Epistemic Injustice in Finance

de Bruin, Boudewijn

Published in:
Topoi

DOI:
10.1007/s11245-019-09677-y

Topoi (2021) 40:755–763
https://doi.org/10.1007/s11245-019-09677-y

Epistemic Injustice in Finance

Boudewijn de Bruin[1]

Published online: 4 October 2019

Abstract

This article applies philosophical work on epistemic injustice and cognate concepts (such as epistemic self-confidence) to study gender and racial disparity in financial markets. Members of disadvantaged groups often receive inferior financial services (they pay higher interest rates on loans, their loan applications are more likely to be rejected, etc.). In most jurisdictions, it is illegal to provide discriminatorily disparate treatment to groups defined by gender and skin colour. Racial disparity in financial services is generally considered to be discriminatory (and therefore illegal). The standard view among most regulators is that *gender* disparity is *not* discriminatory, though. Through an analysis of various exemplary cases, I propose *testimonial* injustice as a candidate explanation for some of the existing forms of racial disparity found in financial services. I show how prejudices about gender and finance decrease *epistemic self-confidence*, and how this leads to gender disparity. And I consider particularly intractable forms of *self-fulfilling* testimonial injustice.

Keywords Epistemic injustice · Testimonial injustice · Epistemic self-confidence · Self-fulfilling · Finance · Discrimination · Gender · Race

Members of disadvantaged groups often receive inferior financial services: They pay higher interest rates on loans, they are more frequently underinsured, their loan applications are more likely to be rejected, and they often have suboptimal retirement plans (Cheng et al. 2011; Gray 2012; Heim et al. 2012). Given the central role that finance plays in human lives, these are serious concerns that are studied under rubrics such as *gender disparity* and *racial disparity*. In most jurisdictions, it is illegal to provide discriminatorily disparate treatment to groups defined by gender, skin colour, or other legally protected characteristics. Yet while racial disparity in financial services is generally considered to be discriminatory (and therefore illegal), the standard view among most regulators is that *gender* disparity is *not* discriminatory.

Building on recent work on *epistemic* forms of injustice and cognates, I argue that this verdict may have to change, and that a significant component of gender disparity comes about through prejudicial views about gender and finance, which then lead to epistemic injustice. I also offer a new interpretation of racial disparity in terms of epistemic, and in particular *testimonial*, injustice. Work on epistemic injustice was pioneered by Miranda Fricker (2007), and is part of a larger rapprochement between ethics and epistemology, which is gaining traction in business and medical ethics (Carel and Kidd 2014; De Bruin 2013). One particular form of epistemic injustice, *testimonial injustice*, arises when members of a dominating group hold negative prejudices against members of a dominated group, which lead them to assign lesser than warranted credibility to the utterances or knowledge claims made by members of the dominated group. Assigning lesser than warranted credibility constitutes an injustice in that it wrongs them as knowing subjects. Fricker's main example of testimonial injustice comes from Harper Lee's *To Kill a Mockingbird*. In this novel, a black man in Alabama in the 1930s stands trial for having raped a white girl. Circumstantial evidence is overwhelmingly on the side of his being innocent, but the all-white jury refuses to believe his testimony on the basis of an unjustified prejudice that black people are generally untrustworthy—and so he is convicted. Testimonial injustice has been demonstrated in a wide variety of contexts, including patient experiences in medical ethics (Carel and Kidd 2014), inclusiveness in

✉ Boudewijn de Bruin
b.p.de.bruin@rug.nl

1 Faculty of Philosophy, Faculty of Economics & Business, University of Groningen, Oude Boteringestraat 52, 9712 GL Groningen, The Netherlands

education (Frank 2013), and indigenous people in law (Tsosie 2012).

This article focuses on the market for consumer and small business loans. In the wake of the global financial crisis, philosophers and business ethicists have turned to questions concerning finance (De Bruin 2015; Claassen 2015; Herzog 2017; Hudon and Sandberg 2013; Van't Klooster 2019; Meyer 2017; Sorrell 2018; Wollner 2014). The literature on epistemic injustice, however, has so far focused primarily on applications in professions such as healthcare, education, and law, rather than business, despite the fact that economists and psychologists show an increasing interest in the economic consequences of prejudice, stereotypes, and other epistemic phenomena such as motivated reasoning (Bénabou and Tirole 2016). The idea that underlies this article is that epistemic injustice offers a fruitful analytical framework to approach normative questions in financial ethics in close connection with empirical work from psychology and economics.

The article is in three parts. Through an analysis of various exemplary cases, I first propose *testimonial* injustice as a candidate explanation for some of the existing forms of racial disparity found in financial services. I then show how prejudices about gender and finance decrease *epistemic self-confidence*, and how this leads to gender disparity. And I finally consider particularly intractable forms of *self-fulfilling* testimonial injustice. Before proceeding, a disclaimer is in order: this article has mixed ambitions. It has come forward out of an assessment that the normative literature on discrimination in consumer markets in business ethics and political theory, despite its normative and empirical rigour, fails to pay attention to relevant epistemic features of the causes and consequences of discrimination. Pointing to some of these features (testimonial injustice and epistemic self-confidence in particular), therefore, is among my aims here. Yet at the same time what I do here can only be a first step. Many questions will remain unanswered, and many issues unaddressed. Moreover, unlike the aforementioned normative literature, my aim here is not to develop practicable suggestions that might help policy makers to combat discrimination more adequately, but rather to study some examples of relevant phenomena through an admittedly abstract philosophical lens.

