No cover image available

The Oxford Handbook of Digital Ethics

Carissa Véliz (ed.)

https://doi.org/10.1093/oxfordhb/9780198857815.001.0001

Published: 2021 **Online ISBN:** 9780191890437 **Print ISBN:** 9780198857815

CHAPTER

The Moral Rights and Wrongs of Online Dating and Hook-Ups

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https://doi.org/10.1093/oxfordhb/9780198857815.013.12 Pages C12.S1–C12.N12

Published: 20 October 2022

Abstract

In this chapter we identify three potentially morally problematic behaviours that are common among users of dating and hook-up apps (DHAs) and provide arguments as to why they may or may not be considered (a) in a category of their own, distinct from similar behaviours outside of DHAs; (b) caused or facilitated by affordances and business logic of DHAs; (c) as indeed morally wrong. We also consider ways in which morally problematic behaviours can be anticipated, mitigated, or even prevented by analysis of the ethical and moral dimensions of technologies and their afforded uses. Finally, we offer some possible directions for future work on these topics in particular and on the ethical consequences of DHAs in general.

Keywords: dating, techno-moral change, sexuality, value sensitive design, ghosting, catfishing, consent, digital ethics, hard and soft impacts

Subject: Moral Philosophy, Philosophy

Series: Oxford Handbooks

Introduction

Dating and hook-up applications (DHAs), such as Tinder or Grindr, or websites, such as Snapchat or Instagram, have increased by 18.4 per cent as compared to the same period in 2019 (Kats 2020). The way people are using these platforms has also changed as compared to pre-COVID-19 pandemic times, especially when we look at interaction through DHAs themselves before meeting in person or the phenomenon of 'virtual dates' (Kornath 2020). The pandemic has only sharpened the focus on the already widespread phenomenon of the technological mediation of sex, dating, and love.[1] DHAs can change—or have already changed—the norms, expectations, and values associated with sex and dating (Arias et al. 2017, See also Wachter-Boettcher 2017). This is not surprising for anyone familiar with the history or philosophy of technology. From economic activity to family relations, from transportation to food, technology transforms our beliefs, values, and behaviours. From an ethical perspective, it is essential to begin to examine whether these changes are welcome or troubling in the realm of sex, dating, and love.

We divide the chapter into four sections. In the next section, 'Dating and hook-up technologies: the current landscape', we survey DHAs and describe the technological affordances that mediate dating, sex, and love for their users. This is important in understanding how DHAs can influence values. In the third section, 'New moral wrongs', we present and evaluate three areas of moral concern with respect to these affordances, adopting a pluralistic approach to normative ethical theory. We specifically focus on the new kinds of moral wrongs that DHAs introduce and their potential consequences on the norms that govern relationships in general. First, we discuss the phenomenon of catfishing, which is misrepresenting one's identity, often radically, in online romantic and sexual relationships or profiles. Second, we consider new

forms of, and the prevalence of, harassment in DHAs. We try to answer the question of whether this harassment is different from what existed in pre-DHA times and, if so, what the crucial morally troubling difference is. Third, we focus on the gamification and commodification of interaction, sex, and relationships that is facilitated by DHAs and whether gamification in this context is morally problematic. In the fourth section, 'Ethics by design', we outline some prominent approaches to ethics by design and highlight the challenges of applying these approaches to DHAs. In the final section, 'Future research directions', we speculate about avenues for future research, suggesting some of the potential soft impacts of DHAs and accompanying techno-moral change that may need immediate attention.

Dating and hook-up technologies: the current landscape

The DHA market is expected to be worth $9.2 billion by 2025 and the scale of its ecosystem is truly enormous. There are currently over 1,500 DHAs.[2] The most popular (Badoo) boasts 200 million users.[3] Distinct DHAs cater to various demographics (Christian singles, the polyamorous, etc.) and target people looking for special kinds of relationships (one-night stands, friendship, long-term relationships, infidelity, etc.). DHAs also vary depending on the way they allow and encourage their users to interact (video, messaging, or pre-written texts all the way to virtual reality and tele-dildonics), what their subscription model involves (free, tiered subscriptions for different features, exclusive/application based), and the algorithms used to create matches between users. This is not by any means an exhaustive categorization of the dimensions along which DHAs can vary.

