



Love and romantic relationship in the domain of medicine

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Abstract

In this paper, I explore the nature of medical interventions like neuromodulation on the complex human experience of love. Love is built upon two fundamental natures, viz: the biological and the psychosocial. As a result of this distinction, scientists, and bioethicists have been exploring the possible ways this complex human experience can be biologically tampered with to produce some supposed higher-order ends like well-being and human flourishing. At the forefront in this quest are Earp, Sandberg and Savulescu whose research works over ten years has focused on the good that could stem from the medicalization of love. I acknowledge the various criticisms that have been made against this stance. However, most of these criticisms have been directed towards the mere side effects and sociocultural disservices that could result from the process of using drugs to influence human romantic relationships and in the end, critiques endorse the medicalization of love on the basis that its benefits outweigh the disadvantages. Consequently, I advance two strands of arguments against “medically-assisted love,” the ontological and the socio-ethical arguments. The former presupposes that beyond the possible side effects of medicalizing love there is something inherently mistaken about this effort and there is something intrinsically different about love that distinguishes it from its medically-engineered alternative. In the latter argument, I claim that drug interventions in romantic love contravene the very nature of medicine. Overall, I believe that critiques were still able to endorse medicalizing love despite their objections because they were only looking at one direction, the physical/cultural complications.

Keywords Biology · Love · Medicine · Medical interventions · Ontology

Background of the study

Love, as an object of philosophical enquiry, is understood to stem from two aspects of human nature, viz: the biological and the psychosocial dimensions (Jenkins 2017; Earp and Savulescu 2020, p. 19). On the one hand, without the hormonal components of the body, it would be impossible to evoke the kind of emotions that we now associate with love, on the other hand, without some other external normative, historical and psychosocial factors, we would not know how to channel the emotions that love is characterized by and we wouldn't know any better to conceptualize love. Beyond its philosophical and even poetic considerations and as a result of its biological dimension, love has also become an object of scientific studies. According to science, love is

greatly influenced (or even initiated) by our brain chemistry. A group of scientists led by Helen Fisher identified three categories of romantic love: lust, attraction and attachment. These categories are each fueled by some unique sets of hormones secreted by the brain. Lust is fueled by estrogen and testosterone in both women and men respectively. Attraction is associated with serotonin, dopamine and noradrenaline/norepinephrine—these are at the same set of hormones that underscores novel and exciting experiences. Attachment is initiated by oxytocin and vasopressin, these hormones are also known as the bonding hormones and are known to be responsible for the bond between mother and child (Fisher 2014; Earp et al. 2013).

Accordingly, building upon this scientific framework, Brian Earp, Anders Sandberg and Julian Savulescu, in a series of works they coauthored (and sometimes individually) have argued that there are great potentials in the possibility to biomedically enhance love and human romantic bonds. They think that since love is a foundational human good and also “biologically determined,” we should use our burgeoning understanding of love in neuroscience to

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enhance the quality of love through some biological manipulation (Earp et al. 2015, p. 324; Savulescu and Sandberg 2008, p. 42). Against this backdrop, my paper while exploring the nature of medically-manipulated love, will be arguing that medicalization of love is one such bad form of medicalization as Erik Parens (2013) argued, for reasons I will enumerate.

Furthermore, researchers within the ambience of this present study often underscore how to medically terminate love relationships, which often come under the consideration of “anti-love drugs,” I shall specifically limit the scope of this paper to Earp, Savulescu, and Sandberg’s series of papers on the potential biomedical enhancement of love and romantic relationships especially as articulated in their book, *Love is the Drug: The Chemical Future of our Relationships*. In other words, medicine’s involvement in the termination of romantic relationships does not fall within the scope of this paper. More so, I shall quite often reference some of the criticisms that have been levelled against their position. Consequently, by way of proceeding, I shall first explore the science, nature and concept of a biomedically manipulated love. Secondly, I shall be advancing two sets of arguments, viz: (1) that “medically-assisted love” is not the same “love” that we know and value (ontological argument); (2) to medically “engineer” love is beyond the scope of medicine and for this reason whatever good intention there might be in this effort is soiled (social-ethical argument).

