Reactive Loops and Normative Indeterminacy

Please cite the version published in Analysis: https://doi.org/10.1093/analys/anae027

Jonas Werner

jonas.werner@unibe.ch

Temporal loops in which two agents are involved in a circle of reactive attitudes create a puzzle concerning who harms whom. I argue that this puzzle, which has been developed by Stephen Kearns in a recent paper in *Analysis*, should be solved by accepting that the situation involves normative indeterminacy. A supervaluationist treatment of this indeterminacy allows to maintain that the normative supervenes over the non-normative and that the involved agents are in normatively symmetric situation. It further allows to maintain that it is determinately the case that one agent wrongs the other just in case the latter does not wrong the former. I conclude by tentatively arguing that the indeterminacy involved should not be understood as semantic and that the puzzle provides us with a novel case of indeterminacy in reality.

Keywords: Normative Indeterminacy, Reactive Attitudes, Supervaluationism, Temporal Loops

1 Introduction

Stephen Kearns develops a puzzle concerning the following story:

> ‘At time t', Dawn reprimands Jennifer, for reasons soon to be divulged. Dawn leaves, but the next time Jennifer sees her, at t^*, Jennifer reprimands Dawn in reaction to being thus reprimanded. Jennifer then leaves. The next time Dawn sees Jennifer, she reprimands Jennifer in reaction to being thus reprimanded. But here’s the twist: Dawn’s reprimand of Jennifer is the same reprimand with which we started this story (the one at time t'), because Dawn and Jennifer exist within a temporal loop – a closed timelike curve in which t' rests in both the future and the past of t^* (and vice versa). In essence, each reprimand is given in response to the other.’ (Kearns: 55)

The puzzle consists in the following claims both seeming plausible:

(Wronging-Sameness (WS)) Jennifer wrongs Dawn iff Dawn wrongs Jennifer.

(Wronging-Difference (WD)) Jennifer wrongs Dawn iff Dawn does not wrong Jennifer.

(WS) and (WD) are clearly inconsistent, for they allow to derive that Dawn wrongs Jennifer iff Dawn does not wrong Jennifer (by the transitivity of the biconditional). Kearn’s case for (WD) is based on the idea that x reprimanding y for y reprimanding x is a case of x wronging y just in case y did not wrong x by reprimanding them. If Dawn does not wrong Jennifer, then Jennifer plausibly wrongs Dawn by reprimanding her (this is Kearns (WD<)). If Jennifer wrongs Dawn by reprimanding her, then Dawn does not wrong Jennifer by reprimanding her (this is Kearns (WD>)). The latter claim is supported by ‘the idea that certain negative treatments, such as reprimand, are fitting as a response to being wronged by that very treatment’ (Kearns: 56). Kearns makes clear that the claim is merely existential, it only says that some treatment is fitting as a response to being wronged by that very treatment. I agree with Kearns that this is very plausible.

I propose to give up (WS). The main reason to uphold (WS) seems to be the symmetry of the situation. To put it with Kearns, ‘[t]here seems nothing to separate Jennifer and Dawn in any normative respect because there is nothing to separate them in any non-normative respect’ (Kearns: 56). Kearns holds that there is no way to deny (WS) without also denying that the normative supervenes on the non-normative. I disagree. Both the claim that the normative supervenes on the non-normative and the claim that the situations of Dawn and Jennifer are symmetric (in a relevant sense to be specified) can be upheld while denying (WS). The crucial ingredient of my proposal is the claim that it is indeterminate whether Dawn wrongs Jennifer or Jennifer wrongs Dawn.

2 Supervaluationist Normative Indeterminacy

I propose to understand the situation as a case of normative indeterminacy and I argue that the arising indeterminacy can be plausibly modelled along supervaluationist lines. Before going into details, I will informally motivate the idea that the case involves normative indeterminacy with an argument based on the following three premises:

(1) Jennifer determinately wrongs Dawn only if Jennifer was the first one who reprimanded the other.

(2) In Kearns' story it is not the case that Jennifer was the first one who reprimanded the other.

(3) Jennifer wrongs Dawn or Dawn wrongs Jennifer.

