

LOVE AND FISSION

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ABSTRACT. According to a traditional conception, romantic love is both *constant* – if someone loves another, they continue to love them – and *exclusive* – if someone loves another, they love only the other. In this paper, we argue that the essentiality of constancy and exclusivity is incompatible with the possibilities of fission – roughly speaking, of one person becoming two – and fusion – roughly speaking, of two people becoming one. Moreover, if fission or fusion are possible, then constancy and exclusivity are obligatory features of love only if there are moral dilemmas. We conclude by suggesting this casts doubt on the constancy and especially the exclusivity of love.

1. INTRODUCTION

According to a traditional conception, romantic love is both *constant* – roughly, if someone loves another, they continue to love them – and *exclusive* – roughly, if someone loves another, they love only the other. In Homer’s epic *The Odyssey*, for example, Penelope’s love for Odysseus is constant – since she continues to love him even through his twenty-year absence at war and then sea – and exclusive – since she rejects all other suitors. The constancy and exclusivity of love are an intuitive combination. But we show in this paper that they are inconsonant with the possibilities of fission – roughly speaking, of one person becoming two – and fusion – roughly speaking, of two people becoming one.

In the recent television program *Living with Yourself*, for example, lead character Miles Elliot is struggling to balance his demanding advertising career with his obligations to his wife Kate. With the money they had saved for fertility treatment, he decides instead to undergo an experimental but transformative therapy. Unbeknownst to him, the therapy involves the creation of a biological clone – known in

the film as “New Miles”. New Miles is also imbued with Miles’ memories and personality, modulo a few subtle enhancements, such as better memory and eyesight. The therapy would usually also involve the biological death and disposal of Miles’ original body. So if everything had gone as planned, neither New Miles himself nor anyone else would ever have known that he was a clone.

But not everything went as planned. Miles’ original body accidentally survived the therapy and so someone – known in the program as “Old Miles” – later awakens in a shallow unmarked grave. Old and New Miles both return to Miles’ home, where they vie for Kate’s affection. On the face of it, this poses a problem for the constancy and exclusivity of Kate’s love. Since Old Miles and New Miles are different people, exclusivity commits Kate to loving only one of them. But insofar as Old Miles and New Miles are both Miles, constancy commits her to loving both of them. So if Miles’ misadventure is a case of fission – roughly, of one person becoming two – then Kate’s love for Miles is not both constant and exclusive.¹

While we will concentrate below on the possibility of fission, note that similar problems are raised by the possibility of fusion – roughly speaking, of two people becoming one. In the recent television program *Star Trek: Discovery*, for example, Ash Tyler loves Michael Burnham, and Voq loves L’Rell. However, L’Rell performs surgery to create a hybrid of Voq and Tyler, with the physical appearance of the latter. L’Rell plans for the hybrid to behave like Ash at first (thus functioning as a disguise for Voq), but for Voq’s personality to take control when triggered by a verbal cue from her. But again not everything goes as planned, and the result is a single person who combines both Ash and Voq’s memories and personality.

On the face of it, this poses a problem for the constancy and exclusivity of Ash and Voq’s loves. Insofar as the surviving person is Voq, constancy commits him to loving L’Rell (moreover, it turns out they have a child together). But insofar as the surviving person is Ash, constancy commits him to loving Michael. Nevertheless, exclusivity requires the surviving person to love at most one of Michael and L’Rell. So if Ash and Voq’s misadventure is a case of fusion – roughly, of two people

¹Williams (1973, 80-1) and Parfit (1984, 293-6) discuss a similar case. Several variations on the theme of love and fission can be found in Herve Le Tellier’s recent novel *The Anomaly*. Love and personal identity generally are discussed by, for example, Lybaert (2009), Foster (2011) and Brogaard (2014, 96-9).

becoming one – then their love for Michael and L'Rell, unlike Penelope's love for Odysseus, cannot be both constant and exclusive. In general, if two lovers become one, then constancy commits them to continue loving both their beloveds, whereas exclusivity commits them to loving only one.

What can we conclude in general from these examples? A natural way to think about constancy and exclusivity is that they are essential features of love. According to this way of thinking, romantic love is necessarily constant, and so passion which fades with time is not truly love at all. Likewise, according to this way of thinking, romantic love is necessarily exclusive, and so it is simply impossible to love two people at the same time.² Notice that since essentiality requires metaphysical or conceptual necessity, the mere possibility of fission or fusion is enough to undermine the essentiality of constancy or exclusivity. So we argue for the conditional: if fission is possible, then constancy and exclusivity are not both essential features of love.

