



Socially disruptive technologies and epistemic injustice

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Abstract

Recent scholarship on technology-induced ‘conceptual disruption’ has spotlighted the notion of a conceptual gap. Conceptual gaps have also been discussed in scholarship on epistemic injustice, yet up until now these bodies of work have remained disconnected. This article shows that ‘gaps’ of interest to both bodies of literature are closely related, and argues that a joint examination of conceptual disruption and epistemic injustice is fruitful for both fields. I argue that hermeneutical marginalization—a skewed division of hermeneutical resources, which serves to diminish the experiences of marginalized folk—does not only transpire because of conceptual gaps, but also because of two other kinds of conceptual disruption: conceptual overlaps and conceptual misalignments. Hence, there are multiple kinds of conceptual disruption that can be usefully studied through the normative lens of epistemic injustice. Technology can play different roles vis-a-vis epistemic injustices, both as a causal trigger of conceptual disruption, but also as a mediator of hermeneutical resources. Its role is normatively significant, in particular because socially disruptive technologies can have different epistemic implications for different groups: they may amplify the epistemic resources of some groups, while diminishing those of others.

Keywords Epistemic injustice · Hermeneutical marginalization · Conceptual gap · Conceptual overlap · Conceptual misalignment · Socially disruptive technologies

Introduction

New and emerging technologies frequently challenge human conceptual schemes—i.e. the shared set of core concepts that underpin human language and thought (Van de Poel et al., 2023). These conceptual schemes, in turn, may require adaptation in response to technological pressures (Hopster & Löhr, 2023), a process that can be understood as a type of conceptual engineering (Burgess et al., 2020).

While philosophical interest in conceptual disruption and conceptual engineering has been growing in recent years (e.g. Koch et al., 2023; Löhr, 2023), research on these topics—especially on conceptual disruption—is still in its infancy. In this article I will argue that a fruitful way forward is to connect analyses of conceptual disruption with scholarship on epistemic injustice. This connection is already implicit in some convergent concepts that have been articulated in the respective fields. Making the connection explicit will help to develop the normative dimension of

scholarship on conceptual disruption, which has thus far remained largely unexplored. For scholarship on epistemic injustice, in turn, explicating the link with conceptual engineering and investigating the role of technology similarly moves the field to largely unexplored territory.¹

To make a preliminary case for the fruitfulness of this exchange, let us start with the notion of a ‘conceptual gap’. Conceptual gaps are one of the three manifestations of tech-induced conceptual disruptions that Hopster and Löhr (2023) have identified, the other two being ‘conceptual overlaps’, and ‘conceptual misalignments’. A historical example of a tech-induced conceptual gap is the introduction of the mechanical ventilator, or heart–lung machine, and the subsequent moral and conceptual inquiry that this new technology instigated (Baker, 2013; Nickel et al., 2022). As Baker recounts:

“[T]he ventilator kept some patient’s hearts and lungs functioning even though they appeared to be in an irreversibly comatose state, with little or no brain func-

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¹ Other recent discussions of hermeneutical injustice in the context technology include Reynolds’ (2020) discussion of biomedical technologies and Pozzi’s (2023) account of machine learning in health-care.

tion. This physiological phenomenon proved morally and ethically disruptive because medical ethics and morality mandated, to quote the New York [physician's] oath, that physicians 'do everything in [their] power for the benefit of the sick committed to [their] charge,' and this mandate was understood as preserving life. (...) [N]either physicians nor families now knew how to treat patients in this ambiguous state." (Baker, 2013, p. 59)

The conceptual uncertainty associated with the new state of these patients—where they alive, or dead?—went hand in hand with uncertainty about the applicable norms of moral treatment. For instance, could the patients' organs be used for transplantation, or not? Such uncertainty was resolved during a subsequent process of joint moral inquiry, which yielded a novel concept to fill the conceptual gap: BRAIN DEATH. This concept came along with a new set of moral norms, which differed both from the norms of treatment for people who were 'dead', as well as the treatment of those who were 'alive'. Hence, the conceptual gap was overcome by an adaptation of a shared conceptual scheme and served to reinstate action-guiding rules and norms for both doctors and families (Hopster & Löhr, 2023).