Each one of the broad dimensions of DHA design creates unique affordances that can have ethical significance. An affordance 'refers to the range of functions and constraints that an object provides for, and places upon, structurally situated subjects' (Davis and Chouinard 2016: 241). Affordances can enable and facilitate certain behaviour, beliefs, and attitudes and also make it difficult or impossible to have others. As Donald A. Norman points out, although a chair can also be carried, a chair 'affords sitting' (Norman 1988). By extension, a DHA that allows its users to communicate via webcams introduces the affordance for non-verbal communication through facial expressions and body language and facilitates using tone and emotion to colour the content of one's expressions. It also creates the affordance for unwanted nude exposure.

The mechanics and features that create DHA affordances are typically informed at least in part by the business models of the companies that develop them. Adding webcam communication to a DHA is a business decision driven by a particular business model and if there is no fungible benefit of adding that feature, then a decision to include it will likely result in profit loss. The most successful DHAs are typically those that can monetize their users' attention through features or by adding advertisements or premium features in the application, for example by making webcam communication available only to 'premium' members, who must pay a monthly fee. Importantly, finding the right fit between the business model, features, and affordances and not necessarily its ability to facilitate dating, intimacy, or relationships, is the ultimate measure of success of a DHA. Some DHAs may even tacitly depend on their users continuing to use them so not finding a permanent relationship, which would put them outside of the DHA ecosystem. A business model that banks on creating affordances to form long-term stable relationships would lead to a business failure without distinct streams of revenue.

While DHAs all come with their own affordances, business models, and features, many have common mechanics that put them into a category. First, there is a matrix of potential partners. Second, there is a matching mechanism. Third, there is a mechanism to take the match beyond the DHA to an off-line meeting. The matrix usually presents profiles, which can include user-generated pictures, text, and categories, while the matching mechanism is typically a behind-the-scenes algorithm that takes as input profile features from the matrix and some sort of input from users. The most common mechanism for user input is a digital button or form that allows users to unilaterally engage with profiles presented in the matrix. There is also sometimes a ranking mechanism, which determines which profiles are presented to any one user. In small and niche DHAs, the ranking mechanism is usually very simple since browsing through all the relevant profiles does not take that much effort. In the largest DHAs, however, like Badoo or Tinder, the matching mechanism is typically complex and proprietary, sometimes even taking advantage of artificial intelligence techniques. Finally, once a match is made, an affordance for more direct communication opens up in the DHA, typically in the form of an online messaging system akin to email or more direct means.

How these three mechanisms are implemented is also to some extent a function of the business model of the company that owns the DHA. For example, on the one hand, a DHA business model that relies on large numbers of members in which differently priced memberships determine levels of potential access would largely focus on the ranking algorithm that determines which profiles make it into the matrix. A business model that relies on advertising would, on the other hand, focus on the way in which the matrix is presented to leave room for advertisements and on increasing the time spent using the DHA itself. Successful DHAs will also take advantage of market and demographic research and sometimes insights from social and behavioural sciences to create an implementation of the business model that will generate the greatest profit. Importantly, again, none of this will have much to do with actual dating, hooking up, or relationships, which typically take place outside of the DHA itself. The implementation of the basic mechanics of DHAs is primarily determined by the need to monetize attention and/or keep users coming back.

Nonetheless, the implicit failure that is built into the promise of DHAs has to be carefully managed. A user that figures out that a DHA is stringing them along to make a profit without leading to any dates, sex, or relationships isn't likely to continue using it. So, if the DHA has enough features to maintain the illusion of possible success or simply knows how to appeal to people that are potential long-term users, it can be successful without having to negotiate this tension. One way of doing the former is to make the user more interested in gaming the mechanics of the application than in actual meetings offline. To reach this end, many DHA developers use techniques from gambling to effectively hook their users into loops of reward and disappointment similar to slot machines in a casino or loot boxes in video games (Klincewicz et al. 2022). One way of doing the latter is to explicitly target a demographic that is least likely to look for stable, long-term relationships. While the very existence of these mechanisms and business models could be considered a moral wrong, we remain neutral about it here. Instead, we focus on the way in which DHAs generate affordances for potential moral wrongs.

