

Careful What You Wish

Dilip Ninan has raised a puzzle for centered world accounts of de re attitude reports extended to accommodate what he calls “counterfactual attitudes.” As a solution, Ninan introduces multiple centers to the standard centered world framework, resulting in a more robust semantics for de re attitude reports. However, while the so-called multi-centered world proposal solves Ninan’s counterfactual puzzle, this additional machinery is not without problems.

In **Section 1**, I present the centered world account of attitude reports, followed by the extension to counterfactual attitudes which Ninan targets with his puzzle. In **Section 2**, I pose the counterfactual puzzle and present Ninan’s multi-centered world solution, emphasizing similarities and differences between multi-centered and centered world accounts of attitude reports. In **Section 3**, I argue the counterfactual attitude *wishing* falls under the purview of the multi-centered proposal, but that the proposal generates false predictions for wish reports concerning unsatisfiable content. I canvass responses, ultimately concluding Ninan’s proposal requires substantial revisions.

Section 1: Centered Worlds and Counterfactual Puzzles

In this section, I motivate and present the standard centered world account of belief reports, illustrating how centered worlds may be used to characterize de se and de dicto beliefs, and when supplemented with acquaintance relations, de re beliefs. While not a full presentation of the centered world account, features presented suffice for generating the counterfactual puzzle of **Section 2**.

Centered Worlds and Attitudes De Se

Lois Lane may believe she has brown hair, that some inhabitant of Metropolis is a supervillain, and that her coworker Clark Kent is, among other things, not very strong.¹ One tradition in the philosophy of language treats the content of Lois’s various beliefs as sets of possible

¹I stick with belief as a paradigmatic propositional attitude in **Section 1** and **Section 2**, but everything I say about belief can be transposed to desire; desire is discussed in detail in **Section 3**.

worlds compatible with what Lois believes.² David Lewis famously argued mere sets of possible worlds were too coarse-grained to adequately characterize the contents of agents' beliefs, making his point by appealing to so-called *de se* beliefs, or beliefs “about oneself when one thinks of oneself in a characteristically first-person way.”³ Lewis proposed treating the content of beliefs as sets of compatible *centered worlds*, which are ordered triples (w',t',x') consisting of a world (w'), time (t'), and an individual (x') existing at that world and time who represents the believing agent. Many contemporary semanticists have followed suit, at least in spirit.⁴

To see how centered worlds characterize the content of agents' *de se* beliefs, consider Lois's belief about herself at some t in some w , that her hair is brown. A centered world (w',t',x') is *compatible* with what Lois believes at t in w just in case Lois's representative at t' in w' has brown hair. The *representative(s)* of Lois in this example are those x' stipulated to have the properties Lois believes she has, e.g. brown hair, in each centered world where Lois is represented. Lois's compatible belief worlds form the content of Lois's belief, which is a set of centered worlds called a *centered proposition*. Lois believes a centered proposition just in case all the centered worlds compatible with what Lois believes are included in the centered proposition. For example, if Lois believes she has brown hair at t in w , then every centered world (w',t',x') compatible with what Lois believes at t in w is such that x' has brown hair at t' in w' . Then Lois believes the centered proposition, or set of centered worlds:

$$(1) \{(w',t',x') \mid x' \text{ has brown hair at } t' \text{ in } w'\}^5$$

²See (Hintikka, 1962) and (Stalnaker, 1984) for influential proponents.

³See (Lewis, 1979) for the initial presentation; see (Ninan, 2012a, pg. 1-16) for summary discussion, and (Ninan, 2012b, pg. 2) for the description of *de se* attitudes quoted here.

⁴See (Liao, 2012) and (Holton, 2015) for discussion. Notably absent are Lewis's claims that: (i) all beliefs and desires are ultimately *de se*; (ii) to bear an attitude to content is to self-ascribe properties (Lewis, 1978, pg. 156); and (iii) attitudes are functions over possible objects (credence functions for beliefs; value functions for desires). See (Lewis, 1981) for the details of (iii). Of the three, (iii) should be included in the Lewis-inspired treatment of attitudes presented here, but I ignore this detail in what follows as orthogonal to the main argument.