In coining the notion of a conceptual gap, Hopster and Löhr took inspiration from legal scholarship on legal gaps and overlaps (Crooft & Ard, 2021). Yet philosophical study on the topic of epistemic injustice has independently yielded the same notion of a conceptual gap. In her seminal work on the topic, Fricker (2007) argues that one type of epistemic injustice stems from a gap in collective hermeneutical resources—i.e., shared tools of social interpretation, such as concepts (e.g., BRAIN DEATH) and the corresponding terms ('brain death'). In subsequent work, Fricker (2016) has occasionally used the notion of a 'conceptual gap' to refer to this phenomenon, and some scholars have picked up on this usage (e.g. Fürst, 2023). Drawing on Brownmiller (1990), Fricker recounts the following paradigmatic example of a conceptual gap:

"a woman in late-sixties North America, Carmita Wood, was being sexually harassed at work but extant hermeneutical resources did not enable her to experience this lucidly for what it was, so that while she experienced it as upsetting, intimidating, demeaning, confusing... somehow she was also aware that these forms of understanding did not capture it. As recounted by Brownmiller, Carmita Wood remained confused about what it was she was experiencing, because there was an objective lack of available concepts with which to make proper sense of it. Her achievement was to find a community of women who together created a safe discursive space in which to explore their experiences and find a way of interpreting them that rendered them

more fully intelligible. Through dialogue within the group they hit upon a critical composite label, 'sexual harassment', and they overcame their hermeneutical marginalisation in this regard by demanding that the term and the interpretation it expressed become part of the wider shared vocabulary." (Fricker, 2016, p. 165)

The conceptual gap, here, pertains to the absence of an adequate concept which enabled Wood to make sense of her own experience, and to publicly voice her rejection of the practice that gave rise to this experience. On Fricker's account, the absence of an adequate conceptual framework afforded to women who are sexually intimidated and oppressed is an example of hermeneutical marginalization: a deficit of hermeneutical resources available to the oppressed, which makes it more difficult to resist these practices and to gain public recognition of the harms they suffer. The development and dissemination of the concept SEXUAL HARASSMENT can be seen as an important step towards addressing this epistemic injustice, as it allowed for greater recognition and understanding of the harm caused by sexual harassment. Hence, filling a conceptual gap can be a way of overcoming an epistemic injustice.

That related notions of a conceptual gap are at play in discussions of conceptual disruption and of epistemic injustice has thus far gone unnoticed. In the following sections I will explore how these discussions can be connected, and argue that doing so yields conceptual and theoretical insights, some of which go beyond a shared interest in conceptual gaps. I proceed, in section 2 on "[Conceptual gaps and hermeneutical injustice](#)", by outlining in more detail how conceptual gaps are related to the type of epistemic injustice that Fricker calls 'hermeneutical injustice'. Going beyond conceptual gaps, in section 3 on "[Conceptual misalignment: the case of revenge porn](#)" and in section 4 on "[Conceptual overlap: the case of adultery](#)" I argue that two other types of conceptual disruption—conceptual overlaps and conceptual misalignments—can also give rise to epistemic injustices. In section 5 on "[The roles of technology](#)" I discuss two distinctive roles that technology can play in mediating epistemic injustices. I conclude that the intersection between scholarship on epistemic injustice and conceptual disruption comprises a fruitful area of normative inquiry and that further exchanges are to be encouraged.

Conceptual gaps and hermeneutical injustice

An epistemic injustice is a wrong done to some person, or group, in their capacity as a knower. Following Fricker's (2007) seminal exposition, epistemic injustices come in two main kinds (though see Fricker, 2017 for

qualifications). The first is what she calls *testimonial injustice*. A testimonial injustice occurs when a speaker's testimony is not given appropriate credibility or is dismissed due to prejudice, bias, or lack of knowledge or understanding of the speaker's identity or experiences. This may happen when the speaker belongs to a marginalized or oppressed group, whose voice is not generally or fully recognized in the hegemonic societal discourse. For example, a woman's testimony about a sexual assault may be dismissed or not taken seriously by law enforcement or others in authority due to stereotypes or biases about women's credibility or sexual behavior. Similarly, a person of color's testimony about experiencing racism may be discounted or ignored because of societal prejudices and stereotypes about race. Hence, certain speakers suffer from a credibility deficit, as they belong to socially marginalized groups, whose testimonies are discounted by those holding power, or by socially dominant groups.