Another way to think of constancy and exclusivity is as obligatory, rather than essential, features of love. Although romantic love is neither necessarily constant nor necessarily exclusive, according to this way of thinking, it ought to be constant, and ought to be exclusive.³ In this case, we argue for the following conditional: if exclusivity and constancy are both obligatory features of love, then either fission is impossible or else moral dilemmas are possible. In this case, although Kate's feelings for both Old and New Miles, for example, may be genuine love, she still faces a moral dilemma – on the one hand she is required by constancy to love both, whereas on the other she is required by exclusivity to love only one.

Even if fission and fusion are confined to science fiction and fantasy, there are still lessons to draw for real romance. If even Penelope's love for Odysseus is not essentially constant and exclusive, then we cannot be too surprised when ordinary

²Soble (1987), for example, argues exclusivity is a necessary condition in the conceptual analysis of love. Jenkins (2015), who calls the thesis that love is necessarily exclusive “modal monogamy”, argues explicitly that exclusivity is not essential for love, while also pointing to widespread implicit support for this assumption.

³Jenkins (2015, 175), who calls the thesis that love *ought* to be exclusive “moral monogamy”, also denies that exclusivity is an obligatory feature of love, but this is not the main focus of her paper. McKeever (2017, 2020) discusses the morality of sexual exclusivity in detail. Liao (2007, 11) gives exclusivity as an example of a duty in romantic love, but his focus is more general. See also Carroll (n.d.) for a recent discussion of the ethics of infidelity.

people break up or disapproving when they have multiple partners. If Kate faces a moral dilemma in choosing between Old Miles and New Miles, then this shows that moral dilemmas are possible, and so we cannot be too surprised when real people face difficult choices in choosing between partners. Likewise, if it is possible for Kate to love Old Miles and New Miles, then it is possible for Kate to love two people. But if it is possible for her, it is possible for real people too.

Another lesson to be drawn concerns the question of whether we love for reasons.⁴ On the face of it, the constancy and exclusivity of love are in tension with having reasons for love.⁵ If Penelope loves Odysseus because he is wise, for example, then she may cease to love him when he is no longer wise, in which case her love would be inconstant. Moreover, if Penelope loves Odysseus because he is wise, then she would seem to have reason to accept suitors who are as wise or wiser, in which case her love may not be exclusive. This is a serious challenge to the reasons view of love. But if the possibilities of fission and fusion are independent reason to deny the constancy and exclusivity of love, then the challenge can be met more easily.

In Section 2 we distinguish four views on the metaphysics of fission and fusion, which bear differently on the constancy and exclusivity of love. The *identity-is-not-what-matters* and the multiple-occupancy views both allow that fission and fusion are possible, whereas the *non-branching* and *best-candidate* views both entail that they are not. We also distinguish the possibility of fission from the closely related possibility of mere duplication. We will agree with the conventional wisdom that one should not replace one's beloved with a mere duplicate, but argue that cases in which one's beloved undergoes fission are significantly different from this more widely discussed situation.

In Section 3 we discuss the formulation of constancy, distinguishing the strong and demanding *strict* and *life-long* constancy from the excessively weak but much more plausible *indefinite* constancy. We argue that even the weakest and so most plausible version is not immune to the problems raised by fusion and fission. We also discuss how constancy should be formulated on the survival-is-not-what-matters

⁴See, for example, Han (2021) for a recent discussion of this question.

⁵See especially Soble (2000). Delaney (1996), Brown (1997), Lamb (1997) and Keller (2000), for example, discuss similar issues, but not explicitly in terms of constancy and exclusivity.

view, and argue that considerations of personal-identity do little to reduce its demandingness. And we consider the cognate notion of unconditional love, and argue that although the range of possibilities under which unconditionality requires love is vague, it should be wide enough to include fission and fusion, in which case unconditionality faces similar problems to constancy.

In Section 4 we discuss the formulation of exclusivity, distinguishing the weaker notions of *timed* and *indefinite* exclusivity from the strong and demanding notions of *timeless* and *life-long* exclusivity. We argue that since timed exclusivity together with the relevant version of constancy entails the corresponding version of exclusivity, accepting even the weakest version of exclusivity does not escape the problems posed by fission and fusion. We also discuss how exclusivity should be formulated on the multiple-occupancy view, and show that the problem remains unresolved under this reformulation. And we compare exclusivity with irreplaceability. Finally, Section 5 concludes that fission and fusion cast doubt especially on exclusivity, and long-life on stricter versions of constancy.

2. FISSION

Whether fission is in fact possible is highly contested.⁶ In the introduction, we said that fission is – roughly speaking – one person becoming two. But according to classical logic, identity is permanent.⁷ If New Miles, for example, was ever identical to Old Miles, then he is always identical to Old Miles. The same goes for fusion, which we said in the introduction is – roughly speaking – two people becoming one. According to classical logic, if two people are not identical, then they must remain so forever. If Voq and Ash, for example, are not identical to begin with, no amount

⁶See, for example, Joaquin (2017) for a recent discussion.