1 Testimonial Injustice

In this section, I consider the received view about discrimination in law and economics that informs regulation in many countries. Zooming in on business and consumer lending, I show how assessments of credit risk (the risk that borrowers default on their loans) may be clouded by prejudice concerning the credibility and skills of members of disadvantaged social groups. I propose testimonial injustice as a candidate explanation for some of the existing forms of disparity in financial services; however, I also note that testimonial injustice fails to account for disparity that is due to demand-side factors, such as the way prospective borrowers gain information about lenders.

1.1 Economics of Discrimination

The criteria for what counts as discriminatory treatment, according to most instances of anti-discrimination legislation, are primarily drawn from economics.[1] According to Becker's (1957) influential theory of *taste-based* discrimination, for disparate treatment to count as discriminatory, the treatment must go against the economic interests of the discriminator. Discriminating agents have a 'taste' for discrimination that supports disparate treatment even if that means that discriminators forego income or other economic gains.

It is questionable whether most discrimination is taste-based, though. If Becker were right, non-discriminators should be seen driving discriminators out of the market. In a racist environment, for instance, a non-racist employer would hire black employees at lower costs. Economists such as Arrow (1973) and Phelps (1972) have pointed out, however, that these predictions are not borne out by the facts. That racial discrimination decreased in the US in the 20th century was not so much the result of increased competition as it was due to legislation: the Civil Rights Act of 1964 in particular (Darity and Mason 1998). Arrow and Phelps therefore put forward the alternative concept of *statistical* discrimination, which is the standard concept in law and economics.

Statistical discrimination takes place when members of a certain social group receive disparate treatment because they are believed to be statistically different from members of other groups in relevant ways. If loan applications from members of group X are rejected more often than those of members of group Y, because loan officers believe that members of group X are, on average, less creditworthy, then this counts as statistical discrimination. Statistical discrimination is illegal (in some but not all jurisdictions) if and only if it involves groups that are defined by particular characteristics singled out by law for special protection. These characteristics typically include gender, skin colour, sexual preference, and marital status (Schwemm 1990).[2]

[1] In the context of this article, the most important pieces of legislation in the US are the Fair Housing Act of 1968 and the Equal Credit Opportunity Act of 1974. In the UK, nine pieces of legislation were merged into the Equality Act of 2010.

[2] It is important to note that statistical discrimination is illegal even if the relevant groups differ in ways that would make it economically rational for loan officers to allot them different treatment.

Using the concept of statistical discrimination, economists have investigated disparity in a number of markets, including the market for second-hand cars, the job market, the market for real estate, and financial markets (mortgages, consumer loans, business loans). There is broad agreement among economists about the existence and scale of racial and gender disparity in financial markets (Ladd 1998). Female borrowers pay higher interest rates on their loans than male borrowers (Cheng et al. 2011); they get loans with less favourable conditions (Carter et al. 2007); their loan applications are more frequently rejected (Gray 2012); and they face less favourable treatment in case of defaulting on a loan (Dymski et al. 2013). Very similar observations hold for people of colour.[3] Part of the observed disparity may be the result of women (or people of colour, respectively) borrowing money for different types of projects than men (or white people, respectively). The projects may be different in terms of the size of the loan, the loan-to-income ratio, or the borrowers may have different income or assets, etc. However, once these and other relevant control variables are taken into account, most studies still find statistically significant disparity.

1.2 Lending and Credit Risk

To understand the contribution epistemic (or testimonial) injustice makes to disparity, it is useful first to examine lending in more detail. Banks and other lenders lend money to businesses to buy new machinery, to explore new markets, to develop new products, etc., and they lend to households to finance the purchase of a house, a piece of land, an education, and a host of other things. Loans have to be repaid, and hence prudent lenders make the conditions of the loan dependent on their estimate of the likelihood that the borrower will repay the loan. This means that *ceteris paribus* a higher credit risk (the risk that the borrower will not repay the loan) will be associated with a higher interest rate.

An applicant's creditworthiness depends on *exogenous* factors (such as the general state of the economy) that the borrower cannot control. It also depends on *endogenous* characteristics of the borrower and the projects the loan is meant to finance. Endogenous characteristics include the financial position of the borrower (income, assets, etc.), the borrower's skills and expertise, or, in the case of business loans, the company's financial position, its revenues and expenses, the skills and experience of its employees, the quality of management, etc. Banks and other lenders request information from prospective borrowers concerning these and other endogenous characteristics. This is part of standard risk management.