Premise (1) says that in cases where two persons reprimand one another for reprimanding one another and for nothing else, there is a fact of the matter concerning who wrongs whom only if someone initially set the reprimanding-cascade into motion by being the first one who (falsely) reprimands the other for reprimanding. Premise (2) is supported by the observation that in Kearns' story no one sets the cascade into motion by falsely reprimanding the other. Premise (3) says that in a reprimanding-cascade someone wronged the other. The claim that (3) fails and no-one wronged the other is unstable, as reflecting on (WD) shows. Assuming that Jennifer does not wrong Dawn immediately leads to the conclusion that Dawn wrongs Jennifer and *vice versa*.

The three premises motivate a solution involving indeterminacy as follows: By (1) and (2) we can conclude that Jennifer does not determinately wrong Dawn. Analogously we can conclude that Dawn does not determinately wrong Jennifer. Let '$\triangle$' be an operator that expresses 'it is determinately the case that', let 'J' stand for 'Jennifer wrongs Dawn' and let 'D' stand for 'Dawn wrongs Jennifer'. From (1) and (2) (and their analogues concerning Dawn) we get $\neg \triangle J$ and $\neg \triangle D$.

To say that it is not indeterminate whether A holds is tantamount to saying $(\triangle A) \vee (\triangle \neg A)$ (i.e., that either A or its negation hold determinately). Consequently, if someone accepts $\neg \triangle J$ and $\neg \triangle D$ and tries to uphold that the situation involves no indeterminacy, then they have to also accept $\triangle \neg J$ and $\triangle \neg D$. Assume $\triangle \neg J$ and $\triangle \neg D$. Given that the determinate is closed under conjunction (i.e., that the schematic rule $\triangle A, \triangle B \vdash \triangle(A \wedge B)$ holds), we can conclude $\triangle(\neg J \wedge \neg D)$. Given that the determinate is closed under logical entailment, we get (by De Morgan's laws) $\triangle \neg(J \vee D)$. This contradicts (3), for even on the least demanding reading, (3) gives us that it is not determinately not the case that Jennifer wrongs Dawn or Dawn wrongs Jennifer. If we accept that (1) and (2) give us $\neg \triangle J$ and $\neg \triangle D$ and that (3) gives us that at least one of $\neg \triangle \neg J$ and $\neg \triangle \neg D$, the situation has to involve some indeterminacy.

I will propose a supervaluationist solution. Supervaluationism is a popular way to model semantic indeterminacy (see e.g. Keefe for discussion) that is based on distinguishing admissible precisifications of predicates. For example, there might be an admissible precisification of 'is a heap' on which every agglomeration of at least 100 grains of sand counts as a heap and another one on which only agglomerations of more than 200 grains of sand count as heaps. According to a supervaluationist semantics, a sentence is determinately true (or supertrue) iff it is true on all admissible precisifications and indeterminate iff it is true on some but not all admissible precisifications. Let Heapy be an agglomeration of 197 grains of sand. Given the above exemplary admissible precisifications, 'Heapy is a heap' turns out to be indeterminate. One of the main selling points of supervaluationism is that it allows to uphold the law of non-contradiction and the law of excluded middle. Every precisification has it that either Heapy is a heap or it is not the case that Heapy is a heap and on no precisification Heapy is a heap and not a heap. Supervaluationism yields all instances of the schemata

$$(EM) \ \triangle A \vee \neg A \ \ (NC) \triangle \neg(A \wedge \neg A)$$

It has been suggested (see e.g. Barnes and Williams) to treat not only semantic, but also metaphysical indeterminacy along supervaluationist lines. I argue that Kearns puzzle is a case of supervaluationist normative indeterminacy (and I will motivate that it should not be understood as a case of semantic indeterminacy below).[1] As it is witnessed by (WD), there are two mutually exclusive ways to normatively precisify the situation: Either Jennifer wrongs Dawn or Dawn wrongs Jennifer (but not both). Given the symmetry of the situation (which seems to motivate (WS)), none of these normative precisifications is superior to the other.