⁷See, for example, Priest (2008, 374) for discussion of this point. On the other hand, we may adopt a non-classical tense logic, in which identity is not permanent (for which see, for example, Priest (2008, 367-83)). In this case, letting $[F]$ stand for ‘it will always be that’, $\langle F \rangle$ for ‘it will be that’ and L for ‘loves’, we can regiment constancy as $(\forall x)(\forall y)(Lxy \rightarrow [F]Lxy)$ and exclusivity as $(\forall x)(\forall y)(Lxy \rightarrow (\forall z)(Lxz \rightarrow z = y))$. Assuming constancy and exclusivity are true at all times, then even in the weakest normal tense logic K_t , even with impermanent identity, it follows that $(\forall x)(\forall y)(Lxy \rightarrow (\forall z)(y = z \rightarrow [F]y = z))$. So the identity of beloved people is still permanent, and the problems discussed here remain even under a nonclassical treatment of identity.

of surgery can make them so in the future. There are several ways to resolve this problem, which bear differently on the constancy and exclusivity of love.

According to the first way, identity is not what matters in survival.⁸ According to this view, we can admit that Miles is not strictly identical to either Old Miles or New Miles. But this does not matter, since Miles survives as Old Miles, and also survives as New Miles. The logic of survival is not the same as the logic of identity, and so saying this does not force us to say that New Miles survives as Old Miles, or vice versa. So on the *identity-is-not-what-matters view*, fission is possible, and occurs when one person survives as two distinct people. (Mutatis mutandis, fusion is possible, and occurs when two people survive as one person).

According to the second, known as the *multiple-occupancy view*, identity is what matters in survival, but distinct people may occupy the same body.⁹ According to this view, Old Miles and New Miles are distinct not only after the experimental therapy, but also before. But before the therapy, both Old Miles and New Miles occupied a single body, whereas afterwards they occupied two distinct bodies. So on the multiple-occupancy view, fission is possible, and occurs when two people occupy a single body, but later occupy distinct bodies. (Mutatis mutandis, fusion

⁸See, for example, Parfit (1971) and Parfit (1984, 245-80). Except in this footnote, we won't explicitly consider the stage theory or exdurantism, according to which things do not exist at more than one time, but persist by having counterparts at other times (Sider, 1996, 2001; Hawley, 2001; Balashov, 2007). But since on this view to survive is to have a counterpart at a later time, and since the counterpart relation is not identity, allowing things to stand in it to more than one thing existing at the same later time, the same points we apply to the survival-is-not-what-matters view apply equally well to the stage-theory or exdurantism, and so it is implicitly included. Alternatively, we can think of the counterpart relation as providing a non-classical semantics for identity proper, in which case the issues are parallel to those addressed in footnote 7.

⁹Lewis (1976) defends a version of the multiple occupancy view which presupposed perdurantism, according to which persistence through time involves having distinct temporal parts at different times. Fission occurs when two things have all the same temporal parts at one time, but distinct temporal parts at a subsequent time. Robinson (1985) develops a version of the multiple occupancy view which is compatible with endurantism, according to which things persist by being wholly present at different times, but may be constituted by different material bodies. Fission occurs when two things are co-constituted at one time, but not at a later time. See also Miller (2006, 39-41) for discussion of this approach to fission. Joaquin and Biana (2021) give a perdurantist account of the relation of love, but we stay neutral on this issue here. See also Sinhababu (2008), who discusses love in the context of Lewis' modal realism.

is possible, and occurs when two distinct people initially occupy distinct bodies, but later occupy the same body.)

According to the third, known as the *non-branching view*, identity is what matters in survival, but one does not survive if one is psychologically continuous with more than one person.¹⁰ According to this view, Miles is not identical to, and does not survive as, either Old Miles or New Miles. If Miles had not undertaken the therapy, he may have survived in his original body, as he would have been psychologically continuous with only one person. Likewise, if Miles' original body had been properly disposed, he may have survived in New Miles' body. But as it happened, according to the non-branching view, Miles does not survive at all, and the therapy resulted in his premature death. So by design, the non-branching view entails both fission and fusion are impossible.

According to a fourth way, known as the *best-candidate* or *closest-continuer* view, a person survives as, and is identical to, only the future person who has the best claim to be them.¹¹ According to this view, Miles survives as Old Miles, but not New Miles, since after the therapy Old Miles – being both physically and psychologically continuous with Miles – is the best candidate to be Miles. However, had Miles' original body being properly disposed, then Miles would have survived as New Miles, who would have been the best candidate. But, in contrast to the non-branching view, in neither case does Miles fail to survive the therapy.

Nevertheless, the best candidate view gives similar verdicts to the non-branching view in other cases, when there is an exact tie for best candidate or closest continuer (Nozick, 1981, 34).¹² Suppose, for example, that Miles' original body was properly destroyed, but he was also cloned twice. In that case, the claims of both clones to be Miles would be equally good, and so neither would have been the best candidate. It follows, according to the best candidate view, that Miles would not have survived the therapy. It follows also that the best candidate view is incompatible with the possibility of fission (and *mutatis mutandis* for fusion).