New moral wrongs

Deception and trust

In a recent case featured on the reality TV show *Catfished*, after over a year of an intense online relationship which started on a dating app, British hairdresser Alex wanted to meet Matt, his fiancé, in person. After a televized investigation, it was revealed that Matt was a woman who was engaging in the relationship as an act of revenge against Alex. She met Alex once and he had called her 'boring'. She explained that she needed to teach him a lesson.[4] Nev Schulman, documentary filmmaker and host of the *Catfished*, was himself deceived for months while in a long-distance romantic relationship through Facebook. He believed he was talking to a nineteen-year-old artist but was actually communicating with a middle-aged housewife who was struggling with mental illness.[5] These cases are extreme but by no means uncommon. It is also true that deception is not a new phenomenon in the context of romantic or sexual relationships. What is unique about deception mediated by the internet is the extent to which someone can misrepresent themselves (from age to gender, physical appearance, geographical location, etc.) and the length of time for which someone can continue the charade. This is perhaps also why romantic deception online has its own pleonasm: catfishing.

There are at least four different kinds of catfishing: (a) the scammer impersonates someone else in order to extract gifts, money, or other favours from their victim; (b) the scammer wishes to torment, exact revenge upon, or monitor the victim by developing a fake relationship with them online; (c) the scammer hides their identity because of insecurity about possible rejection of their romantic advances; or (d) the scammer wishes to explore what it would feel like to be someone else more generally. Although there is little empirical research on catfishing, we assume that all forms of it will fall into a spectrum in one of these four broad categories. Version (a) is clearly criminal, so not as philosophically interesting and (b) is morally wrong but relatively easy to understand from a moral perspective by analogy to cases of revenge outside of a DHA. Categories (c) and (d) present interesting material for philosophical analysis. In category (c) the perpetrator disguises or invents their online identity with the misguided intention of creating a genuine connection with their victim via a fake profile. In (d), whatever moral harm may take place is offset by possibly positive consequences like self-discovery, development of empathy, or simply better insight into other people.

People who engage in (c) and (d) seem to have a wide range of reasons for their deception, including exploration and seeking out their sexual identity. However, ongoing research from the Psychology Department at the University of Queensland, Australia, finds that many people who admit to those forms of catfishing identify as having low self-esteem and insecurity, wish to show themselves as more sexually attractive, or have the desire to explore same-sex relationships with a heterosexual partner.[6] While these are similar to the reasons that people may deceive in real life (IRL), the reasons people deceive online are also often importantly different. Catfishing typically 'occurs when the culprit assumes someone else's identity, typically by creating false online profiles' (Simmons and Lee 2020: 350). Assuming a fake identity online is beyond live action role-playing a different person in a chance encounter or a date: it can result in long-term relationships that happen entirely online.

On the one hand, the moral wrongness of catfishing in categories (c) and (d) can be illuminated by standard ethical theories and the harms created by deception in general. These are wide ranging, from undermining willingness to trust, to creating psychological trauma, to loss of opportunities for the victim. Depending on the extent of the (virtual) sexual contact that the perpetrator and victim engage, catfishing can be further analysed using the notion of sexual consent (Dougherty 2013, 2021). Dougherty argues that if one party lies or mispresents themselves to a potential sexual partner and that person would not have had sex (or a relationship) with them if they had not been deceived, then this constitutes non-consensual sex (or a relationship). Deceptive non-consensual sex (or relationship) is a serious moral wrong and 'a grave affront to their sexual autonomy' (2013: 743). This particular moral wrongness of catfishing can also come in degrees.

Perhaps on a first date someone may exaggerate their status or insinuate they are wealthy: so what? Similarly, feigning an interest in something the other person is enthusiastic about, like sports, or simply passing it over in silence, while deceptive, is not clearly morally problematic. Moral wrongs this light and this forgivable also exist online. For example, photographs are often staged, edited, or presented as contemporary while in fact they are quite old. While these may be morally innocuous, things become more troubling once things like age, wealth, origin, race, gender, or biological sex become a part of an edited version of oneself to potential matches. If these things become the basis for a relationship or marriage, then we have a case of lack of sexual consent or even criminal fraud. DHA deception in the romantic context is on a similar continuum with using staged photographs on one end and catfishing at the other extreme. The one difference is that catfishing online is not illegal and can last much longer.

