unwillingly, become complicit in upholding economic institutions of doubtful normative value. The power that comes with economically relevant knowledge, like all forms of power, needs to be carried with responsibility and care.

Let me conclude on a more optimistic note. A deeper understanding of the epistemic issues at stake in specific social spheres may also, in some cases, lead to innovations that help find solutions that are normatively more attractive than markets because they may reach higher levels of autonomy or social welfare, or minimize the risk of abuse, etc. In certain areas, what is needed is a matching of supply and demand. But commodification and the use of prices as an allocation mechanism are undesirable for various reasons: for example, the potential harm

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61. See generally PETER SPIEGLER, *BEHIND THE MODEL: A CONSTRUCTIVE CRITIQUE OF ECONOMIC MODELING*, 165 (2015).

of unequal purchasing power or the general worries about commodification's effects on social relations. In such cases, matching mechanisms, such as the one for donor organs that Al Roth and his co-authors developed, can provide a better solution.<sup>62</sup> Thus, understanding the epistemic challenges of a particular field can help not only to better regulate markets, but also even to replace them, in some cases, with institutional solutions that provide efficiency, like markets, without commodifying goods and scoring higher with regard to other values.

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62. See generally Alvin E. Roth et al., *Kidney Exchanges*, 119 Q. J. ECON. 457 (2004).