

From Falsehood to Truth, and From Truth to Error

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How Stereotypes Deceive Us

BY KATHERINE PUDDIFOOT.

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1. Introduction

‘All models are wrong’, the statistician George Box once said, ‘but some are useful anyway.’¹ In much the same vein, many *stereotypes* are wrong, but some are epistemically beneficial anyway. So Kathy Puddifoot argues in *How Stereotypes Deceive Us* (Puddifoot 2021), making a compelling and enlightening case for a striking pair of claims: (i) false stereotypes sometimes steer us to the truth, while (ii) true stereotypes often lead us into error. More specifically, Puddifoot argues that, in an important range of cases, individuals who endorse a false stereotype, or remain ignorant of the relevant truth about the stereotype, are in an epistemically better position overall than if they had known the truth. Conversely, individual acts of believing true stereotypes can go epistemically awry: ‘Stereotypes can deceive us even when they reflect aspects of social reality’ (Puddifoot 2021: 190).

This is a wonderful book, a seamless integration of epistemology with ethics, of philosophy with social science and of ‘mainstream’ or ‘Western analytic’ approaches with marginalized and underappreciated contributions from critical social traditions, especially black feminism. The integrations are so seamless, in fact, as to give the reader the impression that Puddifoot is simply picking up conversations already underway. Instead, she has done a tremendous service in bringing representatives from wide-ranging, often-siloed disciplines into dialogue. Another virtue of Puddifoot’s book is how thoroughly it maps out the actual and possible views and logical spaces revolving around each topic she addresses. *How Stereotypes Deceive Us* could therefore be used to introduce budding epistemologists to the field, as it offers clear and careful explanations of leading approaches to a range of topics, including virtue epistemology, theory of mind and more.

The book also boasts an impressive, cumulative structure. It begins with a focused, applied analysis of the nature and epistemic dynamics of stereotyping, but gradually builds and expands its scope – culminating with a general and novel theory of epistemic evaluation, entitled *evaluative dispositionalism*.

1 For a selective historical discussion of the aphorism, its precursors and subsequent commentary, see [Wikipedia 2022a](#).

This cumulative structure enables Puddifoot to introduce examples early on and circle back to them later, enriching and refining the earlier cases in light of subsequent philosophical developments. There is, as a result, a satisfying payoff for the reader who works carefully from beginning to end.

Along the way, Puddifoot engages underexplored areas at the intersection of bioethics, social science and epistemology. Specifically, two middle chapters (5 and 6) examine the roles that stereotypes play in distorting patient-doctor interactions and the dilemmas that people with mental health disorders face when deciding whether to disclose their conditions. The book could well serve an epistemology instructor looking to illustrate how abstract debates about theories of knowledge can be applied to matters of great social significance.

In what follows, I summarize a few key aspects of Puddifoot's project and raise further questions. The first question, of a more semantic or metaphysical bent, regards how we should define stereotypes. Subsequent questions are more epistemological and empirical, regarding when a stereotype counts as 'reflecting reality', and whether Puddifoot's claims about the epistemic standing of *stereotypes* might be better cast as having to do with the epistemic standing of *stereotypers*. Are her core contributions about how to evaluate *beliefs* or *believers*?

2. Defining stereotypes

For Puddifoot, a stereotype is 'a social attitude that associates members of some social group more strongly than others with certain trait(s)' (Puddifoot 2021: 3). This is an admirably capacious definition, allowing for a wide range of psychological kinds to count as stereotypes, including generic beliefs, statistical estimates and webs of semantic associations. As Puddifoot explains (chapter 2), this definition is broad enough to incorporate both *normative* and *non-normative* (neutral) accounts of stereotypes. Normative views take for granted that stereotypes are somehow ethically or epistemically bad. According to *Merriam-Webster*, 'Stereotype is most frequently now employed to refer to an often unfair and untrue belief that many people have about all people or things with a particular characteristic' (n.d.). Thus the most common invocations of stereotypes are thick and evaluative: there's something *wrong* with them. The ways in which stereotypes can go wrong have been a subject of lively philosophical investigation over recent decades.