The second kind of epistemic injustice is what Fricker calls *hermeneutical injustice*. Hermeneutical injustices refer to situations where individuals are unable to fully understand or articulate their own experiences, due to a lack of available concepts, expressive deficits of their language, or due to hermeneutical shortcomings on part of the hearers, which limit their receptivity for the speakers' plight. If an individual or group lacks adequate concepts to describe its experience, or if speakers and hearers do not have enough shared experiences and hearers are not receptive to the concepts which are being used, there is a gap between the experience and the ability to express it, to make oneself heard and understood. As Fricker (2017, p. 53) notes, hermeneutical injustices are typically caused by an "inequality of hermeneutical opportunity": hermeneutical marginalization puts certain groups at an "unfair disadvantage in comprehending a certain experience, and/or getting others to comprehend this experience." Recall the example of sexual harassment: before the concept SEXUAL HARASSMENT existed, experiences of unwanted sexual attention or coercion were not widely recognized as a distinct form of harm or discrimination, and victims of sexual harassment did not have access to an expressive—and widely recognized—concept that helped them to articulate this harm. Hence, a conceptual gap prevented victims from fully coming to terms with their own experience, and limited society's ability to recognize and address it.

Conceptual gaps, then, are associated with Fricker's second kind of epistemic injustice, i.e., hermeneutical injustice. Are they *necessary* to instigating hermeneutical injustices? While conceptual gaps play an important role in Fricker's exposition, recent scholarship suggests that this may not be the case (Falbo, 2022). Hermeneutical injustices are heterogeneous phenomena, which may be produced by conceptual gaps, but also by other types of hermeneutical marginalization (Medina, 2017). This suggestion fits well—and gets

further support from—an analysis of conceptual disruption, of which the emergence of conceptual gaps is but one manifestation. I will illustrate this in sections 3 and 4.

Neither is it the case that conceptual gaps are *sufficient* for hermeneutical injustices. To qualify as an injustice, a conceptual gap should affect hermeneutical resources in such a way that it prompts an inequality of hermeneutical opportunity, thus putting certain groups at an unfair disadvantage. Yet not all conceptual gaps have such an implication. Consider gaps of scientific knowledge, which have been widely discussed in Kuhn-inspired scholarship on conceptual change (e.g. Thagard, 1990). The phenomenon of black holes was not well known outside of the physics community up until the 1960, when the term 'black hole' was introduced and gained popular traction (the term's precise origins are disputed; see Siegfried, 2013). Hence, at least regarding the public concept of a 'black hole', up until the 1960s there was a conceptual gap in our shared conceptual scheme. But there is no reason to suppose that this conceptual gap constituted an epistemic injustice: the fact that only a small group of physicists was acquainted with the respective phenomenon, did not put uninitiated concept users at a disadvantage that should be regarded as unfair. Hence, it is not always the case that issues of justice hang on a conceptual gap.

Ad interim we may conclude that the relation between epistemic injustices and conceptual gaps is not one of conceptual entailment. The presence of a conceptual gap does not guarantee an epistemic injustice, and the presence of an epistemic injustice does not guarantee a conceptual gap. Furthermore, as the example of sexual harassment suggests, not all conceptual gaps are brought about by new and emerging technologies.

However, having pointed out these disconnects, in the next sections I will go on to argue that tech-induced conceptual disruptions and epistemic injustices are nonetheless frequently entwined. Furthermore, this entwinement is not limited to conceptual gaps. Accordingly, it is useful to approach the topics in tandem, and inquire how our theoretical understanding of conceptual disruption can benefit our grasp of epistemic injustice, and vice versa. Doing so provides a fruitful angle for developing the (conceptual) ethics of socially disruptive technologies.

Conceptual misalignment: the case of revenge porn

As mentioned in section "Introduction", Hopster and Löhr (2023) distinguish between three kinds of conceptual disruption, which are often induced by technologies: technologies may yield conceptual gaps, conceptual overlaps, and conceptual misalignments. Having looked at conceptual gaps in "Conceptual gaps and hermeneutical injustice",

“[Conceptual misalignment: the case of revenge porn](#)” and “[Conceptual overlap: the case of adultery](#)” sections discuss the two other types of conceptual disruption in the context of epistemic injustice. I will argue that both conceptual misalignments and conceptual overlaps, too, can give rise to hermeneutical injustices. Thinking of epistemic injustice in terms of conceptual misalignments and overlaps, I submit, can enrich theoretical accounts of conceptual disruption as well as epistemic injustice.

Start with conceptual misalignments. Situations of conceptual misalignment are situations where a crucial concept or conceptual cluster is not properly aligned with other concepts in a shared conceptual scheme, thereby frustrating important social or moral values. Conceptual misalignments frequently emerge in the wake of technological disruption. *Prima facie*, it might appear as if a concept adequately captures an experience or practice: there is no obvious conceptual gap, no complete lack of hermeneutical resources. But on closer inspection, the concept entrenched in the shared conceptual scheme does not withstand moral scrutiny. In particular, the concept fails to reflect and communicate the experience of marginalized groups, thereby perpetuating an epistemic injustice.