The biological foundation of human romantic love

As a biologically determined human experience, love, according to Earp et al., stems from the effects of hormones (or neurotransmitters in some cases—hormones function locally as neurotransmitters to influence behaviours) on the human body (Earp et al. 2015, p. 324; Savulescu and Sandberg 2008, p. 42). Hormones (from the Greek word *hormon*, meaning to “excite”) are organic chemical messengers secreted by the endocrine glands into the bloodstream to act on target organs or tissues where they coordinate and regulate the physiology and behaviour of the body by integrating, controlling and regulating its functions (Nelson 2010, p. 97). As already mentioned, one of these hormones that influence human experience of love is called oxytocin (OT, hereafter). OT is a neuropeptide (a kind of hormone secreted in the brain region) that direct the behaviours, physical and chemical activities associated with reproduction together with other nonsocial and social behaviours. Further research has shown that OT is involved in initiating trust, in the processing of social information, and intuiting emotional states of others. Consequently, it regulates pair

bonding in monogamous species and their sexual behaviour (Young and Zingg 2009).

OT’s connection to pair bonding effect was discovered through the studies of some rodent species (voles) that exhibit monogamy. There are two variants of voles, based on their monogamous or polygamous mating strategy. The difference was established to be caused by the activities of the hormones/neurotransmitters, OT, dopamine and vasopressin, how they react with one another and how their respective receptors are structured in the brain. OT and Vasopressin help initiate and contain information about social identity (enabling partners to be familiar with one another), then, dopamine knots that information with some amount of reward. So, the partners are encouraged to be with one another. Furthermore, it has been found that the more OT and vasopressin receptors are grouped in the brain’s reward centres, the greater the social reward and the higher the need for exclusive partner preference. Prairie voles unlike meadow voles have a high-density cluster of OT and vasopressin and so they are socially monogamous. In the study of vole monogamy, some scientists transferred the vasopressin from prairie vole into the brains of their polygamous relatives, the meadow voles. The result demonstrated that the meadow voles abandoned their polygamy and in turn they embraced monogamy. Another research took a different approach by either increasing or decreasing the amount of oxytocin in the prairie voles. When oxytocin is reduced there is a decline in the monogamous behaviours and the opposite is the case when it is increased (Earp and Savulescu 2020, p. 112).

It is not exactly clear if the hormones work exactly in the same way in human beings. A correlation has been without doubt established but it is not causal. Through neuroimaging it has been found that there is heightened activation in the brain region where OT, and dopamine receptors are found in cases where mothers are shown the pictures of their babies and adults exposed to the images of their romantic partners. This significant heightened activation does not occur when the mothers are shown the pictures of some other babies that is not theirs or the adults shown the images of some other people who are not their romantic partners. None of these elevations of OT levels in human beings explicitly induce greater feelings of love or attachment (Earp and Savulescu 2020, pp. 112–113). Despite the uncertainty, there is a working theory that if hormonal treatments and gene therapy can be used to influence the romantic pair-bonding behaviour in animals, there is every reason to believe it could do the same for humans and their romantic life.

Furthermore, Earp and Savulescu, referenced some other evidences that suggest externally boosting OT levels can either effect prosocial, bond-enhancing behaviours in some individuals/couples or it may result in antisocial or hostile behaviours in others. This is confirmed in a study carried out

by the neuroscientist, Beate Ditzen. Ditzen administered OT (and placebo) to some heterosexual couples before allowing them to get in a conversation. The studies concluded that OT increased the ratio of positive to negative communication behaviours and brought about a faster decrease in cortisol (stress hormones) levels after their conflict (Earp and Savulescu 2020, p. 115). Even though this is not a clear case that OT or other hormones for that matter can directly influence the feeling of love, the study certainly establishes that OT can boost emotions and behaviours that are pivotal to the health and operations of romantic relationships. Invariably by bringing together these hormones and their operations through gene therapies and enhancement drugs there are chances that we can willfully bring about love (or its stages). All that is required to make this happen is the administration of the appropriate drug in the right amount.