But many social scientists and philosophers opt for a non-normative interpretation. Non-normative views take the evaluative connotations of the term to be misleading, and instead treat social stereotypes on a par with any other belief, generalization or association individuals might have about groups. Wikipedia, for example, opens with the more neutral usage before nodding to a negatively valenced normative view:

In social psychology, a **stereotype** is a generalized belief about a particular category of people. It is an expectation that people might have about every person of a particular group. The type of expectation can vary; it can be, for example, an expectation about the group's personality, preferences, appearance or ability. Stereotypes are sometimes overgeneralized, inaccurate, and resistant to new information, but can sometimes be accurate. (2022b)

In the face of all this terminological confusion and polysemy, Valian (1998; see also Stewart and Valian 2018), following Fiske and Taylor (1991), urges that we drop the freighted term 'stereotype' for the more neutral term 'schema', while Antony (1993) and Beeghly (2015) have argued that we ought to use 'stereotype' in the more neutral and capacious sense. Puddifoot follows the latter's lead here.

But should Puddifoot's definition be even *more* capacious? Bracketing the normative question, there are two notable differences between Puddifoot's definition and what you'll typically find in dictionaries and psychology textbooks. First, Puddifoot's stereotypes intrinsically involve *intergroup comparisons*, describing how a given trait is distributed across (or cognitively associated with) at least two groups. Thus 'White boys can't play funky music' would not just as such be a stereotype, but 'White boys play funky music worse than everyone else' would. Second, for Puddifoot, the comparison must be such that one group is *more* associated with the trait than others groups are. This means that 'White and black people lay down the boogie equally well' would not be a stereotype, because it associates the two groups equally with the laying down of boogie.

I agree with Puddifoot that most stereotypes of interest to us will have these contrastive dimensions (see also Medina 2013: ch. 2), but I see neither the need nor the payoff of building intergroup comparisons into the definition. I'm even less convinced that stereotypes necessarily involve *asymmetric* attributions or associations between comparison groups. Take, for example, the following claim from William Pettersen's notorious 1966 article, 'Success Story, Japanese-American Style', a foundational text in fostering the Model Minority Myth about Asian Americans:

Like the Negroes, the Japanese have been the object of color prejudice. Like the Jews, they have been feared and hated as hyperefficient competitors. (Pettersen 1966)

Here Pettersen is describing stereotypes about Japanese Americans in ways that put them on a par with stereotypes about other groups. Are they any the less stereotypes for that? Now, one thing that Puddifoot could say is that, even here, there are *implicit contrasts* with *other* unmentioned groups, that is, white Christians. I think that's probably right in this case, but I'm not sure that these implicit contrasts are (necessarily) built into our stereotypes at

the level of cognitive representations and processes. This seems a matter for empirical research in social cognition and linguistics to decide, rather than something to stipulate. And I'm not sure this response will work in all cases.

The following, for example, strikes me as an infelicitous result of Puddifoot's insistence on asymmetric distribution. Suppose Person A claims that Muslims are more likely than Christians to commit terrorist acts, but Person B disagrees, asserting that Christians are more likely than Muslims to commit terrorist acts. Now Person C weighs in, asserting that Muslims and Christians engage in terrorism at equal rates, and finally Person D confesses total ignorance about the religious terrorism base rates yet insists that any existing differences are overwhelmingly due to evolving sociopolitical and structural factors rather than to features intrinsic to the religions or their adherents. By Puddifoot's lights, *and regardless whose views among the four are best grounded in the evidence and closest to the truth*, Persons A and B are stereotyping while C and D are not. This result, that only the uneven-distribution views being batted around in this exchange count as stereotypes, seems odd.

That said, I doubt much is at stake in adopting Puddifoot's very thin definition vs something even thinner like the Wikipedia definition above: any associative or predicative link between a group and a trait (see also [Beeghly 2015](#)). The core of Puddifoot's arguments can be straightforwardly rephrased in line with different definitions. Indeed, a strength of Puddifoot's analysis is that she makes clear how to translate her view across different definitions. While endorsing a non-normative view, Puddifoot points out that the book's central arguments could be rephrased in normative terms. For example, she cites [Blum \(2004\)](#) for the argument that stereotypes are necessarily bad, but even Blum acknowledges that there are some acceptable social generalizations; for him, the OK generalizations just don't count as stereotypes ([Puddifoot 2021](#): 15–16). If we follow Blum and reserve the label 'stereotypes' for the bad cases (leaving the ethical or epistemic nature of the badness up for further investigation and debate), then the questions would not be, for example, when stereotypes are false or unjustified, but rather when social generalizations are problematic enough to count as stereotypes.