When such information is interpreted and processed in biased ways, however, this may lead to testimonial injustice—and disparity may be the result. An illustrative example involves loan applications from black female managers of small businesses (Gray 2012). The prejudice concerns the relevance of college education as an indication of the level of the CEO's (i.e., the applicant's) management skills. Generally, higher levels of education will be associated with stronger skills, and, consequently, with higher creditworthiness and lower credit risk. It is therefore common practice among most lenders to request information about the educational level of the CEO.

In the absence of prejudices concerning credibility and skills, we should expect that, whenever a college degree makes a difference to the likelihood of the bank approving a particular loan, this difference is *ceteris paribus* the same across social groups. Yet this is not what we see in practice. Gray (2012) examined the impact of having a college degree on loan approval rates among small and medium-sized enterprises with white and black female CEOs. The idea of this study was that if having a college degree increases the chances of getting funding, *not* having a college degree should set black businesspeople back as compared to white businesspeople. Gray found that black applicants are indeed 'punished' much more heavily for not having a college degree than white applicants. For white applicants, not having a college degree decreases the probability of the loan being approved by 0.4 percent, which for practical purposes is nil. For black applicants, on the other hand, the decrease is 81 percent.

Gray's study offers a striking example of how, on the basis of similar evidence (a college degree), loan officers judge the applicant's level of credibility and skills *differently*. They judge one applicant as more suitable to turn the loan into a profitable project than another, despite their being the same in all relevant respects. This constitutes testimonial injustice.[4] The differences between loan approval rates reveal a prejudicial belief about applicants *without* a college degree. This prejudice comes down to the following: While white applicants without a college degree possess the credibility and skills (required to manage a business well) to an extent sufficient for being a successful CEO, black applicants without a college degree do not possess these skills to

[3] The literature on racial and gender disparity is large; references cited here only include articles that are relevant in the context of the argument.

[4] Testimonial injustice means assigning lesser than warranted credibility to someone. It is important to underscore that the testimonial injustice that black applicants face has nothing to do with the credibility of the financial statements that they submit as part of the loan application procedure. Rather, the prejudice involves the credibility, knowledgeability, and skills of black applicants themselves, insofar as required for making the project profitable were financing to be provided.

the required degree. As a result, prejudiced lenders believe that black applicants need a college degree to prove that they have the requisite skills, whereas white applicants do not need such proof. The prejudice is false, however, because there is no indication that white applicants without a college degree possess more of these skills.[5] Requiring additional proof, then, harms and wrongs black applicants in a way that reminds us of an oft-quoted statement by Steven Carter (1994), a Yale law professor, to the effect that 'Our parents' advice was true: We really do have to work twice as hard to be considered half as good [as whites].'

1.3 Search Behaviour

I have offered testimonial injustice here as a potential explanation of racial disparity. This is a supply-side explanation, as it attributes the disparity to decisions made by the suppliers of the loans (loan officers in particular). Emerging research in economics suggests, however, that a considerable part of *gender* disparity must be attributed to demand-side factors. A study by Cheng et al. (2011) considers gender disparity in mortgage lending. While the data they collect unequivocally show that women pay higher interest rates on their mortgages than men (even controlled for relevant variables), there is no evidence that this happens as a result of testimonial injustice on the part of loan officers. Rather, the study attributes the disparity to differences in how prospective borrowers gain information about mortgage deals. There is evidence that the search techniques used by women differ from those used by men across two dimensions. The first dimension is *search intensity*. Women search less intensely than men in that they spend less time and effort looking for the best mortgage deal. The second dimension is *search diversity*, that is, the variety of sources of information retrieved. The study shows that women use a less diverse or varied range of sources of information. Where men gain information about mortgages through, for instance, advisers and the Internet, women largely opt for mortgage lenders recommended by family members or friends.[6]

Regulators will see disparity arising out of *supply-side* testimonial injustice as an illegal form of statistical discrimination. Disparity that can be traced back to *demand-side* factors (such as search behaviour) will, in contrast, not generally be viewed as immoral or unjust. In the next section, I argue against that view. Let us briefly anticipate the argument. At the root of testimonial injustice vis-à-vis members of a disadvantaged social group X lie negative prejudices concerning its members. These prejudices lead members of other groups to devalue the credibility of members of X, that is, to commit testimonial injustice. At the same time, repeated instances contribute to maintaining or propagating the underlying prejudices. So testimonial injustice is caused by and contributes to negative prejudices. My argument is, then, that not only does an unjust decrease in *credibility* among members of X but also an unjust decrease in their epistemic *self-confidence* harm and wrong them as knowing subjects. This follows an idea touched upon by Fricker (2007, pp. 47–51) in her initial treatment of epistemic injustice. Using insights from the psychology and sociology of finance, I show that the demand-side factors that account for gender disparity can be explained as resulting from a deflated sense of epistemic self-confidence that is due to persistent negative prejudices concerning women and finance.

2 Epistemic Self-Confidence

The argument involves showing how prejudice decreases epistemic self-confidence, and how decreased epistemic self-confidence decreases the quality of financial decision-making. First, I survey some of the relevant evidence concerning negative prejudices about gender and finance. I then briefly introduce the concept of epistemic self-confidence. I show that epistemic self-confidence is a precondition for successful epistemic action and that lowered epistemic self-confidence regarding finance negatively affects financial decision-making in a way that leads to gender disparity.