However, the model on which online romantic deception is on the same continuum with IRL romantic deception does not account for the special features that distinguish online deception from IRL deception. As Nyholm and Frank have argued (2017), a key part of the western romantic notion of love has to do with individuals being attached to a particular unique person, including both their good and bad qualities. It would be inconsistent with most of our conceptions of love, or even true friendship, if we were willing to 'trade in' our lover or friend for a better, younger, smarter, wealthier version of them. In addition to valuing the unique particularity of the other person, love also has a diachronic component (Kolodny 2003). People developing loving or intimate relationships, whether face to face or online, build a shared history, including shared experiences, which constitute, at least in part, the nature of their relationship. For example, in stories of couples in which one person is afflicted with extreme memory loss, part of their tragedy is that despite an ongoing attachment in the present moment, one of the persons is no longer able to draw on those shared experiences. And indeed, one of the moral wrongs that catfishing inflicts is that, by facilitating long-term deception, it undermines this shared history-building in two significant ways. First, it puts in question the authenticity of shared experiences of joy or intimacy. Second, it can disrupt the narrative of the relationship itself by being potentially destroyed by the true identity of the catfisher coming to light. Once the victim discovers that their understanding of the narrative of the relationship is based on falsehoods, this will typically negatively impact the victim's way of understanding themselves and their life. As a consequence, the narrative of the catfished relationship is rewritten as a story of victimhood.

That said, the striking thing about catfishing is that the victims (and often the perpetrators) experience a real and meaningful connection to each other while the ruse is ongoing, sometimes spending months or even years in frequent communication. In other words, the unique connection between individuals does exist but only online. One wonders whether or not the same phenomenology exists in cases of IRL romantic deception. If someone misrepresents themselves for the length of a relationship by hiding some important fact, say, that someone is married to another person, with children, one construal of the situation may involve the deceived perceiving the relationship to be altogether invalid and no reciprocal connection

having been ever established.[7] Or, maybe not. This is the inverse of the situation in which a perfect duplicate of our friend or partner is substituted and we find ourselves wondering whether this is indeed the person that figures in our relationship. We have the special connection but no duplicate.

Harassment and consent

Quickly sharing explicit sexual images is a unique affordance introduced by the internet in general and DHAs in particular. These are not always welcome. Colloquially known as the 'dick pic', the sharing and receiving of unsolicited explicit images and texts is very common, with a 2017 study showing that 50 per cent of millennial women have received these images.[8] The phenomenon has recently begun a subject of empirical inquiry into motivations for and impacts on recipients of these materials (see, e.g. Oswald et al. 2020; Marcotte et al. 2020) and web developer Kelsey Bressler is reportedly developing an artificial intelligence (AI) application that can filter out these images as an add-on to dating apps and social media.[9]

In a wide variety of contexts, from submission to the rule of law in a nation state, to sexual contact, to participation in medical research, consent is understood as a morally transformative act (Wethheimer 2000). It can be given explicitly, as in signing a form to agree to take an experimental form of chemotherapy, or implicitly, as in holding out one's arm in the physician's office to submit to a blood draw. In the political, sexual, and medical contexts, the boundaries of what kinds of actions require consent and in what form consent must be expressed are contested. But across contexts, the moral significance and transformative power of consent is grounded (at least in the Western philosophical tradition) in the arguably Kantian moral demand for respect for individual autonomy, free choice, and self-determination (Kant 2012/1785; Wood 1999). Like the act of indecent exposure on a subway train or in a park, sending an unwanted genital image seems to be a prima facie moral wrong because it involves someone in a sexual activity without their consent. Should we then categorize sending an unsolicited genital image as the same level of moral wrong as indecent exposure? One reason for thinking exchanging a digital image is different and potentially less morally problematic is that it does not carry the threat of immediate sexual violence in the way that a live-in-person exposure would. However, in-person indecent exposure is criminalized in many places and usually occurs in a public setting, whereas sharing these images digitally is not criminalized and can intrude on one at any time in one's private space.

To further complicate the ethics of the 'dick-pic', we should further consider the dynamics of sexual consent. Perhaps *mere* consent to receive such images that is created by the affordance in a DHA or by joining the internet ecosystem in general is too weak a moral standard. One way to extend the notion of sexual consent is by borrowing from the work of feminist legal scholars and philosophers who have argued that rape should not be defined merely by absence of consent (MacKinnon 2005; Anderson 2005). Instead, moral and legal sex should be defined by other communicative standards that show it is welcome, freely wanted, or openly discussed and negotiated. 'Dick pics' violate this more restrictive notion of consent. And they are not the only type of unwanted or unsolicited content that users of dating apps receive. As Jane, Mantilla, Brown, Reed, and Messing documented, harassment in the form of insulting or abusive messages is widespread on dating platforms, especially when people (mostly men) experience rejection (Jane 2016; Mantilla 2015; Brown et al. 2018). These people lash out, looking for ways to intimidate, harass, and demean others beyond just sending unwelcome sexual content.