The science, nature, and concept of biomedically-effected love

At this juncture, it is no longer farfetched how love can be medically induced after its biological basis has been established. It would be good to begin with a disclaimer: there is no particular drug that magically causes love. What we should ask however, is what kind of intervention is required to medically enhance or produce love? Already it has been shown how OT can be externally introduced into the body and the corresponding neural response of either prosocial or antisocial behaviours occurs. Although, a lot is still unknown about the biology of love, some promising studies are underway. In non-human animals, hormones directly control their behaviours, in humans, it is a bit more complex than that however. Hormones in humans can only make certain behaviours more probable, they are not the absolute regulators of behaviour (Earp and Savulescu 2020, p. 53). That is why human experience of love cannot just be all about regulating hormones. Despite this uncertainty, we are already witnessing how drugs like antidepressives (SSRIs) such as serotonin re-uptake inhibitor have been discovered to affect people's emotional responses to the people around them in significant ways, sometimes by numbing effect and at other times by augmenting some specific positive attitudes like the desire to cooperate (Persson and Savulescu 2012, p. 120). Couples who are always in conflict can always use this drug to diminish their emotional responsiveness. This can prevent retaliation and reduce prolonged periods of conflict.

Earp and his co-researchers point of departure for any attempt at medically intervening to initiate love is on the basis that beneath the human experience of romantic love, is an assortment of brain systems that are intertwined and have evolved to serve the reproductive needs of our ancestors. So, the idea is that, if these brain chemicals (dopamine, oxytocin,

etc.) direct emotions and interpersonal behaviours, then tampering with them can indirectly help us to either initiate or diminish romantic relationship. Tampering with these neurochemicals only indirectly influence the human experience of love because love cannot be reduced to some brain events. However, these brain chemicals and activities do very much to shape our romantic experiences. Consequently, in human beings synthetic OT can be administered by spraying it into the nose and it "seems" to enhance romantic pair-bonding and attachment-related representations (Earp et al. 2015, p. 324). Another example, hormones such as testosterone and estrogen can be modulated to increase sex drive. By so doing, romantic bonding can be greatly enhanced.

To this effect, there are already existing pro-libidinal drugs. Viagra (sildenafil) used since the 1990s is one of them. This drug can enhance or transform the sexual side of love. Another drug of this sort is Addyi (flibanserin), specifically made for women. Although these drugs are not technically love drugs, they can however enable romantic relationships amongst couples who continue to appreciate a specific form of sexual intercourse as they become old (Earp and Savulescu 2020, p. 53).

The ethical talks and concerns

Beyond the scientific discourse about drug intervention on love, Earp and his coauthors do consider the ethical dimensions and implications of this novel intervention. They considered questions like if it is morally permissible to allow medicalization of love and if it is really a good idea to do so? They did also consider how medicalization of love could be bad. However, the greater portion of Earp and co.'s work is on the potential positive effects of love on well-being which they understand in hedonistic perspective. Hence, they argue that if love can have such positive effect on human health and well-being, then it should be sought after to a large extent at all possible costs even through medical enhancement. For them, it is likely that the positive effects of making love a medical issue outweigh the negative effects (Earp et al. 2015).

Now to the question of permissibility, Earp et al., provided a theoretical framework through which the medical intervention into love can be allowed. So, they outlined some conditions that must be met in order to allow medical enhancement of love. These conditions deal with issues relating to: (1) aims and benefits, (2) consent, (3) authenticity and (4) the necessity of prescribing these drugs to an individual patient. The aims and benefit condition requires that the physicians prescribe the drugs that must improve the patient's well-being. Accordingly, for a drug to improve a patient's well-being, its benefits must outweigh the potential risks caused by the failure to either reduce or increase the relevant relationship-attachment,

together with possible after effects (Earp et al. 2013). The second condition requires that patients must understand both the risk and benefits of the said drug, appreciate, and then agree to allow the drug to intervene into his/her love life. The third condition on the other hand, presupposes that the patient's decision to use the drugs must be evaluated in relation to his or her higher-order goals. For Earp and co., a decision of this sort is authentic if it conforms with the patients second-order goals like ending an abusive relationship or mending a deteriorating one that deserves to be kept, when acting on the second-order desires are encumbered by the first-order desires of strong attachment to an abusive partner or a diminishing-attachment to a loving partner (Earp et al. 2013). The necessity condition requires that before any attempt to involve drugs into one's love life, every other non-drug intervention and treatment such as psychotherapy and couples counselling must have been tried and found to not yield any fruitful result.