On the resulting picture it is determinately the case that Jennifer wrongs Dawn iff Dawn does not wrong Jennifer, for both precisifications agree that only one of them wrongs the other (although they disagree about who wrongs whom). This gives us that (WD) determinately holds. It is furthermore determinately false (i.e., determinately not the case) that Jennifer wrongs Dawn iff Dawn wrongs Jennifer. This gives us the determinate falsity of (WS). The normative situations of Dawn and Jennifer are still symmetric as it is witnessed by the following principles, in which 'ϕ[Jennifer $\Leftrightarrow$ Dawn]' stands for the result of simultaneously[2] replacing every occurrence of 'Jennifer' with 'Dawn'

[1]See Dougherty for a defence of normative indeterminacy.

[2]It is important that the replacement is done simultaneously rather than in successive steps. The result of simultaneously replacing every occurrence of 'Jennifer' with 'Dawn' and every occurrence of 'Dawn' with 'Jennifer' in 'Jennifer wrongs Dawn' is 'Dawn wrongs Jennifer', whereas the result of first replacing every occurrence of 'Jennifer' with 'Dawn' and then replacing every occurrence of 'Dawn' with 'Jennifer' in 'Jennifer wrongs Dawn' is 'Jennifer wrongs Jennifer'. In the given case the replacement can be informally described as switching 'Dawn' and 'Jennifer' (which is reflected in my

and every occurrence of 'Dawn' with 'Jennifer' in ϕ:

(Symmetry-D) If it is determinately the case that ϕ, then it is determinately the case that ϕ[Jennifer $\Leftrightarrow$ Dawn].

(Symmetry-ID) If it is indeterminate whether ϕ, then it is indeterminate whether ϕ[Jennifer $\Leftrightarrow$ Dawn].

These two symmetry-principles are guaranteed to hold by the two precisifications of the normative situation being mirror-images of one another in the following sense:

(Mirror) If ϕ (e.g. 'Jennifer wrongs Dawn') holds on a given precisification and ϕ[Jennifer $\Leftrightarrow$ Dawn] (e.g. 'Dawn wrongs Jennifer') does not hold on this precisification, then the other precisification is such that ϕ[Jennifer $\Leftrightarrow$ Dawn] holds on it and ϕ does not.

To see that this yields (Symmetry-D) assume for contradiction that ϕ determinately holds and that ϕ[Jennifer $\Leftrightarrow$ Dawn] does not determinately hold. The supervaluationist semantics yields that in this case on one precisification ϕ holds and ϕ[Jennifer $\Leftrightarrow$ Dawn] does not. By (Mirror), on the other precisification ϕ does not hold. By the supervaluationist semantics, this contradicts the assumption that ϕ determinately holds. (Symmetry-ID) directly follows, given that it being indeterminate whether A holds can be defined as $\neg((\triangle A) \vee (\triangle\neg A))$.

The situation is also compatible with a relevant supervenience-claim concerning the relation between the non-normative and the normative, or so I will argue. One might think that the supervenience of the normative over the non-normative fails if the present proposal is adopted and all non-normative truths hold determinately. Let P stand for the conjunction of all non-normative truths, and let J

non-standard notational choice to use '$\Leftrightarrow$'). See Fine: 555f for a general defence of the intelligibility of simultaneous substitution.

stand for 'Jennifer wrongs Dawn'. Further assume the following seemingly plausible schematic rule:

$$\text{(Transmission)} \;\; \triangle A, \Box(A \to B) \vdash \triangle B$$

If the non-normative does not involve any indeterminacy, then we have $\triangle P$. Given that it is indeterminate whether J holds, we have $\neg \triangle J$ and $\neg \triangle \neg J$. Given (Transmission), it follows that we get neither $\Box(P \to J)$ nor $\Box(P \to \neg J)$. This might lead some to conclude that the relevant form of supervenience of the normative on the non-normative fails.