¹⁰The non-branching view is discussed but not endorsed by Parfit (1984, 267). The precise formulation of the view is tricky – see Gustafsson (2019) for a recent discussion.

¹¹See Nozick (1981, 29-70).

¹²See Miller (2006, 38) for a similar point.

This is far from an exhaustive taxonomy of positions on the possibility of fission and fussion. But any account will have to involve an interaction between a diachronic relation R and a synchronic relation S , each of which may or not be identity. In the case of the identity-is-not-what-matters view, for example, S is identity but R is not. In the case of the multiple occupancy view, R is identity but S is not.¹³ On any view, fission occurs when things standing in the synchronic relation S at one time stand in the diachronic relation R to things not standing in relation S at a later time.

Finally, it will be useful below to distinguish between fission and mere duplication.¹⁴ Let us say a *duplicate* of a person is someone who shares many of their intrinsic properties, and an *exact duplicate* is someone who shares all of their intrinsic properties. So on any view New Miles is a duplicate of Miles. New Miles, on the other hand is not an exact duplicate, since he has better eyesight and memory than Miles did. But if New Miles had not been provided with these enhancements, but instead had been created so as to be exactly the same as Miles, then he would have begun as an exact duplicate of Miles, differing only in extrinsic properties such as his location and history.

Let us also say that someone is a *mere duplicate* of a person if they are a duplicate who is not identical to or a survivor of that person (or more generally, does not stand to them in the relation R). Then whether a duplicate is a mere duplicate depends in part on which account of fission is correct. According to the survival-is-not-identity view, for example, although New Miles is a duplicate of Miles, he is not a mere duplicate, because he is a survivor of Miles. On the other hand, according to the best candidate theory, New Miles is a mere duplicate of Miles, because he is a duplicate of Miles, but he is neither identical to nor a survivor of Miles. What Miles' therapy teaches us about love depends in part on whether we think of it as a case of fission or mere duplication.

¹³According to Lewis (1976), for example, S is mereological coincidence of temporal parts, whereas according to Robinson (1985) it is co-constitution.

¹⁴Puccetti (1980, 586), for example, distinguishes between fission and duplication, although as he saves the word "fission" for cases of brain bisection, he would regard the case of Miles as an example of duplication only. See also Sidelle (2000) for discussion of fission and duplication.

So it is unfortunate that in much discussion of the issue, most writers on love have focused on cases of mere duplication rather than fission. In a recent overview, Aaron Smuts (2014, 520), for example, writes:

If what justified starting and continuing to love your beloved were her intrinsic properties, then it would be irrational to refuse an exact duplicate. Although it may be confusing and perhaps initially comforting to have access to a clone of your dead beloved, there is something disconcerting about the idea. Consider the situation from the perspective of the beloved. If your lover would warmly embrace a clone of you, this would give you excellent reason to think that he does not really love you.

Here, Smuts is assuming that your clone would not *be* you or, to put in terms of the identity-is-not-what-matters view, that you do not survive as your clone.¹⁵

On views according to which fission is impossible, such as the non-branching view and the best candidate view, it's natural to focus on mere duplication, since on those views putative cases of fission are at best cases of mere duplication. Even on views according to which fission is possible, such as the identity-is-not-what-matters and multiple occupancy views, mere duplication may be possible as well.¹⁶ Whether Miles' therapy in *Living with Yourself*, for example, is a case of fission or duplication is debatable, not just for philosophical reasons, but also because various details of the story militate in different directions. Nevertheless, our primary interest in this paper is in cases of fission proper, rather than cases of mere duplication.

3. CONSTANCY

Roughly speaking, constancy requires that if someone loves another, they continue to love them. But this rough requirement can be explicated in various ways, some of which are unreasonably strong and over-demanding, and others of which are if anything too weak to capture the intuitions in constancy's favour. Moreover, on the survival-is-not-what-matters view, the formulation of constancy requires special

¹⁵Grau (2010, 251), Milligan (2013) and Grau (2014) adopt a similar approach.

¹⁶So we can agree with Smuts (2014, 520) about his interpretation of the *Black Mirror* episode "Be Right Back", as well as with Milligan (2013) and Grau (2014) about their interpretation of Stanislaw Lem's novel *Solaris*, since these are plausibly cases of mere duplication.

care. But be this as it may, we argue in this section that no reasonable formulation of constancy escapes the problems with fission and fusion, and so any fault must lie not in the details of formulation, but in the underlying intuitions.