Some of this abuse, as well as the phenomena of 'dick pics' may be explained by the widely researched online disinhibition effect (Suler 2004, 2016): 'people tend to do and say things in cyberspace that they would not ordinarily say or do in the face to face world' (Suler 2016: 96). This psychological phenomenon is often taken to explain many forms of cyberbullying as well as the willingness to freely share personal information online. Given this tendency, DHA users have to pay special attention to what and how they communicate through the platforms lest they bring about a barrage of disinhibited responses. On the one hand, designers of the DHAs and the corporations that own them should also take the online disinhibition effect into account in how they moderate content. If affordance for abuse, violation of communicative standards, and breach of consent is an affordance that a DHA creates on account of its business model or its wilful ignorance of the problem, then it is ultimately responsible for the harm that it brings about (predominantly to women).

Commodification and gamification

The online environment has also brought about what can best be characterized as the gamification of intimate relations. Gamification is a design strategy that intentionally introduces elements of digital quantification of winning and losing into a domain of human activity that previously did not have these elements represented digitally. For example, the gamification of academic publishing introduced citation counts, the h-index, etc., and platforms, such as Google Scholar, or Scopus, where these metrics can be used to rank individual scholars. Academic research can then be seen and experienced as a competition for most points relative to other players in the same game.

Gamification is an important tool in the repertoire of designers of technology for behaviour change or persuasive technologies (AlMarshedi et al. 2017). For example, designers of technology for health-related behaviour change, especially fitness apps and wearables, include in-app competitions for steps taken during a twenty-four-hour period, creating success badges, and unlocking virtual 'achievements'. Behaviour change psychology explains that these techniques aim to motivate users to engage in activities (like exercise) by triggering both extrinsic and intrinsic sources of motivation (Ryan and Deci 2000; AlMarshedi et al. 2017). When one is extrinsically motivated to do something, one is doing it to achieve an outcome separable from the activity itself; as a behaviour change strategy, this is an effective way to get someone to begin an undesirable or neutral activity. When one is intrinsically motivated, one engages in the activity for its own sake, the joy or fulfilment it provides (Deci and Ryan 1985; Ryan and Deci 2000).

Online-mediated intimacy now also involves elements of gamification, many of which are explicitly implemented to increase customer engagement (Rocha Santos 2018; Eisingerich et al. 2019; Isisag 2019).[10] In popular media, Tinder, with its unique swiping feature, is touted as having 'gamified love'. More obvious gamified features can be found in the app Bagel Meets Coffee, in which users must earn the app's currency of coffee beans to unlock special features, including access to users with whom they have not matched.[11] Beans can be purchases but can also be earned by getting your friends to join the app or sharing about the app on social media. One of the main reasons for gamification in online dating is business models that depend on capturing users' attention and time. These models assume that turning courtship into what is essentially a video game of probabilities and bets could capture enough attention to sometimes even be a substitute for actual dating. App users can spend time liking each other's pictures and matching within the ecosystem of ever-changing internet platforms at the expense of spending time outside of the ecosystem interacting with each other.

On the other hand, app users can fully embrace the logic of probabilities and bets and thereby limit app-mediated interactions to a minimum, focusing exclusively on the pay-out of a rendezvous. This leads to brutal efficiency and has had the consequence of normalizing behaviours that were not typical in pre-internet courtship. Among these is ghosting, that is, unilateral halt to an interaction without explanation; breadcrumbing, that is, a strategy of keeping a potential mate in emotional limbo by giving the minimal amount of attention necessary to keep them interested but at the same time focusing one's attention on someone else; and submarining, that is, re-establishing contact with someone who was an object of one's ghosting. What do we make of the morality of these behaviours?