We can still get that the determinacy-status of J supervenes over the non-normative. If J is indeterminate, then we can have that $\Box(P \to (\neg \triangle \neg J) \wedge (\neg \triangle J))$ determinately holds. More generally, there can be a non-normative *status-base* for all normative truths, given the following definition of a status-base:

- A set of truths S is a *status-base* for the truths in N iff $\bigwedge S$ (the conjunction of all members of S) is such that for every $Q \in N$:
  - If $\triangle Q$, then $\triangle\Box(\bigwedge S \to \triangle Q)$.
  - If $(\neg \triangle \neg Q) \wedge (\neg \triangle Q)$ (i.e. if it is indeterminate whether Q), then $\triangle\Box(\bigwedge S \to ((\neg \triangle \neg Q) \wedge (\neg \triangle Q)))$.

This gives us a clear sense in which the non-normative fixes the normative. The non-normative fixes which normative truths determinately hold and which normative truths are indeterminate. In Kearns' story, a description of the non-normative features of the situation is sufficient to fix that one of Jennifer and Dawn wronged the other and that it is indeterminate who wronged whom.[3]

[3] If we assume that the non-normative not only is a supervenience base of the normative, but that the normative furthermore is metaphysically grounded in the non-normative, then we can have a case of fundamental determinacy

Where does this leave (Transmission) and the argument against the supervenience of the normative on the non-normative based on it? There are different ways to understand validity in supervaluationist frameworks. The most popular way consists in taking '$\Gamma \vdash A$' to say that if each among Γ holds on every precisification, then A holds on every precisification. If this reading is assumed, then $\triangle P$, (Transmission), and $(\neg \triangle \neg J) \wedge (\neg \triangle J)$ force one to accept that $\Box(P \rightarrow J)$ does not hold on every precisification.[4] The view that the strict-entailment-claim only holds on the precisification on which J holds and is hence indeterminate seems acceptable: The non-normative necessitates how things stand with respect to the question whether Jennifer wrongs Dawn, but it is indeterminate whether the non-normative necessitates that Jennifer wrongs Dawn (or that Dawn wrongs Jennifer).[5]

Accepting that the case of Jennifer and Dawn is a case of normative indeterminacy and making use of a supervaluationist understanding of normative indeterminacy allows to uphold (WD) while maintaining that the normative situations of Jennifer and Dawn are symmetric and that there is a clear sense in which the normative supervenes on the non-normative.

3 Conclusion

I conclude by tackling the question whether the normative indeterminacy in the given case is semantic or metaphysical. It should be noted that my solution would work either way. For this reason I can let my argument for the indeterminacy being metaphysical be merely tentative.[6]

with derivative indeterminacy. Such cases have been argued to be impossible in Barnes. My proposed supervenience-principle is based on the response by Eva. See also Richardson.

[4] Note that $\triangle P$ and $(\neg \triangle \neg J) \wedge (\neg \triangle J)$ hold on both precisifications, given that $\triangle$ works like a necessity-operator and both precisifications are accessible from each other.

[5] The question how necessity and determinacy interact cannot be settled in this paper. For further discussion see Litland and Yli-Vakkuri. An alternative reading of validity that is defended in Varzi consists in taking '$\Gamma \vdash A$' to say that on every precisification, if all among Γ hold, then so does A. On this reading (Transmission) can be plausibly rejected. Even if $\triangle P$ and $\Box(P \rightarrow J)$ are accepted to hold on the precisification on which J holds, there is no pressure to accept that $\triangle J$ holds on this precisification (especially given that according to this view on the other accessible precisification $\triangle P$ and $\Box(P \rightarrow \neg J)$ hold for analogous reasons).

[6] For a different line of argument that moral indeterminacy is worldly if combined with moral realism see Schoenfield.

I assume, following Barnes, that a case of indeterminacy is metaphysical iff it remains after all semantic indeterminacy is resolved by maximally precisifying all concepts involved. It follows that to show that a case of indeterminacy is metaphysical, it is sufficient to show that it is not semantic. My argument against the present case being a case of semantic indeterminacy can be put as follows:

(I) The indeterminacy involved in the reactive loop is semantic only if there is an admissible precisification of the concept of wronging according to which Jennifer wrongs Dawn and Dawn does not wrong Jennifer.