According to *strict constancy*, if a person loves another, then the former loves the latter at all future times (at which the former is able).¹⁷ Consider, for example, Gabriel García Márquez’ novel *Love in the Time of Cholera*. In the novel, Florentino Ariza’s love for Fermina Daza satisfies strict constancy, since he loves her from adolescence for the rest of his life. In contrast, Fermina Daza’s love for her husband Dr Juvenal Urbino does not satisfy strict constancy, since Fermina loves Dr Urbino only until his death after which (spoiler alert) she finally resumes her romance with Florentino, and they live happily ever after.

Strict constancy is arguably too strict – since, for example, Fermina falls in love with Florentino again only when Dr Urbino is dead, it is plausible that – contrary to strict constancy – she was no longer committed to loving Dr Urbino. In general, by requiring love to continue even after the death of the beloved, strict constancy seems too strict. This suggests the somewhat weaker condition of *lifelong constancy*, according to which if a person loves another, then the former loves the latter at all future times at which the former is able and the latter is alive.¹⁸ Fermina’s love for Dr Urbino does satisfy lifelong constancy, for example, since she does love him from their marriage until his death.

On views according to which Miles does not survive his therapy – such as the non-branching view – strict constancy requires that Kate continues to love Miles, but it does not require her to love either New Miles or Old Miles. Moreover, on views according to which Miles does not survive his therapy, such as the non-branching view, lifelong constancy does not require even that Kate continue to love Miles, and so certainly does not require her to love either New Miles or Old Miles. Although

¹⁷See Soble (1990, 206), Soble (2000, 294) and Soble (2008, 173). We say when the lover is able, since the lover may not be required to love when they are, for example, dead, comatose or otherwise incapacitated (Soble, 1990, 207).

¹⁸Soble redefines “strict constancy” to mean what we are calling “lifelong constancy”, but we prefer to have names for both notions. See Soble (1990, 207), Soble (2000, 294), Soble (2008, 174) and Halwani (2010, 50). Martin (1993) defends lifelong constancy as a virtuous feature of love in the context of marriage, whereas Nolan (2015) argues temporary marriage is permissible. See Ben-Ze’ev and Krebs (n.d.) for a recent discussion of the longevity of love.

this result is consistent with the letter of strict and lifelong constancy, we think it inconsonant with their spirit. In particular, the intuition behind constancy is that one loves one's beloved come what may – and this should include Miles' therapy.¹⁹

Recall that on the best-candidate or closest-continuer view, on the other hand, Miles survives his therapy as Old Miles but not as New Miles. In this case, both strict and lifelong constancy require that Kate love Old Miles after the therapy, but neither requires that she should love New Miles, who in this case is a mere duplicate. But suppose that Miles' therapy had gone as planned. Then New Miles would have been the best candidate or closest continuer, and so strict and lifelong constancy would have required Kate to love New Miles. It's not in accordance with the spirit of constancy that this requirement should disappear, merely because of the existence of Old Miles. In any case, the best-candidate view faces exactly the same problem as the non-branching view in the case where Miles is cloned twice.

In his discussion of constancy, Alan Soble suggests introducing a notion of constancy he takes to be weaker and less demanding than strict or lifelong constancy, and which explicitly addresses matters of personal identity:

A different assumption about *Y*'s identity yields another definition: *identity constancy*. On this view, if a person loves someone, the love will continue as long as the beloved remains morally and psychologically the same person. This definition does not require *X* to love *Y* if *Y* has undergone a change of identity and has become *Z*, where *Z*'s body is causally continuous with *Y*'s yet *Z*'s character is drastically different from *Y*'s (Soble, 2008, 175).²⁰

In the *Star Wars* films, for example, Anakin Skywalker's personality is significantly different from Darth Vader's, even though Darth inhabits the same body that Anakin did. So even though Padmé Amidala loves Anakin, identity constancy may not require her to also love Darth.

In assuming that strict or lifelong constancy comes apart from identity constancy, Soble implies that they are tied to a bodily conception of personal persistence. Since Darth inhabits a body which is continuous with Anakin's, for example, Soble

¹⁹Compare Parfit (1984, 295-6)

²⁰See Brogaard (2014, 99) for a similar point.

assumes that strict and lifelong constancy does require that since Padmé loved Anakin, she also love Darth. However, nothing in the formulation of strict constancy forces this interpretation. Nor does anything in the formulation of lifelong constancy, unless we interpret “alive” in bodily terms, which we do not have to do – if Darth’s personality is too different from Anakin’s, for example, then we may take it that Anakin has died, even while his body remains biologically alive.

For this reason, we take the qualifications Soble introduces under the heading of identity constancy to be already implicit in the formulations of strict and lifelong constancy. Nevertheless, we agree with Soble that considerations about personal persistence matter when considering who constancy commits one to love. Soble is right, for example, that considerations of personal persistence may help to mitigate the demanding nature of strict or lifelong constancy – strict or lifelong constancy, for example, demand less of Padmé if they do not require her to love Vader. In general, the more stringent the criteria for personal identity or persistence, the less stringent are strict and lifelong constancy.