3. *Reflecting reality*

With stereotypes thus defined, it's possible for them to be true, false or somewhere in between. It is often argued, or observed, that 'many stereotypes contain a kernel of truth'.² What people mean by 'kernel of truth' presumably varies. One application of this idea would be to cases where there are average differences between social groups, but people exaggerate, misunderstand or misuse them. Puddifoot circles back frequently to the fact that rates of drug

2 Searching 'stereotype' with 'kernel of truth' returns over 200,000 hits on Google, including social psychology articles dating back at least to [Prothro and Melikian 1955](#).

use and drug *crime* barely differ between white and black Americans, but that drug *arrests* are much more common for black Americans (2021: 41). The belief that ‘black people use and sell drugs more than white people’ would be a false stereotype, but it could be based on real evidence and the true stereotype that ‘black people are arrested for drug crime more than white people’. In making such inferences, individuals may neglect the role of antiblack oppression in explaining arrest rate disparities.

People can also *exaggerate* intergroup differences and *understate* intragroup differences. Someone might correctly think that heart disease is more common among men than women, but mistakenly think that the intergroup difference is larger and more practically significant than it really is. Knowledge of this true stereotype can lead laypeople and medical professionals alike to discount or misunderstand the evidence that a specific woman has heart disease, and so fail to seek treatment, run the proper tests and land on the right diagnosis. In fact, in the UK, ‘women are 50% more likely than men to be given a wrong diagnosis after a heart attack’ (Associated Press 2016, Samuel 2019). For these and other reasons, heart disease seems to be more deadly for women, making it the leading cause of death of both women and men in the USA (CDC 2022a, 2022b). Thus the stereotype that heart disease is more common among men could be said to ‘reflect reality’, but it may create more epistemic trouble than it’s worth, leading doctors and laypeople to arrive at fewer truths and more falsehoods (e.g. misdiagnoses) overall than if they had been oblivious of the gender-based disparities in heart disease.

One worry I have here is whether Puddifoot uses the category of ‘reflecting reality’ a bit too liberally. Let’s say that only 10% of members of Group X and 9% of Group Y have the trait of open-mindedness. Now imagine four people who don’t know these exact distributions (most people are stunningly and systematically ignorant about demographics and trait distributions among populations; see e.g. Landy et al. 2018) and instead harbor a variety of different, perhaps more coarse-grained beliefs.

Here are two examples where it strikes me as appropriate, for most intents and purposes, to say that their stereotypes ‘reflect reality’:

- Person E believes that Group X and Group Y are similarly unlikely to be open-minded.
- Person F believes that only about 1 out of 10 members of both Groups X and Y is likely to be open-minded.

By Puddifoot’s lights, however, the following two examples would also count as reality-reflecting stereotypes, even if they embodied the sum total of what these individuals believed about open-mindedness in these groups:

- Person G believes that Group Y is demonstrably and statistically significantly less likely to be open-minded than Group X.

- Person H associates Group X much more strongly (i.e. quickly and accurately) than Group Y with open-mindedness on an Implicit Association Test.

Strictly speaking, Person G's belief is correct, and Person H's implicit associations in some sense track a real feature of the social world, but in many contexts it would seem misleading to describe either's cognitive states as reflecting reality – especially if, say, G's belief reflects *all they know* about rates of open-mindedness in the two groups.

If cases like Persons G and H were our primary examples of reality-reflecting stereotypes, then it would not be terribly surprising that reality-reflecting stereotypes can lead us astray. Although Puddifoot carefully distinguishes different senses in which stereotypes can 'reflect reality', she generally treats reality reflection in binary terms: a stereotype either reflects reality or it doesn't. But I suspect there's often room to say that some stereotypes don't reflect reality *well enough*, perhaps by being partial or misleading, such that we can categorize these stereotypes as epistemically subpar just as such, and not simply by virtue of leading our further inferences astray. Indeed, to the extent that Person G's further inferences about Xs and Ys and open-mindedness go awry, *what explains* their going awry could very well be that G's beliefs don't reflect reality well enough.