Tsjalling Swierstra (2013) and colleagues distinguish between soft and hard technological impacts (See also Swierstra, Stemerding, and Boenink 2009; Swierstra and Te Molder 2012). The hard impacts of technologies are quantifiable and involve noncontroversial values (e.g. avoiding physical harm or environmental destruction), whereas soft technological impacts are not obviously positive or negative because they often involve destabilization of existing values and norms (Swierstra, Stemerding, and Boenink 2009; Swierstra and Te Molder 2012). The normalization of the practice of ghosting (and others) illustrates a soft impact of DHAs (LeFebvre et al. 2019). Whether or not this normalization is an efficient or even respectful means of communicating disinterest in pursuing further contact or an unkind and dehumanizing part of dating is up for debate, partly because as we use the technologies our expectations and values in the domain are changing. So, to fully answer the question about the moral dimension of the soft impact of ghosting we would need to actually collect longitudinal data about users and find a measure of something like relationship satisfaction that is independent of the specific values that are presently violated by ghosting and compare these results to a measure of that same variable once ghosting becomes fully integrated into what is considered normal behaviour. To complicate the matter further, there is evidence that one's pre-existing beliefs about how successful relationships are formed, whether they depend on 'destiny' or hard work, impacts on whether one finds ghosting behaviour morally permissible (Freedman et al. 2019). So, to

put it bluntly, the moral status of these soft impacts is hostage to many other things. That said, while empirical research into these phenomena is ongoing, it is already clear that online dating has brought major changes in the way in which people in industrialized societies socialize with each other and in the norms that govern their behaviour.

Ethics by design

DHAs can be designed to take stakeholder values into account. And not only the values of employees and shareholder of the DHAs but also their users. However, taking user values into account is difficult, given the variety of people using DHAs, the various interests they have in using DHAs, and what they may hope to get out of them. What makes this especially difficult is that values that people hold about love, sex, and dating are contested, both in private and public spheres, and that they may be changing as the result of the continued and widespread use of DHAs. Compare this situation to that of values that are involved with the use of medical technologies: autonomy, justice, non-maleficence, and beneficence. We do not have a similar stable list for values that have to do with sex, love, or relationships. In sex and relationships, things are less straightforward. Finally, ethically designing DHAs requires making predictions about the long-term impacts of their widespread use. Happily, these challenges have been addressed by work in other domains of the ethics of technology and we will borrow from that literature to provide some answers to these questions.

Technologies present the world, our options for action, and even ourselves to us in specific ways depending on how they are designed and how we end up using them. They thus have the potential to reify or undermine certain values (Van den Hoven et al. 2015). Multiple 'ethics by design' approaches acknowledge the role that technologies have in shaping the way we think and behave in morally relevant ways and attempt to guide designers through a process of becoming aware of this relationship and intentionally translating certain values into their designs (see, e.g. Friedman 1996; Flanagan and Nissenbaum 2009; Friedman et al. 2002; Friedman and Hendry 2019; Borning and Muller 2012). Some approaches aim to guide designers in focusing on designing for a specific value that is particularly relevant to the technology in question or the population that will use the technology, for example, design for privacy (Warnier et al. 2015), inclusivity (Keates 2015), care (Van Wynsberghe 2013), sustainability (Wever and Vogtländer 2015), or attention (Williams, this volume). A leading approach is value-sensitive design (VSD), which incorporates stakeholder analysis and conceptual ethical analysis into the design process from the very beginning (Friedman et al. 2002; Friedman and Hendry 2019). VSD and other ethics-by-design approaches have also been subject to considerable criticisms, which VSD scholars have met with proposed solutions. In the following paragraph, we highlight three such criticisms that are particularly relevant to applying VSD approaches to DHAs and that compound each other. We then consider two possible responses.

First is the challenge of conflicting values. When creating a DHA that incorporates stakeholder values, how should designers make trade-offs between incompatible values or values that cannot both be equally realized in design specifications (Manders-Huits 2011; Jacobs and Huldtgren 2018)? For example, users of an online dating platform may value honesty and transparency and also, at the same time, privacy and individualized control over which information they share. The method of VSD does not offer any specific guidance on how to resolve such a conflict.

A second and related problem is aggregation, which applies specifically to cases in which designers attempt to take user well-being into account. The problem 'arises due to the fact that a design does not affect the well-being of just one person, but rather that of a range of people' (Van de Poel 2014: 296). If we assume some kind of pluralism about well-being, that is, that different people hold different conceptions of the good life, which includes having different and sometimes incommensurable prudential values, then it becomes very difficult to design technology with the value of well-being in mind because it may simultaneously promote and thwart different people's conception of sexual or romantic well-being. For example, the user who is a simple hedonist may value a DHA that facilitates frequent short-term and low-effort sexual encounters while another user values the DHA that facilitates the cultivation of long-lasting relationships based on friendship and shared pursuits.