2.1 Prejudice

Prejudices concerning gender and finance have been amply demonstrated by psychologists and sociologists. Surveying and extending this literature, Assassi (2009) draws attention to the consequences of the once widespread—and, as she shows, still operational—prejudice concerning so-called 'natural' differences between men and women regarding finance. Because of their alleged nature, women were often—and sometimes still are—seen as financially 'irrational' and 'irresponsible,' or as too 'emotional' to make sound financial decisions. This prejudice was exacerbated by a moralized view about debt: Whereas a man who was unable to repay a loan would at most be condemned for his

[5] One might object that the difference in loan approval rates for black and white borrowers may be explained by factors such as potential differences in quality between the college education that black and white people receive, or the difference between degrees (different fields of study), or because of the fact that black applicants might submit more risky, or less profitable, business proposals. This objection has little merit, however, because the study controls for these kinds of factors, thereby effectively making the pools of black and white applicants that figure in the comparison very similar.

[6] It is important to stress that the present case study derives its empirical backing from Cheng et al. (2011). Usual disclaimers about ecological validity are in place. For the purposes of my argument (i.e. to illustrate the relevance of considering epistemic issues in discrimination) this is largely immaterial, though.

lack of financial foresight or luck, a woman defaulting on a loan risked losing her social standing as a virtuous person altogether; she would risk her honour. Consequently, women were seen as in constant need of male 'protection,' with de facto exclusion from mainstream finance as a result. Finding the doors of banks and other traditional financiers closed, women therefore resorted to borrowing from family members and friends, with the result that finance became associated with social networks rather than professional service providers. Similar observations have been made in the context of the ethics of microfinance (Aggarwal et al. 2015; Hudon and Sandberg 2013; Orser and Foster 1994).

These findings are corroborated by empirical research on marketing in financial services (Plakoyiannaki et al. 2008). Reinforcing prejudicial and stereotypical views about gender and finance, marketing frequently targets women explicitly through 'subjective' or 'emotional' content (e.g., appealing to feelings of security and safety) rather than 'objective' or 'rational' content (such as the quantitative or financial characteristics of the loan), thereby portraying women as lacking financial rationality and insight (Darley and Smith 1995; Lee and Hogarth 2000).[7] These prejudices may affect the behaviour of prejudiced lenders, but they operate in a more 'insidious' way too (Dardenne et al. 2007, p. 775): they affect the behaviour of women who are the subject of prejudice. Work in psychology suggests that prejudice changes the behaviour of victims in almost self-fulfilling ways. Repeated exposure to the prejudice that women lack the capacity to understand and manage their finances decreases their self-efficacy (or *epistemic self-confidence*, see below) to manage their finances. The effects are multifarious. For our purposes, the most significant effects of gender prejudices are that they decrease the mathematical and other quantitative skills necessary for financial decision-making (Bradley-Geist et al. 2015; Spencer et al. 1999). Moreover, these effects extend to the bystanders witnessing prejudicial behaviour or attitudes (Bradley-Geist et al. 2015). There is also evidence that, in environments where prejudice is prevalent, women avoid the formal financial sector even if, in their actual experience, there is no indication that banks will discriminate against them (Ongena and Popov 2016); moreover, in such environments women also invest less in 'financial literacy,' that is, knowledge about finance (Driva et al. 2016).[8]

2.2 Epistemic Self-Confidence and Financial Decision-Making

I have given a brief overview of empirical work on prejudices and stereotypes about gender and finance, and provided evidence to the effect that these prejudices decrease the self-confidence of women concerning finance. I now introduce the concept of epistemic self-confidence in more detail and show that it is a precondition for successful epistemic action. I conclude by arguing that decreased epistemic self-confidence regarding finance negatively affects financial decision-making, which in turn partly explains gender disparity.

The starting point of my conception of epistemic self-confidence is a view that captures non-epistemic confidence (or trust) along the dimensions of *capacity* and *motivation*.[9] According to this view, a person S trusts another person P to perform some action A whenever S believes that P has the capacity and the motivation to perform A. A standard illustrative example is from medicine: You trust the doctor to perform the necessary surgery to the extent that you believe that he/she is sufficiently capable and motivated to do so. A consequence of this view of trust is that reflexive forms of trust (i.e., self-confidence) involve assessments of a person's *own* capacity and motivation. If we trust ourselves to perform some action, we view ourselves as having the requisite skills (capacities) and as being sufficiently enthusiastic to do the job (motivation). It is straightforward to apply this to the epistemic domain, that is, to epistemic tasks such as gathering evidence, processing information, evaluating informants or sources of evidence, transmitting knowledge, etc. People who are *epistemically self-confident* in a certain domain of knowledge have a sense of possessing sufficient capacities and motivation to obtain knowledge and acquire skills in that domain.