Above all, Earp and his coauthors' proposal for medical intervention in our love life is not just arbitrary. It is to be reserved for those kinds of cases where it is expedient, necessary and deserving. One of such situations they recommend that love be "medically induced" is in preserving what they term 'good enough marriages.' A good enough marriage is one where the marriage might not be good enough for some individuals' intent on personal happiness, however, there are other more beneficial reasons to keep the marriage going. For example, such marriages are good enough to make a positive impact in the lives of children when they are involved. Ordinarily in this kind of cases there are no active conflicts between the couples just that some existential circumstances have led them to lose the fervour with which they began the marriage with. Furthermore, Earp and co. also suggested that the individuals have every right to leave the marriage (should they choose to) only that staying for the sake of the children (and perhaps for some other complicated good reasons—genuinely having compatible values and getting along well—where it is not expedient to leave because of some abuse, verbal or physical) is one good reason to try to make things work (Earp and Savulescu 2020, pp. 81–82).

Ontological concerns about medically induced love

I will begin this section by underscoring the basis upon which Earp et al. built their case for the possibility of medically engineering love. Although they do not commit to any particular definition of love, they however pride Carrie Jenkins (2017) suppositions that love has two dimensions, the psychosocial and the biological dimensions. For their argument to succeed, they need at least the claim that love has some biologically root. Accordingly, the biological dimension which is their main concern characterizes love

as the summation of lust, attraction, and attachment. However, the second basis of their conception of love seems to underplay the first, where love is both the product of biological and psychosocial factors. It really downplayed the role of the psychosocial factors by priding lust, attraction and attachment as the fundamentals of the human experience of romantic love. Consequently, in this section I will be dealing with the question of what constitutes love and why medically induced love does not quite get it on the one hand and on the other why it can at best be another human value.

Love in my estimation, ontologically transcends the duality of biology and the psychosocial. [Here I understand ontology to be the nature or order of reality of a thing] We can definitely argue that biological and psychosocial factors constitute love, however, we cannot argue that they are both ultimately sufficient and necessary conditions of love. In the same way, we cannot claim that accidents are necessary and sufficient conditions of substance, as if to say if accidents are brought together there will emerge the substance. Take the established biological stages of love for example, lust, attraction, attachment, there can be instances when love in the sense we most commonly conceive it does not involve any one of these stages. It is plausible to think of couples/partners being romantically involved without any form of sexual lust or sexual obligations between them. This is the case for most asexual people. Should love be denied them or should we invalidate their relationship because their form of loving may not involve sex?

Earp's et al. stance on medical inducement of love is at the very least reductionistic and utilitarian. Hence by clamouring so much on hormones, neural responses to certain stimuli, they demote love to sexual feelings and certain emotional response that can be turned off at will by administering some drugs. I think, in trying to underpin the place of biology in the act of loving, they over-archingly blur the line between libidinal impulses and the whole concept of love. It is as if there are no differences between romance and romantic love. More so, in their attempt to argue that biological mechanisms matter as much as psychosocial interventions in making people either fall into or out of love, Earp and Savulescu almost reduced the whole idea of love to merely sexual passions or intimacy. Their concept of love traced deep down to the biological foundation, always wound up on pair-bonding/attachment-relationship triggered by oxytocin and vasopressin. Thus, they failed to factor in that attachment does not necessarily mean romantic love neither does sex. Even if drug interventions could lead people to develop sexual passions for one another, just like cocaine or heroin can fire up neurochemicals that in turn result in so many temporarily-acquired unprecedented behavioural traits, there

is no guarantee that sex-fueled attachments can lead to love or is indeed love. Likewise, Earp and his coauthors' stance on medically inducing love denies love that ontological status.

Medically induced love is just a means to various other goods such as health and human flourishing. It does not consider love as a good to be considered in itself. (Nyholm 2015, p. 340). Hence the reason it can be switched on and off at will (just by administering some drugs) and as a result, Earp and co. did not devote their time to discussing love as a good that we desire and seek for its own sake. In presenting their case for attachment-entrenching enhancement Earp and co., argue that there are some benefits that can be obtained from stable close relationships. Such relationships can function as the source of sex, be good for children, secure justice against 'natural lottery' etc. (Earp et al. 2012, pp. 38–39). It is on these bases that they want love to be discussed and it is also on this ground that I make bold to claim that that their concept of love differs from "love" that we have always known.