⁵I represent propositions set-theoretically, to be read: A world, time, and individual such that the individual has (a given property) at that time and world.

If we also assume Lois does have brown hair at t in w , the centered world (w, t, Lois) is a member of (1), in which case Lois's belief is true.⁶

Attitudes De Dicto and De Re

The beliefs listed for Lois included that some inhabitant of Metropolis is a supervillain, and that Clark Kent is not strong. These examples track a standard attitudinal distinction between *de dicto* and *de re* attitudes.⁷ The former are, broadly, thoughts agents have about states of affairs, while the latter are thoughts agents have about specific individuals.⁸ De dicto attitudes are easily accommodated by centered worlds. For example, the content of Lois's de dicto belief at t in w that some inhabitant of Metropolis is a supervillain is the centered proposition:

(2) $\{(w', t', x') \mid \text{some inhabitant of Metropolis at } t' \text{ in } w' \text{ is a supervillain}\}$

This proposition is true at a centered world (w', t', x') just in case (w', t', x') is a member of the proposition, and Lois believes (2) at t in w just in case every centered world (w', t', x') compatible with what Lois believes is included in (2).

De re attitudes, on the other hand, require something more than centered worlds. To see why, consider that an agent may have multiple distinct de re beliefs about a single individual, and yet these distinct de re beliefs may be in conflict. Lois, for instance, may believe her coworker Clark is not strong while also believing Clark is strong.⁹ Suppose Lois sees an individual throwing burglars around with little effort one night, and subsequently forms a belief she might express as "He is strong." Suppose also that Clark helped Lois move a few weeks earlier, where she saw Clark struggling to lift furniture, and subsequently formed a belief she might express as "Clark is not strong." If we also suppose Clark and the individual Lois sees throwing around burglars is the same

⁶More accurately: If Lois believes a centered proposition at t in w , Lois's belief is true *simpliciter* just in case the centered world (w', t', Lois) is a member of the centered proposition Lois believes.

⁷It is worth noting the de dicto/de re distinction could also be illustrated by Lois's belief that some inhabitant of Metropolis is a supervillain (cf. Quine: "Ortcutt believes someone is a spy"). I use distinct beliefs for clarity.

⁸More could be said about the distinction between de dicto/de re attitudes. The locus classicus is (Quine, 1956), but see (Mckay, 2015) for a summary of current debates.

⁹We also assume that Lois is rational, and so does not willingly hold inconsistent beliefs.

individual, a problem arises when modeling Lois’s beliefs about Clark with only centered worlds. Every centered world compatible with what Lois believes at t in w is such that Lois’s representative believes at t' in w' that Clark’s representative is both strong and not strong at t' in w' . Yet, there is no centered world compatible with this belief. Then Lois believes an empty centered proposition, i.e. nothing. This means either Lois correctly reports a belief, but the content of her belief is empty, or Lois incorrectly reports her belief. Neither option is palatable. Hence, centered worlds alone generate false predictions about plausible belief reports.

Motivated in part to solve such problems, Lewis proposed *de re* belief be understood as beliefs about individuals relative to *acquaintance relations*. Lewis thought of acquaintance relations as “relations apt for reliable transmission of information”, where there is causal and epistemic dependence between agents and the objects of their *de re* beliefs.¹⁰ Contemporary views of acquaintance relations, again following in spirit rather than letter, relax these dependence constraints, allowing acquaintance relations to be any relation that underwrites an agent’s ability to have a thought about an object.¹¹ Examples might include ‘seeing a man in a brown hat’, or ‘hearing of under the name “Superman”’. With centered worlds and relaxed acquaintance relations we can semi-formally characterize *de re* belief as:

- (i) An agent x believes at t in w that y is F , relative to acquaintance relation R , iff:
 - a. x bears R uniquely to y at t in w , and
 - b. x believes *de se* (at t in w) that the thing to which he/she bears R is F ¹²

Moreover, with acquaintance relations and centered worlds, we can characterize Lois’s distinct beliefs about Clark without generating an empty centered proposition. Suppose Lois bears acquaintance relation K to Clark, where K is the relation x bears to y iff y is the unique individual x sees struggling to lift furniture. Lois believes (relative to K) Clark is not strong. That is, Lois believes

¹⁰(Lewis, 1979, pg. 155)

¹¹See (Hawthorne & Manley, 2012) for problems associated with requiring epistemic and causal dependency constraints for acquaintance relations.