Then again, I wonder whether the decision to say that a given belief does or does not 'reflect reality' is more of a pragmatic, context-sensitive question than a precise epistemic fact about the relation between the believer's mind and the world. Note, for example, that while rates of drug use and crime among white and black people are extremely *similar*, they are not – pretty much *could not be* – *literally* identical; so would the person who believes the rates are different be reflecting reality better than the one who believes they are more or less the same? I'm not sure questions like this have general determinate answers.

More apt for Puddifoot's purposes, there may be other cases and ways in which what strike us as *perfectly accurate* stereotypes wreak havoc in our minds and lead us into an array of epistemic errors. I suspect these cases, which I'll discuss further in the next section, should be kept conceptually distinct from those where there's a strong temptation to think that the reason an ostensibly accurate stereotype makes the person epistemically worse off overall is that the stereotype is *not accurate enough*.

4. *The multifactorial view of stereotyping and evaluative dispositionalism*

Puddifoot provides an impressive catalogue of the multifarious ways that stereotypes can steer us wrong in chapter 3, which sets up her broader epistemological theory in chapters 7 and 8. This catalog brings into sharp relief one of Puddifoot's key criticisms of prevailing approaches to the epistem-

ology of stereotypes – and, it will eventually turn out, of prevailing epistemic approaches to pretty much *all* beliefs and world-to-mind representational kinds: the narrowness of their theoretical focus. Existing approaches focus either on the factors ‘upstream’ of our beliefs, namely, the evidence or processes that justify or cause our beliefs, or on ‘static’ factors about how one belief relates to the others, such as whether a given belief rationally coheres with our other mental states.

Accordingly, one of Puddifoot’s key insights is that – in addition to, rather than in lieu of, attending to these upstream and static considerations – epistemic evaluation must also factor in the downstream or forward-looking effects of our beliefs. Epistemic evaluation of the stereotype that ‘white boys play funky music worse than everyone else’ must not only consider the available evidence one has for the belief, and how well that belief coheres with others, but also whether this particular belief makes a person *more or less* likely to form *further* true justified beliefs and avoid false unjustified ones.

In insisting on the importance of downstream considerations, Puddifoot’s ‘multifactorial’ view highlights numerous factors that bear on the epistemic evaluation of stereotypes:

Does the application of the stereotype lead information about the specific case to be distorted or ignored? For instance does the application of the stereotype lead to:

- distorted remembering,
- the misinterpretation of ambiguous evidence,
- false assumptions about similarities/dissimilarities among groups and group members,
- aspects of the social identity of the person who is stereotyped being missed[?] (Puddifoot 2021: 56)

Puddifoot adds to this list various epistemic injustices, such as testimonial injustice (Fricker 2007), when a stereotype leads someone to discount a speaker’s credibility, or testimonial smothering (Dotson 2011), when a person holds back (or smothers) their testimony to avoid misinterpretation. Puddifoot ‘thus presents a principled way to identify whether, for any act of stereotyping, the application of the stereotype increases the chance of an accurate judgement or misperception’ (Puddifoot 2021: 56).

It bears emphasizing how Puddifoot’s analysis departs from recent debates about the downstream effects of our stereotypes, which typically focus on *ethical* rather than *epistemic* downstream effects. Since Gendler 2011, philosophers have debated whether we face a dilemma between ethics and epistemology, whereby learning true facts about social reality might lead us to behave in unethical ways. For example, does widespread awareness of the true stereotype that black people are more likely to be arrested for drug crime itself contribute to the ethical mistreatment of black people? Debates about such ethical-epistemic dilemmas (and related questions about the potential

encroachment of moral considerations into epistemology) also involve attention to both upstream and downstream factors. In these debates, however, the upstream factors are epistemic (are our beliefs true, justified, caused by the right processes etc.?) and the downstream factors are ethical (do our beliefs lead us to treat people unethically?). Puddifoot, however, emphasizes that our stereotypes don't just have downstream effects on how we behave toward others, but also on the beliefs we form. So a full *epistemic* accounting of stereotypes must consider downstream factors as well, giving rise to a dilemma entirely within the epistemic domain:

The possession of a social attitude that reflects aspects of social reality can bring significant epistemic costs. Correspondingly, the possession of a social attitude that fails to reflect reality can bring significant epistemic benefits, facilitating the achievement of various goals relating to the acquisition of epistemic goods like true belief, knowledge, and understanding. (Puddifoot 2021: 58–59)

While Puddifoot's initial focus is on stereotyping, she ultimately makes a persuasive case that a wide range of upstream, static and downstream factors are relevant to epistemic evaluation more generally. This represents an ingenious shift from what we might call a *closeup snapshot* epistemology, which zooms in on one concrete particular instance of *S*-believing-that-*p* and asks how well that specific belief comports with reality or coheres with the available evidence. Puddifoot steps back to offer a *wide-lens panoramic viewing* of the dynamics of our temporally extended epistemic agency. We must look to the epistemic effects of our beliefs as much as to their causes. Puddifoot therefore introduces *evaluative dispositionalism* to capture all the epistemic pros and cons associated with a given act of believing: 'A complete epistemic evaluation of an act of believing should focus on both (i) the dispositions that are displayed in believing, and (ii) the dispositions that are possessed due to believing' (Puddifoot 2021: 164).

I understand evaluative dispositionalism to represent a novel virtue theory of epistemic evaluation, requiring us to consider the whole set of upstream factors and downstream dispositions associated with a given belief. However, this reading of Puddifoot's view departs somewhat from her own, as she distinguishes her account from virtue theory. She claims that virtue epistemologies, much like non-virtue epistemologies, have been too narrowly focused on upstream factors – the virtues, vices, habits and traits (such as open-mindedness, curiosity, laziness etc.) that lead us to *acquire* or maintain beliefs rather than the ways beliefs affect other cognitions. I think she's right about the virtue-theoretic tradition, but Puddifoot's response, it seems to me, is to make a substantive revision *to* this tradition rather than to bracket the project of characterizing epistemic virtue and vice altogether.

One potential benefit of Puddifoot's emphasis on downstream factors, which she does not explore, is the contact it makes with longstanding

debates about the epistemic evaluation of scientific theories and models. In conversation, Katie Gasdaglis pointed out to me that Puddifoot's insistence on the importance of downstream factors resonates with the claim that evaluations of scientific theories are not restricted to asking how well theories cohere with data (especially given problems of underdetermination, wherein indefinitely many theories cohere with the evidence equally well). Scientists and philosophers of science alike also stress the importance of how well theories *generate* further discovery, by pointing researchers to better (or worse) further hypotheses to test and so on. Patently false theories and oversimplified models of empirical phenomena can nevertheless promote knowledge – just as George Box observed. One among many comparisons we might explore in this vein is between Puddifoot's account of downstream epistemic effects and Lakatos's distinction between 'progressive' and 'degenerative' research programs. A principal virtue of a progressive research program, on Lakatos's view, is that its 'theory leads to the discovery of hitherto unknown novel facts', whereas degenerative programs make false predictions – or fail to make novel predictions at all (Lakatos 1980: 5). I invite Puddifoot to explore these connections in future work.

5. *Beliefs vs believers*

As much of a fan as I am of Puddifoot's shift toward situating a given belief in our wider epistemic agency, I have questions. One response might be to say that, rather than competing with existing theories of epistemic evaluation, the old and the new can coexist. Existing theories might be better thought of as guiding epistemic evaluations of specific cognitive states (or of token instances of 'acts of believing'), which can focus properly and exclusively on upstream and static factors; for example, is this belief true, justified and formed for the right reasons? By contrast, Puddifoot's theory might be better cast as an epistemic evaluation of *the whole person*, or the person's broader set of upstream and downstream states and dispositions.

When a true stereotype leads us to misperceive an individual, where should we direct our epistemic criticism? Is the *stereotyping belief* itself always at fault, or should the blame sometimes be directed to *another* belief or disposition in the person's mind, or perhaps to the person themselves for *misusing* their accurate information? Consider a contrast Puddifoot draws between two cases to argue that one and the same stereotype ought to be epistemically evaluated differently in different contexts:

Nora is a female scientist who has 30 years of experience. She is a feminist and as a result pays close attention to the representation of women in the sciences. She notices over time that a gender gap in the sciences never goes away: there are consistently more men. ... Nora therefore ... har-

bours and endorses the social attitude *men are more likely than women to have scientific expertise*. However, the stereotype does not distort Nora's judgements of individual women scientists and their levels of expertise. ... Instead, Nora judges women scientists on the basis of their skills, expertise, and potential that they display in their work, with the stereotype only operating to allow her to understand the challenges that they are likely to have faced as a minority in the profession.