Consequently, in contrary to these Earp and co.'s accounts of love, I would like to think that most people desire love as a good in itself. Hence, love as I am proposing and would like to think, understood in our present time has some three distinguishing fundamentals amongst several others, that set it apart from Earp et al. account, love is:

- (1) Transcendent
- (2) Valued (albeit differently from Earp et al. account), and
- (3) Willed.

These features are not exhaustive neither do they offer full account of love only that going by Earp et al. account there will not be room for them neither would they matter. As I have shown above, love although, constituted in parts by biology (and even by psychosocial factors), is transcendent because it far exceeds these factors/constituents in principle. Or at best, we cannot say these constituents bound love. Love as experienced by real people in real time, cannot be accounted for in the strictest sense by the absence or presence of the lust-attraction-attachment equation or simply by pair-bonding/attachment elicited by some hormonal activities. Similarly, love cannot be demoted to sexual contract/compact. In fact, as a lived human experience, love is not one and the same thing in all its possible manifestations. It just cannot be boxed. It transcends sex. Sex is somewhat an auxiliary good of romantic relationships (and sometimes it is not even a good unique to the said relationship, it might be simply transactional). This is not to say the least, even many people in romantic relationships would not base their union on the quality of their sexual life. Rather, as one account of love has it, love is a valuing attitude. Hence, to love is to have a range of pro-attitudes (wants, desires, urges, moral

views, economic prejudices etc.) toward a person that is required in virtue of some facts about the person (Mathes 2016, p. 2). Thus, love is neither solely about sex, nor about some metabolisms. It is primarily about person(s) amongst other things, to suppose that is not so, is to deny something fundamental about love. That is, love transcends any one of the above-mentioned factors or sets of factors considered independently.

Another way "love" ontologically differs from what Earp et al. is proposing is that people place value on love for its own sake not merely on some supposed goods love can provide. In his critique of Earp et al. proposal for the medicalization of love, Sven Nyholm, hinting Erik Parens, thought that the attempt was a categorical mistake. A categorical mistake is one where something in a distinct category is treated as if it belonged to another category which the thing in question does not appropriately belong. So, in this case, medicalizing love is a categorical mistake because according to Nyholm, love as a "basic end or core human good" is rather mistakenly considered as a means to some other good. Invariably, there is something inherently mistaken about treating love as medical issue. (2015, pp. 340–341). If on the fundamental level there is something mistaken, it is safe to conclude that the end product of such intervention has been substantially altered and as a result we would have a different end result. More so, with the way in which love is celebrated, regarded, searched for and valued, it seems misplaced to consider it as a mere means. Love is basically considered as a desirable and essential fundamental value of human life. It is often almost regarded as an end itself universally (Nyholm 2015, p. 342). Consequently, like it was established in the last paragraph, the medicalization of love reduces love to some instrument/channel to some other end. Furthermore, love as conceived by Earp et al., is valued only as an object of intellectual enquiry (like a specimen in the lab). This is obviously not bad. However, "love" is valued differently. It is highly esteemed for its own sake, valued as an object of practical concern and desire. For all these reasons, medicalized love cannot be experienced, regarded, and searched for as we do "love". It is only an accidental/instrumental experience along the way of achieving well-being and human flourishing.

Love is above and beyond all else willed. It is a good we both consciously will and with efforts try to preserve. Love in this sense may be understood as a virtue that is cultivated by habitually orienting the human will towards it (for its attainment and sustenance). For instance, one of the observable attitudinal features we see in the lives of those in love is that sometimes they try to outdo one another in putting the other's welfare ahead, not because the couples are necessarily obligated to do so for each other, but by their own volition persistently choose to. This is not to say the least, people often recount how falling in love has for the first