Consider the following example. Since the emergence of camera-integrated smartphones about two decades ago, online communication has been flooded with digital images. With the subsequent rise of online dating-apps over the 2010s, these images have increasingly included sexual contents. One flipside of this development has been the emergence of a new form of image-based sexual abuse, which is at present widely referred to as ‘revenge porn’. This term was allegedly coined by the convicted American internet entrepreneur Hunter Moore, who set up a website in 2010 which allowed users to post sexual photos of others without their consent, accompanied by their personal information (Gallagher, 2019). In subsequent years ‘revenge porn’ has been criminalized in many countries. Hence, the term has become engrained in several legislations and has been taken up in our shared conceptual scheme.

But the term ‘revenge porn’ is morally deficient; the alternative of ‘image-based sexual abuse’ is clearly preferable (McGlynn et al., 2017). The term’s origins are telling: it was the *perpetrator* of image-based sexual abuse, rather than its victims, who coined the term, and this is reflected in its connotations. ‘Revenge’ suggests that the victim has done something wrong, for which retribution is sought. Yet this need not be the case: images may be shared for various reasons, and sometimes the person sharing them is unfamiliar with the victim. ‘Porn’ suggests that the content of the images is pornographic, yet this may not be the perception of the person whose images are being shared without consent. The term ‘revenge porn’ perpetuates victim blaming and enhances a sense of humiliation. Several victims and interest

groups have spoken out against the term, but as of yet, their calls have not yet been widely acknowledged in popular discourse. The perpetuated use of the term ‘revenge porn’ can be regarded as a conceptual misalignment, which gives rise to an epistemic injustice.

Conceptual misalignments have certain features—and give rise to certain worries—that do not surface in the context of conceptual gaps. For instance, conceptual misalignments leave the impression, at least for some groups, that no one suffers from a shortage of hermeneutical resources. After all, it appears that marginalized groups *do* have concepts available to them to articulate their experience. Yet in fact, the available—and socially dominant—concepts are politically or ideologically tainted, and in a way that serves to diminish or downplay the experience of victims, or of marginalized groups.²

How do conceptual misalignments relate to conceptual gaps (“[Conceptual gaps and hermeneutical injustice](#)” section)? And to conceptual overlaps (“[Conceptual overlap: the case of adultery](#)” section)? There are ways of seeing them as closely connected. The fact that the above-mentioned experience can both be described in terms of ‘revenge porn’ and in terms of ‘image-based sexual abuse’, suggests that this is not only a situation of conceptual misalignment, but also a situation of conceptual overlap. Also, the fact that the socially dominant concept is one that serves to marginalize the experience of victims, could be generically explained in terms of a ‘gap’—a failure on part of the victims to make themselves truly heard, a lacuna in the dominant conceptual scheme.

Yet, what is most striking about this example is neither the absence of an adequate concept to capture an experience (conceptual gap), nor the presence of multiple adequate concepts for doing so (conceptual overlap), but rather the social prevalence of a concept that does capture the experience, yet in a way that is morally thwarted. This is the distinctive aspect of conceptual misalignments, and it is what makes such misalignments particularly pernicious. A ‘mere’ gap can easily be overcome: the expressive affordances of our hermeneutical reservoir are incredibly rich, and new concepts are easily devised, at least in principle. But for a

² A different case of conceptual misalignment in the context of technology is described by Reynolds (2020). Reynolds uses the term ‘epistemic capture’ to describe situations where fundamentally ambiguous information is transformed into and treated as definite forms of knowledge. For instance, the epistemic framework of genetic and genomic sequencing is defined by the concept of ‘normality’, which ultimately serve to classify results into one of two domains (normal vs. abnormal), along one of two values (positive or negative). This is, however, a conceptual misalignment: hermeneutically ambiguous resources are mobilized as if they are not ambiguous, and the additional value partitioning—invoking an inappropriately simplistic binary scale of appraisal—masks the complexity of clinical diagnoses.

concept to gain traction in the broader community of concept-users, and to become part and parcel of the dominant conceptual scheme is much more challenging—especially if a rivaling concept is part of the hegemonic discourse.