¹²(Ninan, 2012a, pgs. 11-12).

the individual she has seen struggling to lift furniture is not strong. The content of Lois's belief that Clark (relative to K) is not strong is:

- (3) $\{(w', t', x') \mid \text{the individual } x' \text{ saw struggling to lift furniture at } t' \text{ in } w' \text{ is not strong at } t' \text{ in } w'\}$

Suppose Lois also bears acquaintance relation S to Clark, where S is the relation x bears to y iff y is the unique individual x sees throwing burglars around with ease. Lois believes (relative to S) Clark is strong. That is, Lois believes the individual she sees throwing burglars around with ease is strong.

The content of Lois's belief that Clark (relative to S) is strong is:

- (4) $\{(w', t', x') \mid \text{the individual } x' \text{ sees throwing burglars around with ease at } t' \text{ in } w' \text{ is strong at } t' \text{ in } w'\}$

Sets (3) and (4) are compatible as there are centered worlds where x' is acquainted with distinct individuals, one x' sees struggling with furniture and the other x' sees throwing burglars around with ease. Hence, they may both be included in a centered proposition which Lois believes, i.e. Lois may believe at t in w that Clark (relative to K) is not strong and that Clark (relative to S) is strong.

More could be added to the centered world treatment of attitudes, but the presentation here of centered world treatment of de se, de dicto, and de re beliefs suffices for our purpose.¹³ We turn next to counterfactual attitudes, which lead to trouble for the centered world account.

Section 2: Ninan's Counterfactual Puzzle and Solution

In this section, following observations concerning constraints the centered world account places on compatibility in belief content, I present Ninan's counterfactual puzzle, his multi-centered world solution, and multi-centered characterizations of certain de se, de dicto, and de re attitudes. While not a full presentation of Ninan's account, the presentation suffices for the objections of **Section 3**.

¹³This includes both content and criticism. See (Cappelan & Dever, 2013) and (Magidor, 2015) for objections to (centered) possible world treatments of attitudes. Ninan's proposal avoids much standard criticism, though a notable exception is the "granularity problem" discussed in **Section 3**.

Compatibility Constraints and the Counterfactual Puzzle

The centered world account stipulates representatives at times and worlds that may share little similarity with the agents or objects of de re attitudes. Lois and Clark (relative to K), for instance, had stipulated representatives at t' in w' who may have shared few properties with Lois or Clark, respectively, at t in w . With that said, acquaintance relations require a minimal constraint hold between stipulated individuals across worlds and times compatible with an agent's attitude. The acquaintance relation K , for instance, was a relation that held between Lois and Clark at t in w , and also between their respective representatives at any world and time compatible with Lois's belief. Ninan has posed a puzzle for extensions of the centered world account that trades on the constraint required by acquaintance relations. Ninan targets applications of the centered world account to what he calls *counterfactual attitudes*, such as imagining, which is an attitude an agent may take towards content they know is false.¹⁴ Counterfactual attitudes are thus distinguished from traditional propositional attitudes, such as belief, which is an attitude an agent *may not* take towards content they know is false. Ninan argues characterizing an agent's de re counterfactual attitudes with acquaintance relations and centered worlds is problematic as the agent may coherently take attitudes towards content in which the constraint required by the acquaintance relation is undermined by properties ascribed by the agent.

Consider Lois once again. Suppose upon her first acquaintance with Clark she bears one and only one acquaintance relation Q to Clark, where Q is the relation x bears to y iff y is the unique individual x sees standing by the window in the office. Plausibly, Lois may have imagined upon meeting Clark that he was flying through the air outside the office. Then at t in w , Lois imagines Clark (relative to Q) is flying through the air outside the office. That is, Lois imagines Clark is

¹⁴(Ninan, 2012a, pg. 2)

standing by the window and Clark is flying through the air outside the office. The content of this imagining is thus:

- (5) $\{(w',t',x') \mid \text{the individual } x' \text{ sees standing by the window at } t' \text{ in } w' \text{ is flying outside the office at } t' \text{ in } w'\}$

However, the acquaintance relation Q directly conflicts with the property Lois imagines Clark to have. Hence, there are no worlds compatible with what Lois imagines, i.e. the centered proposition Lois believes is empty. Yet, Lois could plausibly imagine this scenario. Hence, the centered world account thus described makes false predictions for plausible imagining reports.