Ned is also a scientist with 30 years of experience. He is not a feminist. He has also registered that women are underrepresented in the sciences ... and ... harbours the same stereotype as Nora. However, the stereotype that he harbours permeates his thought, influencing all of the judgments that he makes about individual women scientists ... such as misremembering the attributes of his women colleagues, misinterpreting ambiguous behaviors as indicating a lack of expertise. (Puddifoot 2021: 181)

Puddifoot takes this contrast to exemplify how 'people can hold the same belief but their acts of belief can deserve different levels of criticism' (Puddifoot 2021: 180).

But, we can ask, in Ned's case, is it the stereotype's 'fault' that he makes these errors? Puddifoot sometimes claims that it is the '*belief* that is epistemically poor', because it will 'dispose [Ned] to respond poorly to the evidence' (Puddifoot 2021: 182, emphasis added). On a narrow counterfactual analysis, we can agree: had Ned lacked that stereotype, he wouldn't have made the relevant epistemic errors. However, in this nearby possible world where he simply lacks the stereotype, he'll still end up making *other* epistemic errors. Crucially, as Puddifoot acknowledges, he would not just be missing out on a social regularity; he would also not be alive to the need for social reforms. Just a few pages earlier (Puddifoot 2021: 176–77), Puddifoot describes a different 'somewhat oblivious' scientist, Roger, who fails to observe the underrepresentation of women in science at all and so fails to commit the epistemic errors that Ned does – but as a result also fails to form some of the important true beliefs *that Nora does*, for example, 'about whether there is a need to implement measures to increase diversity in his workplace'.

On a broader counterfactual analysis, then, we might ask whether the problem is that Ned's particular belief (or, as Puddifoot often prefers to say, Ned's particular 'act of believing') has these specific effects. Might we seek the epistemic culprit elsewhere? Should our epistemic criticism be directed toward some other aspect of his mind, which then interacts with his stereotypes to drive various additional negative epistemic outcomes? The answer is contained in Puddifoot's own descriptions of the case: the real epistemic flaw is not that Ned harbors an 'epistemically poor' stereotype but that *he is not a feminist*. His belief about gender disparities is in good epistemic standing but the rest of his mind is not. It's not explicit in Puddifoot's description whether Ned is merely indifferent, ignorant or complicit in sex-

ism, or if he's perhaps a full-blown sexist, but regardless, it seems to me that it's not the presence of his stereotype but the absence of his feminism that 'distorts' Ned's judgments and disposes him to respond poorly to the evidence. Given that he is not a feminist, and that he fails to form true beliefs about the need for reform, there must be some other flawed beliefs or epistemic vices in the mix. Perhaps he overemphasizes the role that 'internal' factors, such as genes, intelligence or innate preferences, play in explaining the gender disparities. Perhaps he underemphasizes the role of mass media, misogyny and various other 'external' structural forces. Perhaps he is motivated to see the world as fair and so he lazily or incuriously fails to seek out the gender disparities' underlying causes or remedies. Whatever it might be, Nora's got *something* going on in her cognitive economy that Ned lacks, which enables her to make better epistemic use of the stereotype than he does. After all, per stipulation, Nora's got exactly 'the same stereotype ... formed on the basis of the same evidence' (Puddifoot 2021: 181–82), but she employs the truth virtuously while Ned abuses it viciously. At the end of the day, it's not the stereotype's fault. It's Ned's. In keeping with this reading, Puddifoot herself sometimes frames her claims as regarding 'people' and their 'characters' (182).

So do these downstream factors speak to the epistemic evaluation of *the stereotype itself* – as Puddifoot more often claims – or rather to the epistemic evaluation of *what we do* with the stereotype (cf. Madva 2016), and thus to evaluations of *stereotypers on the whole*? Both types of epistemic evaluation are important, it seems to me, and in different contexts we might be more concerned with one than the other. In this way, the questions I've raised here serve to bear out Puddifoot's fundamental insight, which is that our epistemic evaluations ought to incorporate much of what comes downstream from our beliefs and stereotypes.