Epistemic self-confidence contributes to efficient knowledge acquisition (Fricker 2007). If you do not trust your capacities to distinguish a good source of information (concerning some question) from a bad one, or if you do not have the energy or desire to carry out an investigation, then you will be less likely to end up with an answer to a question. This is borne out by psychological research on self-confidence (or self-efficacy) and finance that was briefly mentioned above. The general insight is that there is a statistically significant relationship between a person's level of self-confidence and particular financial outcomes. Self-confident people are, for instance, more likely than those with a deflated sense of self-confidence to have savings and

[7] These observations are context-dependent and are likely to become less pronounced over time in less traditional communities.

[8] For similar effects in a business context, see, for example, Hoyt et al. (2010).

[9] I use the term *confidence* rather than *trust* in order to align with general usage in economics and psychology. Philosophers generally use *trust*. See, for example, Hardin (2002).

investment accounts, and less likely to have credit card debt (Farrell et al. 2016). They save more, and are more likely to invest in stocks and mutual funds (Tang and Baker 2016). They are also more likely to seek financial help when needed (Lim et al. 2014). These effects (and others not referenced here) attest to the fact that financial decision-making is positively affected by higher, and negatively affected by lower, epistemic self-confidence.

Gender disparity in the mortgage market offers a case in point. As we saw above, women pay higher interest rates on average on their mortgages than men, which Cheng et al. (2011) attributed to women using less intense and less diverse information gathering strategies than men. Where men consult a broad range of informational sources including, among other things, the Internet and financial advisers, women draw their information mostly from family members or friends. As Cheng et al. (2011) show, this leads to suboptimal mortgage deals because the mortgage that is good for a family member or friend (and their house and household) is likely to be less appropriate for you (and your different house and household). By contrast, Internet sources and financial advisers allow the prospective borrower to get more 'tailor-made' advice.

Yet, for people with lower epistemic self-confidence regarding finance, it may be a very sensible epistemic strategy to consult family members and friends. The particular source or informant that it is rational to turn to for an answer to a certain question depends, among other things, on one's ability to judge the reliability of sources and informants. Individuals who see themselves as lacking the capacities to distinguish a bona fide website or financial adviser from a fraud will, as a result, tend to consult sources whose reliability they believe they can judge, such as family members or friends. What they may fail to realize, however, is that even if particular family members or friends have high levels of *general* reliability, they may not be reliable sources of information about mortgages. That explains why following their advice leads to suboptimal financial outcomes on average.

This concludes the argument about demand-side discrimination. I showed how prejudice decreases epistemic self-confidence by surveying some of the relevant evidence concerning prejudice about gender and finance, and then argued that decreased epistemic self-confidence decreases the quality of financial decision-making. Before proceeding to examine the potential for policymaking, it is important to underscore that I do not want to commit myself to the view that there is something morally problematic per se with people lacking epistemic self-confidence. We lack epistemic self-confidence regarding many domains and accept that only some people possess it, for instance, regarding quantum mechanics or Rococo art. The reason why we should be interested here in deflated epistemic self-confidence is that it does constitute a moral concern if members of certain disadvantaged groups lack epistemic self-confidence in domains that are essential to living a decent life, and/or if the lack of self-confidence can be attributed to widespread negative prejudices concerning the credibility and skills of members of these groups. As I argued, both of these conditions are applicable to the present case.

3 Self-Fulfilling Injustice

I have argued that negative prejudices concerning the financial capacities and skills of members of disadvantaged groups lead to two forms of disparity. On the supply side, we found that such prejudices contribute to testimonial injustice, with the result that creditworthy members of disadvantaged groups do not receive financial services or receive them at higher costs. On the demand side, we found that such prejudices lead to a decrease in epistemic self-confidence among members of disadvantaged groups, with suboptimal search behaviour and product selection as a result. I conclude by turning to the question of whether the prejudices that lay at the bottom of these phenomena can be overcome, and argue that self-fulfilling forms of testimonial injustice constitute a daunting challenge in this respect.

A common line of thought is to seek inspiration in a burgeoning philosophical and empirical literature on cognitive biases (Anderson 2012; Origgi 2010). Psychologists and economists have uncovered a whole range of biases that stand in the way of fully rational information processing. Examples are *confirmation bias*, which makes people assign too much weight to evidence favouring their initial beliefs, or *overconfidence*, where people overestimate the probability of their beliefs being correct.[10] The behavioural consequences of these biases are well understood, also in finance. Overconfidence explains, for instance, why non-professional investors obtain worse results after being exposed to more information about the companies that they invest in (annual reports, analyst statements, etc.): they overestimate their own ability to make sense of documents that as a matter of fact need a large degree of technical expertise to read (Barber and Odean 2002).

How can these biases be mitigated? Generally, two types of answer can be distinguished: a free-market and an interventionist approach.[11] The free-market approach holds on to the view that biases will tend to disappear in competitive markets. To use the above example, overconfident

[10] For a discussion of those biases relating to epistemic injustice, see Ahlstrom-Vij (2014).