The third relevant criticism of VSD is that it uncritically incorporates stakeholder values into design, thereby assuming that the stakeholders value what they *should* actually value and ignoring the possibility that they may hold values that are immoral or that undermine their own well-being or the well-being of others (Manders-Huits 2011; Jacobs and Huldtgren 2018). Some user stakeholders of DHAs may value

efficiency in matching with other users. This could be embodied in the design by creating an interface that is almost all image rather than being text-based or include options to filter one's results along very narrow perimeters (e.g. weight, race, age). Arguably, the 'swiping' right or left feature of Tinder has this effect. Although users may value efficiency in their selection of partners, perhaps this value is actually problematic from the perspective of respect for human dignity, equality, or flourishing through meaningful relationships.

It is beyond the scope of this chapter to offer detailed solutions to these challenges so we will briefly mention some possible solutions (See Vickery, et al. 2018). Jacobs and Huldtgren (2018) have argued that both the problems of value conflicts and uncritical acceptance of stakeholder values can be resolved by coupling value-sensitive design with a substantive first-order ethical theory (Kantianism, utilitarianism, etc.). Such a theory would provide a value hierarchy and method for dealing with clashing values or norms. In such a version of VSD, stakeholder values would no longer function as the only normative input into the design process. Stakeholder values can be scrutinized in light of a set of normative commitments stemming from the ethical theory. In response to the aggregation problem, Van de Poel suggests segmenting the population for which one is designing into groups that 'share a comprehensive goal or a vision of the good life' (van de Poel 2014: 303; See also Van de Poel 2013).

To some extent, these solutions can be seen in the way various DHAs attempt to cater to different segments of the population who are assumed to share common values or conceptions of sexual or romantic well-being. Although we do not know whether VSD played any role in its development, the location-based dating and friendship app Bumble can illustrate some of these solutions. Bumble identifies itself as the 'feminist alternative' dating app and the founder explicitly claims to work to upend patriarchal heteronormative dating culture (Bumble 2015). For man–woman in app matches, the woman has to initiate contact in order for the man to be able to contact her, thus reducing the unwanted contact women experience and putting women in a position of control. The app has also designed features to reduce catfishing and ghosting through photo verification tools and time limits on how long men can take in responding to women with whom they have matched and with whom they have been talking.

VSD could also play a role in developing alternative business models for DHAs that explicitly nudge people to consider the amount of time and attention they spend using them or models that more robustly respect user autonomy. Although VSD is an involved process requiring design expertise and empirical research, two examples can indicate the types of changes that are possible. Designer Tristan Harris's Center for Humane Technology and the Time Well Spent movement emphasize informing people about the features of digital technologies that keep us mindlessly clicking and have negative impacts on our psychological health. Building profitable DHAs that emphasize mindful and healthy engagement might find traction with populations that are aware of the deleterious impacts of many digital technologies. Informed consent is often offered as a panacea for all kinds of potential technologically mediated harms, violations, or privacy issues. As many have observed, the standard 'clickwrap' or 'click-through' agreements that we constantly sign to gain access to a mobile service or site are extremely ineffective at providing users with meaningful information about the risks and benefits of sharing data or using a service (Obar and Oeldorf-Hirsch 2018). But there is an emerging area of research on alternative models for digital consent (see, e.g. Loosman (2020) on consent to m-health apps, Wee et al. (2013) on dynamic consent, and Tiffin (2018) on tiered consent). Creative reimaging of consent to use DHAs that actually respects user autonomy rather than merely providing legal coverage to the company might involve frequent check-ins with users on the ways in which the DHA might be impacting their behaviour or feedback on the amount of time users are engaging with the app per day, similar to Apple's 'Screen Time' feature, which gives you information on your screen use and tools to help you change your behaviour.