On the identity-is-not-what-matters view in particular, constancy should be formulated in terms of survival and not identity. Thus, according to constancy on the identity-is-not-what-matters view, if a person loves another, then they love anyone who is a survivor of that person (or in other words, anyone who stands in the relation R to that person). So on the identity-is-not-what-matters view, since Kate loves Miles before his therapy, and after the therapy Old Miles is a survivor of Miles, constancy requires Kate to love Old Miles after the therapy. But also on the identity-is-not-what-matters view, since Kate loves Miles before his therapy, and after the therapy New Miles is also a survivor of Miles, constancy also requires Kate to love New Miles after the therapy.

Even taking these qualifications concerning personal persistence into account, there are still cases where survival constancy may be extremely demanding. Consider Methuselah, whose body dies at age 969. Methuselah survives many psychological changes, but let us suppose that after each 137 years, the changes are sufficiently great that he does not survive, so that his 50 year old self, for example, does not survive to be 188 years old, but his 52 year old self does.²¹ Then if

²¹The example is adapted from Lewis (1976, 65-67).

Methuselah's wife Edna loves Methuselah when he is 50 years old, lifelong survival commits her to also loving him when he is 187. But then since his 187 year old self survives until 324 years, survival constancy would commit her to loving his 324 year old self, ... and so on, until she is committed to loving his 969 year old self.

So the formulations of constancy discussed so far are all still highly demanding. A much weaker condition is *indefinite constancy*, according to which if a person loves another, then the former continues or has continued to love the latter for at least some time.²² Fermina's adolescent passion for Florentino, for example, continues long enough to include a secret engagement, and so easily satisfies indefinite constancy. So indefinite constancy is if anything not demanding enough – even the most fleeting liaisons detailed in Giacomo Casanova's *History of My Life*, for example, are long enough to satisfy indefinite constancy, but even some of the longest could hardly be described as constant in any plausible sense.

Nevertheless, when a beloved person undergoes fission, even indefinite constancy requires their lover to continue to love both products of fission, so long as the time in which fission occurs is less than the indefinite time for which constancy is required. Suppose, for example, that indefinite constancy requires Kate to love Miles for no more than a week. Nevertheless, if Miles' therapy occurs within that week, then insofar as strict or lifelong constancy required that Kate continue to love both Old Miles and New Miles, indefinite constancy will still require Kate to love both Old Miles and New Miles at least until the end of the week. So if fission is possible, even the weakest version of constancy sometimes requires one person to love two.

A condition closely related to constancy is *unconditionality*, according to which if a person loves another, then the former loves the latter no matter what.²³ Unconditionality entails strict constancy, since if someone loves another no matter what, then the former will love the latter no matter how much time passes. But even strict constancy does not entail unconditionality, since it may be that somebody loves another forever, but only because the conditions under which they would stop

²²See Soble (1990, 209), Soble (2008, 175) and Halwani (2010, 50).

²³See, for example, Halwani (2010, 51-2) and Brogaard (2014, 99-101). Jollimore (2023) discusses the relationship between constancy and unconditionality.

loving them happen to never come about. Unconditionality does not plausibly require love under absolutely all possibilities, but restricting it to only some would leave its application vague. So for the sake of clarity, we have focused on constancy.

Be this as it may, the mere possibility of fission, so long as it is within the range of possibilities under which unconditionality requires love, is enough to show that unconditional love is incompatible with the essentiality of exclusivity. If Penelope's love for Odysseus, for example, were necessarily exclusive, then it could not be unconditional, since in possibilities under which Odysseus undergoes fission, exclusivity would require her to love only one product, whereas unconditionality would require her to love both. Moreover, given that Penelope's love is expected to be constant through many of Odysseus' adventures which are almost as strange as fission, it seems it ought to be within the range of possibilities under which unconditionality requires love. So if love is unconditional, it is not essentially exclusive.²⁴

4. EXCLUSIVITY

Roughly speaking, exclusivity requires loving only one person. But as for constancy, this rough requirement can be explicated in various ways, resulting in some versions which are strong and over-demanding, and others which are relatively weak. Moreover, whereas the formulation of constancy requires special care on the survival-is-not-what-matters view, the formulation of exclusivity requires special care on the multiple-occupancy view. Nevertheless, we argue in this section that as for constancy, no reasonable formulation of exclusivity escapes the underlying problems posed by fission and fusion, so again the fault lies with the intuitions underlying constancy and exclusivity, and not with details of their formulation.

According to *timed exclusivity* if someone loves a person at a time, then they love only that person at that time.²⁵ Fermina's love for Dr Urbino, for example, is timed exclusive, since while she loves him she loves only him. But Florentino's love for Fermina, if it is love at all, does not always satisfy timed exclusivity,

²⁴Some authors, such as Delaney (1996, 348-53) and Lamb (1997), frame their discussion in terms of *commitment* rather than constancy. As for unconditionally, the conditions under which a lover is committed to their beloved are vague, but insofar as those conditions are still met when fission occurs, similar issues arise as for constancy.