[11] These approaches coincide somewhat with the distinction between taste-based and statistical discrimination, as discussed in the first section.

non-professional investors will quickly realize that they lose out against professional investors, as a result of which they will stop investing all by themselves, and invest their money in funds managed by professionals (or in an index fund). Or so the free-market advocates claim.

Many economists believe, however, that more interventionist strategies are needed. They observe that the free-market approach makes an assumption to the effect that you will spot your own biases as soon as you become aware of the fact that non-biased people do better; in other words, the assumption is that people will learn from their mistakes. Advocates of the interventionist approach to countering cognitive biases believe that this assumption does not hold in all cases. Their argument is that in order to learn about your errors and change behaviour, two conditions have to hold: The number of biased actions has to be sufficiently large, and the time period between biased action and perceived consequences has to be sufficiently limited.

These two conditions are certainly true for such everyday tasks as shopping for food in a supermarket; however, most people make mortgage, insurance, or retirement planning decisions only a few times in their lives, and the consequences of these decisions often manifest only after very long periods of time. Hence interventionists can argue that the learning mechanism presupposed by the free-market approach is absent in finance and that therefore regulation should be developed to protect people against these biases. A burgeoning literature on 'debiasing' provides concrete suggestions of how that could be accomplished (Larrick 2008; Willis 2011). Sometimes this could take the form of simply informing people about potential biases. More often, it will involve restructuring, reframing, or nudging decision-making procedures.[12] To give one example, since the global financial crisis, many regulators have made mortgage advice mandatory on the assumption that this helps citizens, because advisers avoid cognitive biases (Hackethal et al. 2012).

At first sight, one might be tempted to think that the free-market approach and the interventionist approach are both serious candidates for mitigating the prejudices discussed in this article, since both are as epistemically irrational as overconfidence and other cognitive biases are. But in reality this would be far too optimistic a view of the prospects for countering testimonial injustice and deflated epistemic self-confidence. Unlike cognitive biases, the prejudices discussed in this article are part of large webs of negative beliefs that members of powerful groups have about members of disadvantaged groups. These beliefs are often essential for the powerful to 'justify' their power to themselves and others, however spurious such justification may be. Consequently, there will often be little incentive to change these beliefs. A result of this is that free-market and interventionist approaches—inasmuch as they are thought to mitigate cognitive bias—only address racial and gender disparity when the incentives are suitably aligned.

There are certainly cases in which debiasing helps. The different approval rates of white and black applicants for business loans, as discussed above, are a good example. To the extent that this differential treatment is due to false prejudices concerning the risks of lending to people of colour, lenders would profit from debiasing strategies, because this prejudice leads lenders to forego sources of additional profit by rejecting a significant number of fully creditworthy black applicants. So this would be a case where debiasing would contribute to profit maximization.[13] Unfortunately, incentives are not always so nicely attuned. Gender disparity in the mortgage market is a case in point. A lender who takes steps to help women improve their 'search efforts' (as they were discussed earlier in this article) may reasonably be expected to think this is a money-losing situation: Typically, it is in an expensive seller's interest for buyers (who do not compare prices) to remain uninformed about prices.

If debiasing does not help, does a free-market approach have more to recommend it? Under the ideal conditions of a competitive and free market, market participants would be fully informed about the characteristics of the products sold on the market. So consumers lacking such information are often seen as an indication of market failure, in particular when such a lack of information is structural rather than incidental. However, there are also good reasons to question the very suitability of the free-market approach when it comes to addressing the concerns raised in this article. When lenders reject certain applicants on the basis of false prejudiced beliefs about their epistemic credentials, they contribute to testimonial injustice. A free-market approach to testimonial injustice must therefore assume that the tendency of markets is to facilitate changing false beliefs into true beliefs. Markets would thus serve to enlighten lenders about such things as the true creditworthiness of members of certain groups, as a result of which they would no longer discriminate in lending.

It is by no means guaranteed, however, that the invisible hand of the free market does in fact fulfil this enlightening task adequately. This is because false beliefs can turn into true beliefs in two crucially different ways. One way is to

[12] For applications in the context of finance, see, for example, the contributions to the special interdisciplinary issue on financial decision-making in the *Journal of Marketing Research*, Vol. 48, October 2011.

[13] Debiasing need not be very complex here: simply organize the loan application procedure in such a way that the lender's decision-makers (loan officers, etc.) are unaware of the applicant's skin colour.

change the belief: A person S holds the incorrect belief that some proposition p is false; then S receives evidence to the effect that p is actually true, and, in the light of this evidence, S revises his/her belief into a belief that p is true. Another way is to change the world: A person S holds the incorrect belief that proposition p is false, and, on the basis of this belief, S performs certain actions that result in a sequence of events that end up making proposition p false indeed, in what may be called a *self-fulfilling* way.