In closing, it is worth pointing out that the distinction between conceptual gaps and conceptual misalignments is closely related to a distinction that Falbo (2022) has recently introduced in scholarship on epistemic injustice, between negative and positive hermeneutical injustice. Negative hermeneutical injustice results from a shortage of conceptual resources to describe an experience, thereby yielding an unjust epistemic deficit. Positive hermeneutical injustice, by contrast, “results from the overabundance of distorting and oppressive concepts which function to crowd-out, defeat, or pre-empt the application of a more accurate hermeneutical resource.” (ibid., p. 343). A relevant term (such as ‘image-based sexual abuse’) might be part of our conceptual schemes at large, but fail to gain traction in the dominant social contexts, where a different term prevails (‘revenge porn’), thereby limiting its productive power as a hermeneutical resource. Hence, conceptual misalignment can be a source of positive hermeneutical injustice.

Conceptual overlap: the case of adultery

A third type of conceptual disruption is instantiated by conceptual overlaps. Situations of conceptual overlap are situations in which more than one concept in a shared conceptual scheme is appropriate to describe and evaluate novel practices, experiences, and domains of interaction. Given this overlap, there is uncertainty as to which concept is most suitable to invoke. Such uncertainty, in turn, may sometimes be harmful, as Nickel (2020) has argued in the context of conceptual gaps.

Consider an example discussed by Jorem and Löhr (2022), based on the British adaptation of the Swedish TV show *Real Humans*. A married husband, Joe, engages in sexual activity with an attractive humanoid robot. While Joe hides this from his wife, he does so out of embarrassment, and not from a feeling of guilt: Joe thinks of his action as ‘masturbation with a sex toy’, rather than as ‘adultery’. But when his wife, Laura, finds out, she takes a different stance: Joe *did* commit adultery and is blameworthy for doing so.

This can be understood as a case of conceptual overlap. Humanoid sex robots constitute a novel technology, and our norms and concepts around this technology are not yet clearly settled, while the technology itself is still evolving. As a result, there is uncertainty as to which of these two ways of framing the situation, drawing on existing concepts, is more appropriate. Should Joe’s action be regarded as harmless masturbation, or as a case of harmful adultery?

Why think that such uncertainty might give rise to epistemic harms? Arguably situations of moral uncertainty, where the appropriate concepts to describe a situation and the norms associated with them cannot be clearly ascertained, make the agents involved in such situations worse off (Nickel, 2020). Consider Joe and Laura: there is something to be said for either of their interpretations, and thus for regarding Joe either as culpable or excusable. Given the uncertainty of the situation, arguably Joe cannot properly know what his moral obligations are, and Laura cannot properly know whether the blame she ascribes is justified. Nickel (2020, p. 261) suggests that situations like these may constitute “a harm because an individual who does not know her own moral obligations (rights, responsibilities) cannot properly exercise moral agency or act rightly, which is a serious setback to her interests as a moral agent.”

This brings us back to the topic of epistemic injustice. We noted before that Fricker understands hermeneutical injustice in terms of a shortage of epistemic resources, or a conceptual gap. Subsequently, we saw that it is useful to broaden the concept and include cases of positive hermeneutical injustice, produced by conceptual misalignment. Conceptual overlap constitutes a third category, which, too, suggests a shortcoming of appropriate epistemic resources, yet not because of an absence of concepts, but because of uncertainty regarding their application. Such uncertainty is potentially harmful: in the face of new technological practices, whose meaning and interpretation is yet unsettled, it may be unclear which norms to follow, and which of various contending hermeneutical resources available for interpreting the situation should prevail.

The epistemic harm, here, consists of the diminished moral agency of persons, due to circumstances beyond their control. Moral agents find themselves in a vulnerable position, yet through no fault of their own, nor because of any other agent who is obviously blameworthy, but because of the unsettledness of the available conceptual resources.

The roles of technology

Not all conceptual disruptions are triggered by new and emerging technologies. However, technologies frequently do play an important role in conceptual disruption, as suggested by the examples discussed up until now. The present section further clarifies the role of technology in generating conceptual disruption and epistemic injustice. What are some of the distinctive ways in which technologies can be implicated in hermeneutical injustices?

The examples we looked at in the previous sections are digital information and communication technologies which contributed to the emergence of the concept of ‘revenge porn’, and humanoid sex robots which call into question the

established meanings and moral significance of the concepts of ‘adultery’ and ‘masturbation’. In both cases, technology played a substantial causal role in either triggering a conceptual disruption (i.e., a conceptual gap, misalignment, or overlap), or in generating affordances that raised its likelihood.