time made them to put another's welfare ahead not because they are coerced or trapped but that it brings them joy to do so. Accordingly, volition is an active element to the whole experience of love, one which Earp et al. try to eliminate or decisively forgot to factor in. Volition is the third fundamental that makes the concept of love this paper advocates ontologically different from that propagated by Earp et al. Love is something we actively seek after. It is not a passive or involuntary affair. However, love under the domain of medicine takes volition away. The efforts we make through our human will is replaced by the efficacy of the particular drug used in bringing about love. This ordinarily casts doubt on the nature of the love that drugs would help to initiate. Many human experiences are considered for themselves and organically altering such experiences will alter an essential aspect of these experiences. It cannot be imagined that drugs can be taken to enhance the human experience/value/attitude of goodwill. According to Kant "...goodwill is not good because of what it effects or accomplishes or because of its adequacy to achieve some proposed end; it is good only because of its willing, i.e., it is good of itself..." The fact that a moral agent 'willed' it makes goodwill morally relevant or an object of moral evaluation. It attracts moral assessment of praiseworthiness as a result. Supposing volition is taken away from goodwill and perhaps replaced by coercion then the moral agent has no claim over his/her benevolence. That is what drugs do to human experience of romantic love. SSRIs predetermines emotional responses. Nevertheless, love by its nature transcends emotional imbalances that is why 'real lovers' continue to love each other in and out of seasons of feelings.

Love is beyond feelings. It is not a switch to be turned on and off at will. That is why tampering with hormones and neurons in the hope of actualizing love begs the question of whether what form of relationship that comes after is still love. Because it would be the case that the possibility to will and decide had been taken away indirectly. Since human experience of love—the act of loving—is not just some series of emotions but also an act of the will, it is safe to assume that love is within our control. And it would be intuitively inconceivable to think of love without the possibility to will it (without volition). People desire to be able to motivate love in their partners simply by being the particular persons they are. (Protasi 2016). Nobody wants to be loved because of the effects of some drugs. People wish that their attraction and attachment should continually be reinforced and expanded as a continuing outcome of their developing shared histories that they build together within their loving relationships (Kolodny 2003). They wish for their partners to be compatible with them—good fit. Now supposing that our partners need some medical interventions to make all these happen, to begin, preserve and enjoy our romantic experiences, is it still love that we are experiencing? I submit that

it is an entirely different kind of human attachment although appearing like love but intrinsically distinct. It might be positive and even desirable in its own way; it would still not qualify as love—it is just not love.

Socio-ethical concerns

Having explored the ontological issues that arise from the idea of medically enhancing love, the rest of the paper shall be dedicated to arguing why the idea itself contravenes the very nature and purpose of medicine.

Medicine is a moral human enterprise because the ethical mandate of medicine as it concerns the physician's action, is to help—and not to harm—the patient. To harm the patient, either intentionally or unintentionally, is to fail at medicine's primary ethical mandate (Okwenna 2020; Marcum 2012, vii). In other words, cure and care are the primary and fundamental goals of medicine (Stegenga 2020). Consequently, any use of medicine beyond these aims not only falls outside the scope of medicine but also stands the chance of jeopardizing its practice. Medicalization of love is one of such instances of the use of medicine to achieve some purposes that are not directed towards the two aims of medicine and can be counterproductive towards achieving these said aims.

First, "falling in and out" of love is obviously not some medical problem and taking some drugs or undergoing any medical procedure for this purpose might on the general seem unwarranted. There are obviously times when using medicine could help and not harm but my main worry here is that medicalization of love is at the very least directionless. Supposing we use drugs to initiate love, would there be in some sense that the object of the love (the potential beloved) could be encoded in the drug as well, such that an individual would be wired to love just one particular person? If love drugs are only concerned about increasing or decreasing the potential to love, would they also determine whom the love should be directed to? Furthermore, medicalizing love is also directionless because there is no one part of the body that can automatically bring about love. In fact, Earp et al. as we have seen in the previous sections of this paper, conceded that unlike in the metabolisms of non-human animals, hormones do not explicitly control human behaviours rather they only play a mediatory role. So, we cannot solely rely on hormones for causal explanations of human experience of love. The probability as we have seen is so low that it seems to be an unnecessary risk to expose the body to—the body who's well-being the practice of medicine has sworn to cure (when diseased) and care. Supposing drugs or any other medical procedures that might be employed to effect love poses no risk at all, then, it might be conceivable to give it a try. However, according to Terbeck and Chesterman, human neurology and high-order brain activities are so complex that

there will never possibly be a psychotropic drug that does not have side effects and as a result it would be important to always determine that the risks of these side effects do not outweigh the benefits of the intervention (2014, p. 89). The real problem is that there is no guarantee that at all times and in all instances an extra care will be taken to determine that the risks do not outweigh the benefits. So, the better approach would seem to stay clear of any medical intervention or look for other non-medical alternatives that can be as much effective.