Future research directions

Future research in the domain of DHAs is likely to expand in several possible directions as intimacy, sex, and love continue to be further mediated by technology. We argue that this research should pay special attention to soft impacts (Klincewicz and Frank 2018; Nyholm et al. 2022). Several topics that we have not discussed in this chapter but deserve attention involve the soft impacts of DHAs. One of these has to do with discrimination and preference expression. Some mobile dating platforms allow for sorting through potential matches along various parameters, including religion, ethnicity, race, and sexual and gender identity, among others.[12] Of course, these preferences could be expressed and acted upon without the use of DHAs, but several of the technology's features, including filtering by these categories, makes it easier to do so. The ethics of disclosing this information (gender identity, race, etc.) and selecting potential partners based on it is a controversial and emerging area of research. The use of these features has led some thinkers to interrogate the ways in which dating or sexual preferences, which may seem at first glance merely aesthetic or at least morally neutral, can be informed and influenced by morally problematic unconscious biases and assumptions or by unarticulated discriminatory beliefs. For example, philosopher Veronica Ivy has claimed on her Twitter account that having a preference for particular types of genitals in the person one is seeking to date is an expression of transphobia. Brynn Tannehill (2019) in the *Advocate,* among other online magazines has discussed this topic. On the complex issue of disclosure of transgender identity and genital preference, see, for example, Fernandez and Birnholtz (2019) and Bettcher (2007). In their recent book *The Dating Divide: Race and Desire in the Era of Online Romance* (2021), Vaughan, Lundquist, and Lin argue that 'digital-sexual racism' has emerged as a consequence of several features of DHAs (anonymity, digital disinhibition, etc.) used in a society with background conditions of racial inequality in the United States. On the issue of race and ethnicity, see also Mitchell and Wells (2018); Zheng (2016), and Callander et al. (2015) on racialized preferences and fetishization in online dating.

Another area for future philosophical analysis is the variety of new types of relationships that are facilitated by the affordances of DHAs. For example, some apps like Grindr or Skout are specifically focused on geographical proximity, using the phone's GPS to enable users to connect with potential partners in their immediate vicinity. Sharing some intimate information (e.g. in the case of Grindr, HIV status is often shared) through these apps with those in one's vicinity comes with a sacrifice of privacy and potentially safety. In response, hacks like the faking of one's GPS location have been developed by users: is this a form of catfishing? At the other end of the spectrum, some DHAs allow users to widen their search nationally or globally. This seems particularly valuable for people who live in isolated areas or have very specific or uncommon preferences for partners and for those who are seeking a relationship that will be conducted mostly or entirely online. Increasing numbers of people are either in or are open to and participating in long-distance relationships.

In the United States, DHAs are the main way that heterosexuals form relationships (Rosenfeld et al. 2019). In this chapter, we have introduced some of the key features of DHAs and three of the potential new or altered kinds of moral wrongs they facilitate: the catfishing, the unsolicited dick pic, and ghosting. We have also highlighted some of the broader trends that foster these new wrongs, including commodification, gamification, and disinhibition. The incursion of technology into the realm or dating, sex, and even love is not entirely new, nor are its potentially socially or morally transformative impacts. Arguably, the birth control pill, the mechanical vibrator, widely available pornography, or even the newspaper personal advertisement are all cases in which technological developments or new uses for pre-existing technologies had these impacts. Digital DHAs can be seen as part of this lineage, yet they are uniquely ubiquitous and embedded in smart phone and computer technology, which is an unavoidable part of many of aspects of our lives already: work, entertainment, socializing, education, and consumption. For these reasons, they merit special moral consideration and demand further empirical and conceptual research, especially on their soft impacts, their disruptive potential, and how they can be intentionally designed to promote specific values.

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Notes

1 For a contemporary elaboration on mediation theory, see: Verbeek (2006, 2008, 2011, 2015).

2 See https://blog.marketresearch.com/dating-services-industry-in-2016-and-beyond, accessed 24 April 2022.

3 See https://tech.eu/news/badoo-200-million-users, accessed 24 April 2022.

4 See https://www.ladbible.com/entertainment/weird-mans-boyfriend-of-a-year-turns-out-to-be-woman-seeking-revenge-20210715, accessed 24 April 2022.

5 See https://abcnews.go.com/2020/catfish-woman-angela-wesselman-twisted-cyber-romance-abc/story?id=11831583, accessed 24 April 2022.

6 See https://phys.org/news/2018-07-catfish-people-onlineit-money.html, accessed 24 April 2022.

7 The authors cannot find anything but anecdotal evidence to support that one experience is more common than others.

8 See https://today.yougov.com/topics/lifestyle/articles-reports/2017/10/09/53-millennial-women-have-received-dick-pic, accessed 24 April 2022.

9 It is important to note here that receiving unsolicited explicit images is not limited to users of DHAs—people, especially women, who use any social media platforms are exposed to this content.

10 For a discussion of digital gamification in the context of relationships, see: Danaher et al. (2018). And for a response, Klincewicz and Frank (2018: 27–28).

11 See https://coffeemeetsbagel.zendesk.com/hc/en-us/articles/360017441574-What-are-beans-, accessed 24 April 2022.

12 According to Hunte (2020), Tinder has promised to remove the race feature in the future.