It is clear that testimonial injustice is only redressed through belief revision. As research in financial economics pioneered by Swire (1995) shows, there are some discriminatory beliefs that become true in self-fulfilling ways rather than through revision (also see Arrow 1998; Yinger 1998). One example involves judgements of creditworthiness. To begin with, assume that there are widespread negative prejudices about the creditworthiness, reliability, and capacities of members of some group X. Members of X are generally seen as less trustworthy than members of some group Y; they are seen as lacking accuracy, diligence, and other skills needed to run a financially healthy household budget. As a result of this prejudice, most lenders exclude members of X, or offer them mortgage conditions that compare unfavourably to those that members of Y are given.[14] Assume, moreover, that members of X are aware of these prejudices as well as being aware of the effects that these have on the likelihood of getting a good mortgage deal. This assumption is plausible, as Swire (1995) shows. In other words, they see that the chances of obtaining a mortgage are considerably lower for them than for members of Y, even in situations of equal creditworthiness. If that is the case, the motivation for members of X to maintain or boost their creditworthiness will decrease. To invest in creditworthiness, members of X would have to do such things as cutting down on consumption and setting aside money to pay off loans, ensuring a decent credit score, maintaining a disciplined regime of paying bills, balancing the budget, saving, etc. Since they do not believe that (additional) creditworthiness will help their chances of getting a better mortgage deal (compared to members of Y), it is rational for them not to make that extra investment. As a result, after a period of time, the false beliefs that lenders have about group X will become true in a self-fulfilling way. Prospective borrowers from X will be less creditworthy (than otherwise comparable members of Y), because they have invested less in things that would help them qualify for a loan.

Ideally, a free-market approach to counter epistemic forms of injustice would lead lenders to *revise* their false beliefs about the creditworthiness of members of the disadvantaged group. Swire (1995) shows, however, that there is no guarantee that such belief revision will happen. The market may just as well develop in a direction where victims of prejudice rationally conform to the prejudice. While this is not always the case, empirical work in economics suggests that discrimination in mortgage markets in particular (and labour markets, insurance, and housing as well) must often be seen in light of self-fulfilling phenomena.

Let me conclude by noting a second feature that Swire's (1995) ideas about self-fulfilling prejudice underscore. Where false prejudice becomes true, because the victims conform to the prejudice, historical occurrences of injustice may become difficult to demonstrate. This is because there is no longer a clash between the beliefs of the powerful and the conditions of the dominated. A bigger challenge than that of mitigating the prejudices that lead to testimonial injustice and lowered epistemic self-confidence may simply be the challenge of spotting them. Epistemic injustice will often escape the eye.

Acknowledgements Research for this essay was funded by the Dutch Research Council, NWO, grant number 360-20-380. I would like to thank collectively the audiences of the Society of Applied Philosophy annual conference in Utrecht, June 2018, the symposium on Justice and Markets in Ottawa, October 2017, the Society of Business Ethics annual conference in Atlanta, August 2017, and the Finance and Social Justice Conference in Bayreuth, November 2016. I owe special thanks to Kayleigh Doherty, Elianna Fetterolf, Miranda Fricker, Randall Germain, Lisa Herzog, Ian Maitland, Matthias Risse, Barend de Rooij, and Gabriel Wollner for constructive feedback on an earlier version of this manuscript. Thanks are also due to two anonymous reviewers of this journal.

Compliance with Ethical Standards

Conflict of interest The author declares that he has no conflict of interest.

Research Involving Human Participants and/or Animals This paper does not contain any studies with human participants or animals performed by the author.

[14] These lending decisions are rational insofar as a prudent lender would not lend money to households that fail to meet the required criteria. Whether the beliefs are epistemically irrational, because they are false, depends on whether they were justified given the available evidence, for instance. We can assume here that they were not, but this is immaterial when it comes to the example. It may well be material for judgements concerning moral responsibility, however, but this is not up for discussion in this article.

References

Aggarwal R, Goodell JW, Selleck LJ (2015) Lending to women in microfinance: role of social trust. Int Bus Rev 24:55–65

Ahlstrom-Vij K (2014) Procedural justice and the problem of intellectual deference. Episteme 11:423–442

Anderson E (2012) Epistemic justice as a virtue of social institutions. Soc Epist 26:163–173

Arrow KJ (1973) The theory of discrimination. In: Ashenfelter O, Rees A (eds) Discrimination in labor markets. Princeton University Press, Princeton, pp 3–33

Arrow KJ (1998) What has economics to say about racial discrimination? J Econ Perspect 12:91–100

Assassi L (2009) The gendering of global finance. Palgrave Macmillan, London

Barber BM, Odean T (2002) Online investors: do the slow die first? Rev Fin Stud 15:455–488

Becker G (1957) The economics of discrimination. University of Chicago Press, Chicago

Bénabou R, Tirole J (2016) Mindful economics: the production, consumption, and value of beliefs. J Econ Perspect 30:141–164

Bradley-Geist JC, Rivera I, Geringer SD (2015) The collateral damage of ambient sexism: observing sexism impacts bystander self-esteem and career aspirations. Sex Roles 73:29–42

Carel H, Kidd IJ (2014) Epistemic injustice in healthcare: a philosophical analysis. Med Health Care Phil 17:529–540

Carter SL (1994) Reflections of an affirmative action baby. Basic Books, New York