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References

- Antony, L. 1993. Quine as feminist: the radical import of naturalized epistemology. In *A Mind of One's Own: Feminist Essays on Reason and Objectivity*, eds. L. Antony and C. Witt, 185–226. Boulder: Westview Press.
- Associated Press. 2016. Women 50% more likely to be misdiagnosed after heart attack – study. *The Guardian* <<https://www.theguardian.com/society/2016/aug/30/women-50-more-likely-to-be-misdiagnosed-after-heart-attack-study>>.
- Beeghly, E. 2015. What is a stereotype? What is stereotyping? *Hypatia* 30: 675–91.
- Blum, L. 2004. Stereotypes and stereotyping: a moral analysis. *Philosophical Papers* 33: 251–89.

- CDC. 2022a. Men and Heart Disease. *Centers for Disease Control and Prevention*. <<https://www.cdc.gov/heartdisease/men.htm>>, last accessed 12 July 2022.
- CDC. 2022b. Women and Heart Disease. *Centers for Disease Control and Prevention*. <<https://www.cdc.gov/heartdisease/women.htm>>, last accessed 12 July 2022.
- Dotson, K. 2011. Tracking epistemic violence, tracking practices of silencing. *Hypatia* 26: 236–57.
- Fiske, S.T. and S.E. Taylor. 1991. *Social Cognition*, International Ed edn. New York: McGraw-Hill Education.
- Fricker, M. 2007. *Epistemic Injustice: Power and the Ethics of Knowing*. Oxford; New York: Oxford University Press.
- Gendler, T.S. 2011. On the epistemic costs of implicit bias. *Philosophical Studies* 156: 33–63.
- Lakatos, I. 1980. *The Methodology of Scientific Research Programmes: Volume 1: Philosophical Papers*, eds. J. Worrall and G. Currie. Cambridge, UK: Cambridge University Press.
- Landy, D., B. Guay and T. Marghetis. 2018. Bias and ignorance in demographic perception. *Psychonomic Bulletin & Review* 25: 1606–18.
- Madva, A. 2016. Virtue, social knowledge, and implicit bias. In *Implicit Bias and Philosophy: Metaphysics and Epistemology*, vol. 1, eds. M. Brownstein and J. Saul, 191–215. Oxford: Oxford University Press.
- Medina, J. 2013. *The Epistemology of Resistance: Gender and Racial Oppression, Epistemic Injustice, and Resistant Imaginations*. *Studies in Feminist Philosophy*. New York, NY: Oxford University Press.
- Merriam-Webster. n.d. Stereotype. <<https://www.merriam-webster.com/dictionary/stereotype>>, last accessed 19 July 2022.
- Pettersen, W. 1966. Success story, Japanese-American style. *The New York Times*. <<https://www.nytimes.com/1966/01/09/archives/success-story-japaneseamerican-style-success-story-japaneseamerican.html>>, last accessed [day month year].
- Prothro, E.T. and L.H. Melikian. 1955. Studies in stereotypes: V. Familiarity and the kernel of truth hypothesis. *The Journal of Social Psychology* 41: 3–10.
- Puddifoot, K. 2021. *How Stereotypes Deceive Us*. New York: Oxford University Press.
- Samuel, S. 2019. Women suffer needless pain because almost everything is designed for men. *Vox*. <<https://www.vox.com/future-perfect/2019/4/17/18308466/invisible-women-pain-gender-data-gap-caroline-criado-perez>>, last accessed [day month year].
- Stewart, A.J. and V. Valian. 2018. *An Inclusive Academy: Achieving Diversity and Excellence*. Cambridge, MA: The MIT Press.
- Valian, V. 1998. *Why So Slow? The Advancement of Women*. Cambridge, MA: MIT Press.
- Wikipedia. 2022a. All Models Are Wrong. <https://en.wikipedia.org/w/index.php?title=All_models_are_wrong&oldid=1105237197>, last modified 19 August 2022.
- Wikipedia 2022b. Stereotype. <<https://en.wikipedia.org/w/index.php?title=Stereotype&oldid=1105237197>>, last modified 19 August 2022.