Secondly, there is a reason lack of love is not a medical problem. Drugs work on different parts of the body to correct defective body organs, boost body metabolisms, rejuvenate worn out body parts, protect the body against some malignant bodies etc., it suffices to say that drugs or any medical procedure work on target areas of the body but love drugs would not have such target areas since no one particular part of the body can be responsible for love. So, even if we take some hormone enhancing drugs to alter the hormones that might be connected to human experience of love, we wouldn't still be promised love as an end result. It is true that medical interventions even directed towards medical problems only give good odds of a particular result, but they are always prescribed with greater assurance that the desired goal will be achieved, when it is absolutely necessary and for the lack of a better alternative. Someone suffering from headache will not be prescribed paracetamol if there is no certainty that paracetamol cures headache. Conversely, medicalizing love from the outset only promises some prosocial or antisocial behaviours which do not equate to love. These so-called love drugs do not actually magically bring about love. There is no one target area of the body to send the drugs or direct the interventions to. So, it is really difficult to place how these drugs are necessary given that their effectiveness is only probable and their risks certain. More so, using drugs to effect love is like using painkillers to attack cancer in the hope of eradicating cancerous cells. The painkillers do not miraculously wipe away cancer cells, rather, they toil with our body chemicals by making some inactive and hyper-activating others (all of which come at a cost). Love drugs like SSRIs work like painkillers. Non-steroidal anti-inflammatory drug (NSAIDs) are pain drugs and they work by impeding the effect of some enzymes called cyclo-oxygenase (COX). COX aid to produce other chemicals called prostaglandins. Some prostaglandins are involved in the production of pain and inflammation at locations of injury or damage. Thus, a decrease in reduction in prostaglandin production diminishes both pain and inflammation (Ashelford et al. 2016, p. 125). Psychotropics (the group of drugs potential love drugs belong) like NSAIDs basically neither advance cure nor care, they rather prevent a healthy part of the body or a healthy body mechanism from performing its functions. They are merely like taking alcohol

to either gain courage or escape from a bad experience. It is in this way that medicalization of love contravenes the purpose of medicine.

The third consideration would be that we cannot trust pharmaceutical companies and the policy makers they have lobbied to have the interests of the "patients" at heart. Arming these entities with the power to shape our experience of love is overarching. In the recent TV series, *Dopesick*, which was based on a nonfictional book of the same name, we were presented with the stories of real people affected by the opioid crisis. We saw how the leading pharmaceutical company advanced their new pain drugs, oxytocin, even in the face of countless alarms raised against the addictive portent of this drug. They went to the extent of bribing the medical community including the officials of the Government agency responsible for regulating drugs. They had their way. This might be the kind of scenario we might have with love drugs. We cannot trust pharmaceutical companies to be completely honest and transparent about the effects and potentials of their drugs. These companies have found a way to market and make profits from drugs that do not better public health, sometimes they are not even safe and are prescribed without real necessity (Jorgensen 2013, p. 562). Furthermore, this will make Earp et al. conditions for the permissibility of medicalizing love even more intractable. Earp et al., did not seem to factor in the political clout drug companies have over the production and circulation of any drug. In the ideal world, the benefits of the drugs to help couples find love might outweigh the politicization of medicine but we are not yet in that world and Earp et al. did not advance any argument to suppose we can manage it.

Conclusion

Love is a very deep human experience that stretches deep down the boundaries of the human condition. It reaches down beyond the range of any medical intervention. Friendship and love are important human goods that cannot be invaded by drugs. This paper has been able to show the following:

1. that love is a product of volition and cannot be consigned to some mindless chemicals were it to be, it would lose its essential value. It would conspicuously cease to have this particular kind of value we place on it.
2. Earp et al. overemphasis on the lust-attraction-attachment categories blurs the line between romance and romantic love such that medicalizing love implies effecting a desirable change in libidinal response or responding to sexual stimuli.

3. “Love” as we know it is willed, transcendent and valued. All these fundamentals ontologically distinguish it from the medicalized love that Earp et al. are advocating.
4. Love is not a medical problem and so, it falls outside the scope of medicine. If medical intervention on love is to be granted it leads to more risks than no number of benefits from the said intervention can outweigh.

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Declarations

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