Carter S, Shaw E, Lam W, Wilson F (2007) Gender, entrepreneurship, and bank lending: the criteria and processes used by bank loan officers in assessing applications. Entrep Theory Pract 31:427–444

Cheng P, Lin Z, Liu Y (2011) Do women pay more for mortgages? J Real Estate Financ 43:423–440

Claassen R (2015) Financial crisis and the ethics of moral hazard. Soc Theory Pract 41:527–551

Dardenne B, Dumont M, Bollier T (2007) Insidious dangers of benevolent sexism: consequences for women's performance. J Pers Soc Psycho 93:764–779

Darity WA, Mason PL (1998) Evidence on discrimination in employment: codes of color, codes of gender. J Econ Perspect 12:63–90

Darley WK, Smith RE (1995) Gender differences in information processing strategies: an empirical test of the selectivity model in advertising response. J Advert 24:41–56

De Bruin B (2013) Epistemic virtues in business. J Bus Ethics 113:583–595

De Bruin B (2015) Ethics and the global financial crisis: why incompetence is worse than greed?. Cambridge University Press, Cambridge

Driva A, Lührmann M, Winter J (2016) Gender differences and stereotypes in financial literacy: off to an early start. Econ Lett 146:143–146

Dymski G, Hernandez J, Mohanty L (2013) Race, gender, power, and the US subprime mortgage and foreclosure crisis: a meso analysis. Fem Econ 19:124–151

Farrell L, Fry TR, Risse L (2016) The significance of financial self-efficacy in explaining women's personal finance behaviour. J Econ Psych 54:85–99

Frank J (2013) Mitigating against epistemic injustice in educational research. Educ Res 42:363–370

Fricker M (2007) Epistemic injustice. Oxford University Press, Oxford

Gray JW (2012) Bi-polar: college education and loans to small businesses headed by black females. Rev Black Polit Econ 39:361–371

Hackethal A, Haliassos M, Jappelli T (2012) Financial advisors: a case of babysitters? J Bank Financ 36:509–524

Hardin R (2002) Trust and trustworthiness. Russell Sage Foundation, New York

Heim BT, Lurie IZ, Ramnath SP (2012) Immigrant-native differences in employment-based retirement plan participation. J Pension Econ Finan 11:365–388

Herzog L (2017) What could be wrong with a mortgage? Private debt markets from a perspective of structural injustice. J Pol Phil 25:411–434

Hoyt CL, Johnson SK, Murphy SE, Skinnell KH (2010) The impact of blatant stereotype activation and group sex-composition on female leaders. Leadersh Quart 21:716–732

Hudon M, Sandberg J (2013) The ethical crisis in microfinance: issues, findings, and implications. Bus Eth Quart 23:561–589

Ladd HF (1998) Evidence on discrimination in mortgage lending. J Econ Perspect 12:41–62

Larrick RP (2008) Debiasing. In: Koehler DJ, Harvey N (eds) Blackwell handbook of judgment and decision making. Blackwell Publishing, Malden, pp 316–338

Lee J, Hogarth JM (2000) Consumer information search for home mortgages: who, what, how much, and what else? Finan Serv Rev 9:277–293

Lim H, Heckman SJ, Letkiewicz JC, Montalto CP (2014) Financial stress, self-efficacy, and financial help-seeking behaviour of college students. J Finan Couns Plan 25:148–160

Meyer M (2017) The right to credit. J Pol Phil 26:304–326

Ongena S, Popov A (2016) Gender bias and credit access. J Money Credit Bank 48:1691–1724

Origgi G (2010) Epistemic vigilance and epistemic responsibility in the liquid world of scientific publications. Soc Epist 24:149–159

Orser BJ, Foster M (1994) Lending practices and Canadian women in microbased businesses. Women Manag Rev 9:11–19

Phelps ES (1972) The statistical theory of racism and sexism. Am Econ Rev 62:659–661

Plakoyiannaki E, Mathioudaki K, Dimitratos P, Zotos Y (2008) Images of women in online advertisements of global products: does sexism exist? J Bus Ethics 83:101–112

Schwemm RG (1990) Housing discrimination: law and litigation. C Boardman, New York

Sorrell T (2018) Responsibility in the financial crisis. Midwest Stud Philos 42:20–36

Spencer SJ, Steele CM, Quinn DM (1999) Stereotype threat and women's math performance. J Exp Soc Psychol 35:4–28

Swire PP (1995) Equality of opportunity and investment in creditworthiness. U Penn Law Rev 143:1533–1559

Tang N, Baker A (2016) Self-esteem, financial knowledge and financial behaviour. J Econ Psych 54:164–176

Tsosie R (2012) Indigenous peoples and epistemic injustice: science, ethics, and human rights. Wash Law Rev 87:1133–1201

Van't Klooster J (2019). The ethics of delegating monetary policy. J Polit, in press

Willis LE (2011) The financial education fallacy. Am Econ Rev 101:429–434

Wollner G (2014) Justice in finance: the normative case for an international financial transaction tax. J Pol Phil 22:458–485

Yinger J (1998) Evidence on discrimination in consumer markets. J Econ Perspect 12:23–40