Yet the role of technology is not limited to that of a causal trigger or contributing cause. Technologies can also serve to sustain and to actively mediate epistemic harms and injustices. Hence, it is useful to distinguish between ‘tech-induced’ and ‘tech-mediated’ epistemic injustices.³ Let us consider two ways in which the latter, mediating role of technology, can manifest itself.

Differential disruption

Socially disruptive technologies give rise to new practices, experiences, and generate new domains of interaction, which may affect human society in unequal ways. A technological disruption may be beneficial for some, but not for others. It can generate vulnerabilities, including vulnerabilities of an epistemic kind, that are specific to certain groups or populations. As Feenberg (2010, p. 11) observes: “Technologies adapted to one world disrupt another world.” *Differential disruption* (Nickel et al., 2022) is one notable aspect of technological change, which can manifest itself, among others, in the generation of conceptual gaps: technological change might put some agents or group at an epistemic advantage, while contributing to the hermeneutical marginalization of others.

One example of a technology, attuned to the aims of some but not of others, are decision-making algorithms, such as risk assessment algorithms. These decision-making algorithms are tailored to the aim of efficient and reliable decision-making. As such, they may be quite beneficial. However, they might have disruptive implications with regard to other aims, and for specific groups. Even if unintended, these implications can be highly significant from the point of view of justice.

Consider the infamous COMPAS (Correctional Offender Management Profiling for Alternative Sanctions) risk algorithm, which has been used in some jurisdictions of the United States to decide about eligibility for parole (for discussion, see e.g. Mayson, 2019). The verdict reached by this data-driven technology involves several layers of epistemic opacity, and it has appeared that challenging the system is extremely difficult. This imposes severe epistemic limitations on those who are held detained, and may result in procedures that are unfair. A case in point concerns detainee Jeff Rodriguez, who was a model of rehabilitation, but was

denied his parole, for reasons that could not be clarified and that turned out to be almost impossible to contest, given the opacity of COMPAS. Symons and Alvarado (2022) describe this as an instance of hermeneutical injustice: the detainee was not afforded the epistemic resources that enabled him to understand what had been done to him, and to challenge the decision to which he was subjected. There was a shortage of hermeneutical resources available to the convicted, greatly diminishing his epistemic status.

In this case, a hermeneutical injustice was not only instigated by a new technology, but also actively mediated by a socio-technical system. That is to say, the technology is deployed in the context of a socio-technical system, which, in principle, could be modified in accordance with aims of justice. It is not inevitable that decision-making algorithms shield off the decision-making process from human comprehension, thereby precluding understandability. The technology, and the socio-technical system in which it is employed, can be altered in order to restore epistemic justice.

Conceptual propagation

The mediating role of technology vis-a-vis epistemic injustice has to do with an availability of hermeneutical resources. Technologies can shield such resources, as in the case of the COMPAS algorithm. But technologies can also make these resources more widely available and aid their dissemination. A seemingly straightforward example are social media, which have been instrumental to various rallies for social justice, and which have been used for the propagation of hermeneutical resources. These information and communication technologies, too, play an important in mediating epistemic injustices. They do so as instruments of empowerment, but also as tools of oppression.

To better understand the role of social media in mediating hermeneutical injustices, consider how conceptual gaps can be overcome. As Fürst (2023) points out, this involves two steps. The first is to articulate a phenomenal concept, which helps to understand the target experience. The second step is to gain traction in the broader community by making this into a public concept that can be successfully communicated to others, including socially dominant groups. Regarding the first step, hermeneutical resources typically abound: experiences can be described, analogies can be found, and existing concepts can be paired. Victims suffering an epistemic injustice due to a conceptual gap are typically not completely lost for words. The real challenge, rather, pertains to the second step: to articulate a concept that will be shared and taken up in the broader community of concept users, thereby becoming part of a shared conceptual scheme. The historical examples of ‘brain death’ (Nickel et al., 2022) and ‘sexual harassment’ (Fürst, 2023) illustrate this: it required a concerted effort (by medical professionals and victims of sexual

³ I gratefully acknowledge the suggestion of an anonymous reviewer to make this distinction.

harassment, respectively) to articulate and disseminate a concept that was susceptible for uptake in society at large.