²⁵See Soble (1990, 169), Soble (2000, 302), Soble (2008, 163) and Halwani (2010, 47).

since there are times when he loves Fermina but he also loves Sara Noriega (who stands out amongst many less serious liaisons which debatably do not amount to love). Nevertheless, timed exclusivity is not nearly so stringent as strict or lifelong constancy – even Fermina’s adolescent passion for Florentino, for example, satisfies timed exclusivity, since during her adolescence Fermina loves no-one other than Florentino. This motivates considering the stricter condition of timeless exclusivity.

According to *timeless exclusivity*, if someone loves a person at a time, then they love only that person at all times.²⁶ Penelope’s love for Odysseus satisfies timeless exclusivity, since she never loves anyone other than Odysseus. But Fermina’s love for Florentino does not satisfy timeless exclusivity, since there are times when she loves Dr Urbino. And nor does her love for Dr Urbino, since there are times when she loves Florentino. So like strict constancy, timeless exclusivity is extremely demanding – it requires that each person may only ever love one other, for all time. So just as we did for constancy, we need to consider intermediate notions.

But before we proceed, note that timeless exclusivity is entailed by timed exclusivity and strict constancy. For suppose the antecedent of timeless exclusivity – that x loves y at time t . From timeless exclusivity, x loves only y at time t . Now consider a time s before t , and suppose for reductio that x loved someone z other than y at time s . From strict constancy, x loves z at all times after s , so x loves z at t , contradicting that x only loves y at t . Therefore, x loves only y before t . Also, since x loves y at t , it follows from strict constancy that x loves y at all times after t . But then it follows from timed exclusivity that x loves only y at all times after t . So x loves only y at all times both before and after t , thus establishing the consequent of timeless exclusivity.

Corresponding to each intermediate conception of constancy is an intermediate conception of exclusivity. In particular, corresponding to lifelong constancy, we have *lifelong exclusivity* according to which if someone loves another, then the former loves only the latter at all times at which the latter is alive. Just as Fermina’s love for Dr Urbino satisfies lifelong constancy, it satisfies lifelong exclusivity, since from the time of their marriage, Fermina loves only Dr Urbino until his death. Just as timed exclusivity and strict constancy entail timeless exclusivity, timed

²⁶See Soble (1990, 170), Soble (2000, 302), Soble (2008, 162) and Halwani (2010, 47).

exclusivity and lifelong constancy entail lifelong exclusivity – that Fermina loves only Dr Urbino until his death follows from the fact that she loves him until his death, and the fact that while she loves him she loves him alone.

Likewise, corresponding to indefinite constancy is *indefinite exclusivity*, according to which if someone loves another, then the former continues or has continued to love only the latter for at least some time. Like indefinite constancy, indefinite exclusivity is if anything too weak – like indefinite constancy, for example, indefinite exclusivity is comfortably satisfied by many of Casanova’s briefest liaisons. As Soble sums up the situation, “Is there not a point at which the sheer number of serial loves (even if bracketed) implies that not all these instances are love? We might try to put a limit on the number of loves by requiring that ... any bracketed love last some minimum amount of time ... the idea of timed exclusivity is to be patched up by the idea of constancy – but that concept is no less fuzzy” (1990, 171).

Although less demanding than timeless exclusivity, indefinite exclusivity does not help with the problem at hand. So long as Miles’ therapy occurs in less than the indefinite time required for indefinite exclusivity and constancy, indefinite constancy would still require Kate to love both Old Miles and New Miles for at least sometime afterwards, whereas indefinite exclusivity would still require her to love only one of them for at least sometime afterwards. In general, no matter how short a time exclusivity and constancy are required for, as long as it is possible for fission to occur in less than that time, then it will be possible for indefinite constancy and exclusivity to come into conflict with each other.

Just as constancy has to be formulated carefully on the identity-is-not-what-matters view, exclusivity has to be formulated carefully on the multiple occupancy view. Recall that according to the multiple occupancy view, Old Miles and New Miles were distinct even before the therapy, but occupied the same body. In that case, it seems that before the therapy, Kate loved both Old Miles and New Miles. But intuitively, Kate’s love for both Old Miles and for New Miles before the therapy should not be counted as a violation of exclusivity. Thus, according to timed exclusivity on the multiple occupancy view, if a person loves another at a time, then they do not love anyone not inhabiting the same body at that time.