(II) There is no admissible precisification of the concept of wronging according to which Jennifer wrongs Dawn and Dawn does not wrong Jennifer.

Premise (I) follows from the way the indeterminacy-solution is set up. If someone holds that another concept than wronging is culpable for the indeterminacy, they would face a similar dialectics. The presumably more controversial premise is (II). It is supported by the principle that certain core features of concepts that admit of precisification have to be exhibited by every one of its precisifications for the precisification to be admissible. Given the symmetry between the normative situations of Jennifer and Dawn, not discriminating between the normative status of Jennifer and Dawn arguably is such a core feature. The underlying idea is that part of what it is for a precisification of a normative concept to be admissible is that a speaker could adopt the precisification (speak a language in which the concept is precisified in this way) without making a normative mistake. Blaming Jennifer for wronging Dawn while maintaining that Dawn did not wrong Jennifer arguably would be inappropriate and a (minor) normative mistake, for it would amount to adopting a normative concept that makes normatively irrelevant arbitrary distinctions. This consideration speaks in favour of taking the case to involve a case of indeterminacy in normative reality that every admissible concept of wronging has to reflect. That normative concepts should reflect indeterminacy in reality (even if the concepts involved are maximally precise) can be made plausible by considering another putative case of nonsemantic indeterminacy. If it is metaphysically indeterminate whether Smith's fission branch in Berlin or Smith's fission branch in London are diachronically identical to the killer of John, then it seems inappropriate to blame only the fission branch in London for the killing. Only blaming Jennifer in the present case seems equally inappropriate.

Acknowledgements

Many thanks to Vera Hoffmann-Kolss for conversations about this topic. I also wish to thank a reviewer for this journal. Work on this paper was supported by the Swiss National Science Foundation, grant number P500PH_214177.

References

Barnes, Elizabeth. "Fundamental Indeterminacy". *Analytic Philosophy* 55, no. 4 (2014): 339–362. https://doi.org/10.1111/phib.12049.

– . "Ontic Vagueness: A Guide for the Perplexed". *Noûs* 44, no. 4 (2010): 601–627. https://doi.org/10.1111/j.1468-0068.2010.00762.x.

Barnes, Elizabeth, and J. Robert G. Williams. "A Theory of Metaphysical Indeterminacy". In *Oxford Studies in Metaphysics volume 6*, ed. by Karen Bennett and Dean W. Zimmerman, 103–148. Oxford University Press, 2011.

Dougherty, Tom. "Vague Value". *Philosophy and Phenomenological Research* 89, no. 2 (2013): 352–372. https://doi.org/10.1111/phpr.12026.

Eva, Benjamin. "Emerging Determinacy". *Thought: A Journal of Philosophy* 7, no. 1 (2018): 31–39. https://doi.org/10.1002/tht3.266.

Fine, Kit. “Williamson on Fine on Prior on the Reduction of Possibilist Discourse”. *Canadian Journal of Philosophy* 46, **numbers** 4-5 (2016): 548–570. https://doi.org/10.1080/00455091.2016.1153407.

Kearns, Stephen. “Tit for Tat for Tit: On Reactive Loops and Regresses”. *Analysis* 83, no. 1 (2023): 55–60. https://doi.org/10.1093/analys/anac032.

Keefe, Rosanna. *Theories of Vagueness.* New York: Cambridge University Press, 2000.

Litland, Jon Erling, and Juhani Yli-Vakkuri. “Vagueness & Modality – An Ecumenical Approach”. *Philosophical Perspectives* 30, no. 1 (2016): 229–269. https://doi.org/10.1111/phpe.12088.

Richardson, Kevin. “Derivative Indeterminacy”. *Erkenntnis* (forthcoming): 1–17. https://doi.org/10.1007/s10670-023-00692-5.

Schoenfield, Miriam. “Moral Vagueness is Ontic Vagueness”. *Ethics* 126, no. 2 (2016): 257–282. https://doi.org/10.1086/683541.

Varzi, Achille C. “Supervaluationism and its Logics”. *Mind* 116, no. 463 (2007): 633–676. https://doi.org/10.1093/mind/fzm633.