Note that there is a connection between the search for an efficacious public concept that can be taken up in society, and what is sometimes referred to as the ‘implementation challenge’ in conceptual engineering (Queloz & Bieber, 2022). Even if suitable candidate-concepts that can fill a conceptual gap are available, it is a different matter altogether whether these candidate concepts will be endorsed by different societal groups and will have the memetic quality of sticking with shared conceptual schemes. Societal uptake is a process of negotiation, involving various stakeholders with diverging interests (Hopster et al., 2023). Consequently, even if an apparent way of filling a conceptual gap seems readily available, the process of adapting shared conceptual schemes—and overcoming epistemic injustices—can take a long time: years, decades, or even centuries. Think of the struggles for women emancipation, black empowerment, or homosexual liberation, and the conceptual changes associated with the struggles for empowerment of each of these groups. Achieving conceptual uptake, as both conceptual engineers and activists are well aware, can be extremely challenging.

Now, against this background, let us reconsider the mediating role of technology in overcoming conceptual gaps, and rallying for epistemic justice. This role can be quite pronounced, as technologies—such as present-day social media—have a major influence on the propagation of epistemic resources, and can be a powerful tool to modify our evolving conceptual scheme. Consider the #BodyPositivity movement, which gained traction through social media, and which is centred on a conceptual modification. Social media serve as instruments to amplify certain voices in society (Hopster, 2021), and are, in the present day, crucial tools for achieving conceptual uptake.

However, they are not just tools of emancipation. It is not only conceptual gaps that can be overcome with the help of social media. These technologies may also contribute to conceptual misalignments, and mediate our conceptual schemes in ways that are not conducive to epistemic justice, but that instead contribute to hermeneutical suppression and marginalization. Recall the notion of positive hermeneutical injustice: conceptual schemes might also serve to perpetuate hegemonic discourse, at the expense of hermeneutically marginalized groups. The history of mass media, from radio broadcasts during the Second World War to the contemporary ‘information war’ between Russia and Ukraine, shows that conceptual propagation can serve both just and unjust aims. Technologies are powerful mediators of hermeneutical resources, but that they end up empowering the hermeneutically marginalized is not a given.

Conclusion

The burgeoning field of epistemic injustice and recent analyses of conceptual disruption have independently yielded some related concepts and insights, such as the notion of ‘conceptual gaps’, and the idea that epistemic injustices can be perpetuated by conceptual misalignment (or ‘positive hermeneutical injustice’). I have illustrated how each of the three species of conceptual disruption that have thus far been identified—conceptual gaps, conceptual overlaps, and conceptual misalignments—can give rise to epistemic harms or injustices. Connecting the topics of conceptual disruption and epistemic injustice is fruitful, both with an eye to advancing an ‘ethics of conceptual disruption’, and acquiring a better understanding of the conceptual and technological dimensions of hermeneutical injustices.

Conceptual engineering, in turn, plays an important role in addressing conceptual disruptions. Yet contrary to the typical focus of conceptual engineering scholarship, conceptual disruptions—and the epistemic injustices to which they may give rise—are best analyzed at the level of ‘conceptual schemes’ or ‘conceptual clusters’, rather than at the level of individual concepts. An adaptation of conceptual schemes may be needed, to preserve a functional normative orientation in the face of technological pressures, and to prevent hermeneutical marginalization. This is not merely a matter of devising novel concepts ‘de novo conceptual engineering’ (Chalmers, 2020)—i.e., devising new concepts—but also of disseminating them and gaining societal traction, while dismantling concepts that serve to perpetuate epistemic harms. Further integration of scholarship on epistemic injustice with conceptual disruption and conceptual engineering is certainly worthwhile, both on theoretical and practical grounds.⁴