However even if exclusivity is reformulated in this way, it still forbids Kate from loving both Old Miles and New Miles after the therapy, when they no longer occupy the same body. But on the multiple occupancy view, since Kate loves Old Miles before the therapy, constancy requires her to love Old Miles after the therapy. And on the multiple occupancy view, since Kate loves New Miles before the therapy, constancy requires her to love New Miles after the therapy. So even on the multiple occupancy view, Kate's love for Miles cannot be both constant and exclusive.

It might be objected that according to the view that personal persistence is a matter of survival, rather than identity, Kate's love for Miles is exclusive even after his therapy, since she only loves Miles' survivors. However, this response overlooks that when she loves New Miles, as constancy requires her to do, exclusivity commits her to only loving survivors of New Miles. But since Old Miles is not a survivor of New Miles, this forbids her from loving Old Miles, even while constancy requires her to. Likewise, when she loves Old Miles, exclusivity forbids her from loving New Miles. So it's not the exclusivity of Kate's initial love for Miles which is problematic, but the exclusivity of her subsequent loves of Old Miles and New Miles.

A condition closely related to exclusivity is *irreplacability*, according to which a lover should not replace their beloved with another person, no matter how similar.²⁷ Florentino's love for Fermina, for example, satisfies irreplacability, since Florentino's love cannot be satisfied by any person other than Fermina. Irreplacability does not entail exclusivity – Florentino's love for Fermina, for example, satisfies irreplacability even though it is not exclusive, since although Florentino also loves Sara, Sara does not replace Fermina in his affections. But timeless exclusivity arguably entails irreplacability, since if someone is committed to loving the same person at all times, they are committed not to replacing them either.

Since irreplacability does not entail exclusivity, irreplacability is arguably compatible with Kate loving both Old Miles and New Miles after the therapy, so long as New Miles does not replace Old Miles in her affections – and whether this is so is difficult to adjudicate, again because various details of the story militate in different directions. Moreover, and for the same reason, irreplacability is arguably

²⁷See, for example, Soble (2000, 300-2), Grau (2004), Mooney (2002), Soble (2008, 168-73), Grau (2010), Brogaard (2014, 91-4), Kadlac (2012), Grau (2014), Smuts (2014, 520), Bagley (2015), Naar (2021) and Diez and Iacona (2021).

compatible with love of a mere duplicate, as long as the mere duplicate is not a replacement. But whether a beloved person is a replacement for a previous lover is in general a difficult question to adjudicate, dependent on details of the relationship in question. So for the sake of clarity, we have focused on exclusivity.

5. CONCLUSION

We have argued that if fission is possible, then constancy and exclusivity are not both essential features of love. So supposing one accepts the possibility of fission, one must deny the essentiality of either exclusivity or constancy. We think the case of Kate and Miles supports at least denying the essentiality of exclusivity, since we think that in the story Kate does love both Old Miles and New Miles, and so the story shows that it is possible for one person to love two. Since Kate does continue to love both Old Miles and New Miles, the case throws less doubt on the essentiality of constancy. But the example of Edna and Methuselah also gave us reason to doubt the essentiality of strict and life-long constancy.

We also argued that if exclusivity and constancy are both obligatory features of love, then either fission and fusion are impossible or else moral dilemmas are possible. In the case of Kate and Miles, it's natural to see Kate as facing a situation in which she has conflicting obligations, and so cannot do what she ought (and likewise for the case of Voq and Ash Tyler). But the denouement hints at the possibility of the three living happily together, in which case one may wish to deny that exclusivity is obligatory. Likewise, insofar as Edna may do nothing wrong in leaving Methuselah, stricter versions of constancy are not obligatory.

We close with another story of love, fission and fusion. In Italo Calvino's *The Cloven Viscount*, the Viscount Medardo of Terralba's body is divided in two by a cannon-ball. Miraculously, surgeons are able to save both halves of Medardo's body. The left half becomes known as *Gramo*, because he is entirely vicious. The right becomes known as *Buono*, because he is entirely virtuous. Both halves return to Terralba, where they each fall in love with Pamela. She agrees separately to marry each, and gives both the same time for the wedding. The two halves duel,

but just happen to slice open their original wounds, allowing a quick-minded doctor to sew them back into a single person. The married couple live happily ever after.²⁸

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²⁸We’re grateful to Guillermo Badia, Andrew Bailey, Zach Barnett, David Braddon-Mitchell, Deborah Brown, Jordi Fernandez, Yongming Han, Eugene Ho, Joel Katzav, Malcolm Keating, Julian Lamont, Jane Loo, Neil Mehta, Daniel Nolan, Michael Pelczar, Abelard Podgorski, Neil Sinhababu, Kim Sterelny, Saranindranath Tagore, Joshua Thong and Weng-Hong Tang, as well as audiences at the National University of Singapore, the University of Queensland and the New Zealand Association of Philosophy for discussion of this paper. This paper was part of our Metaphysics of Humanity project, supported by a grant from the Ministry of Education, Singapore, grant number A-0003057-00-00.

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