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References

- Baker, R. (2013). *Before bioethics*. Oxford University Press.
- Brownmiller, S. (1990). *In our time: Memoir of a revolution*. The Dial Press.
- Burgess, A., Cappelen, H., & Plunkett, D. (Eds.). (2020). *Conceptual engineering and conceptual ethics*. Oxford University Press.
- Chalmers, D. J. (2020). What is conceptual engineering and what should it be? *Inquiry*. <https://doi.org/10.1080/0020174X.2020.1817141>
- Crootof, R., & Ard, B. J. (2021). Structuring Techlaw. *Harvard Journal of Law Technology*, 34(2), 347–417.
- Falbo, A. (2022). Hermeneutical injustice: Distortion and conceptual aptness. *Hypathia*, 37, 343–363. <https://doi.org/10.1017/hyp.2022.4>
- Feenberg, A. (2010). Ten paradoxes of technology. *Techné*, 14(1), 3–15. <https://doi.org/10.5840/techné20101412>
- Fricker, M. (2007). *Epistemic injustice: Power and the ethics of knowing*. Oxford University Press.
- Fricker, M. (2016). Epistemic injustice and the preservation of ignorance. In R. Peels & M. Blaauw (Eds.), *The epistemic dimensions of ignorance* (pp. 160–177). Cambridge University Press.
- Fricker, M. (2017). Evolving concepts of epistemic injustice. In I. J. Kidd, J. Medina, & G. Pohlhaus Jr. (Eds.), *Routledge handbook of epistemic injustice*. Routledge.
- Fürst, M. (2023). Closing the conceptual gap in epistemic injustice. *The Philosophical Quarterly*. <https://doi.org/10.1093/pq/pqad024>
- Gallagher, S. (2019). Revenge Porn is not the Right Term to Describe our Experiences, say Victims. *Huffington Post*. Retrieved August 3, 2019, from www.huffingtonpost.co.uk/entry/why-are-we-still-calling-it-revenge-porn-victims-explain-change-in-the-laws-needed_uk_5d3594c2e4b020cd99465a99
- Hopster, J. K. G. (2021). Mutual affordances: The dynamics between social media and populism. *Media, Culture Society*, 43(3), 551–560.
- Hopster, J. K. G., Gerola, A., Hofbauer, B., Löhr, G., Rijssenbeek, J., & Korenhof, P. (2023). Who owns ‘Nature’? conceptual appropriation in discourses on climate- and biotechnologies. *Environmental Values*. <https://doi.org/10.1177/09632719231196535>
- Hopster, J. K. G., & Löhr, G. (2023). Conceptual engineering and philosophy of technology: Amelioration or adaptation? *Philosophy Technology*. <https://doi.org/10.1007/s13347-023-00670-3>
- Jorem, S., & Löhr, G. (2022). Inferentialist conceptual engineering. *Inquiry*. <https://doi.org/10.1080/0020174X.2022.2062045>
- Koch, S., Löhr, G., & Pinder, M. (2023). Recent work in the theory of conceptual engineering. *Analysis*, 83(3), 589.
- Löhr, G. (2023). Do socially disruptive technologies really change our concepts or just our conceptions? *Technology in Society*, 72(102160), 1–6.
- Mayson, S.G. (2019). Bias In, Bias Out. *The Yale Law Journal*, 2218–2300.
- McGlynn, C., Rackley, E., & Houghton, R. (2017). Beyond ‘Revenge Porn’: The continuum of image-based sexual abuse. *Feminist Legal Studies*, 25, 25–46. <https://doi.org/10.1007/s10691-017-9343-2>
- Medina, J. (2017). Varieties of hermeneutical injustice. In I. J. Kidd, J. Medina, & G. Pohlhaus (Eds.), *The Routledge handbook of epistemic injustice* (pp. 41–52). Routledge.
- Nickel, P. (2020). Disruptive innovation and moral uncertainty. *NanoEthics*, 14(3), 259–269. <https://doi.org/10.1007/s11569-020-00375-3>
- Nickel, P., Kudina, O., & van de Poel, I. (2022). Moral uncertainty in technomoral change: Bridging the explanatory gap. *Perspectives on Science*, 30(2), 260–283. https://doi.org/10.1162/posc_a_00414
- Pozzi, G. (2023). Automated opioid risk scores: A CASE for machine learning-induced epistemic injustice in Healthcare. *Ethics and Information Technology*, 25(1), 1–12.
- Queloz, M., & Bieber, F. (2022). Conceptual engineering and the politics of implementation. *Pacific Philosophical Quarterly*, 103, 670–691. <https://doi.org/10.1111/papq.12394>
- Reynolds, J. M. (2020). “What if there’s something wrong with her?” How biomedical technologies contribute to epistemic injustice in healthcare. *The Southern Journal of Philosophy*, 58(1), 161–185.
- Siegfried, T. (2013). 50 years later, it’s hard to say who named black holes. *Science News*. Retrieved December 23, 2013, from <https://web.archive.org/web/20170309220238/https://www.sciencenews.org/blog/context/50-years-later-it%E2%80%99s-hard-say-who-named-black-holes>
- Symons, J., & Alvarado, R. (2022). Epistemic injustice and data SCIENCE technologies. *Synthese*, 200(87), 1–26. <https://doi.org/10.1007/s11229-022-03631-z>
- Thagard, P. (1990). Concepts and conceptual change. *Synthese*, 82, 255–274. <https://doi.org/10.1007/BF00413664>
- Van de Poel, I., Frank, L., Hermann, J., et al. (2023). *Ethics of socially disruptive technologies: An introduction*. Open Book Publishers.

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