The Multi-centered World Account

Ninan proposes amendments to the centered world account which he claims accommodate extensions to counterfactual attitudes. Recall, on the centered world account, de re belief is characterized by an agent x bearing an acquaintance relation R to a unique individual to whom x attributes a property F . R and F largely determine the compatibility of centered worlds with an agent's belief. To avoid the troubles raised when this account is extended, Ninan proposes R not determine what worlds are compatible with agents' counterfactual attitudes.¹⁵ Ninan devises a *tagging function* that captures the idea formally:

Tagging Function $=_{\text{def}}$ (total) Function with domain \wp and such that there exists a world-time pair (w,t) and the range is included in the set of individuals existing at t in w ¹⁶

Ninan also observes that agents bear numerous acquaintance relations to individuals at any given time, which he captures formally as *individual-acquaintance pairs* constituting agents' *acquaintance sets*:

Individual-Acquaintance Pair $=_{\text{def}}$ An ordered pair (y,R) such that x bears R to y at t in w

Agent's Acquaintance Set $(\wp) =_{\text{def}}$ A (complete) set of individual-acquaintance pairs with respect to agent x at t in w

¹⁵The property F attributed by the agent still determines compatibility as it did on the centered world proposal.

¹⁶(Ninan, 2012a, pp. 10-11)

The acquaintance set forms the domain of the tagging function while the range is defined over individuals existing at world and time pairs. Each individual-acquaintance pair of an agent is input to the tagging function when characterizing that agent's attitude, and outputs a unique representative existing at (w,t) .

Ninan adopts the centered world account's stipulation of representatives for centers in centered worlds, but extends identification by stipulation to the individuals to whom agents bear de re attitudes.¹⁷ On the centered world proposal when Lois believed something about Clark, compatible centered worlds were centered on Lois's representative at each world. On Ninan's proposal, compatible multi-centered worlds are centered on *both* Lois's representative *and* Clark's representative at each world. The proposal then characterizes the content of agents' attitudes with *multi-centered worlds*, which are triples (w,t,f) consisting of a possible world w , time t , and tagging function f whose range is included in the domain of w .¹⁸ Multi-centered worlds (w',t',f') are *compatible* with an agents' attitude at t in w just in case:

- (i) The domain of f : $\{(y_1,R_1), \dots, (y_n,R_n)\}$ is x 's acquaintance set at t in w ; and
- (ii) $f'(y_1,R_1), \dots, f'(y_n,R_n)$ stand at t' in w' in all the relations that x imagines at t in w , that y_1 (relative to R_1), \dots and y_n (relative to R_n) stand in

With the content of agents' attitudes being a *multi-centered proposition*, a set of compatible multi-centered worlds. Concerning the counterfactual attitude of imagining in particular, an agent imagines at t in w a multi-centered proposition just in case all the multi-centered worlds compatible with what the agent imagines at t in w are included in the multi-centered proposition.¹⁹ Moreover, we can semi-formally characterize de re imagining as:

¹⁷Extending centered world accounts to multiple centers was anticipated by (Austin, 1990) and (Chalmers, 2003), who take multiple centers to be regions of sensory experience. Ninan, in contrast, understands multiple centers to be external objects. See (Pryor, 2016) for a more recent proposal comparable to Ninan's.

¹⁸(Ninan, 2012a, pg. 17)

¹⁹More accurately: An if an agent, say, Lois imagines a multi-centered proposition at t in w , Lois's imagining is true *simpliciter* just in case the multi-centered world $(w',t',f'(Lois,I))$ is a member of the centered proposition Lois believes.

- (i) An agent x de re imagines at t in w that y (relative to R) is F just in case every centered world (w',t',f') compatible with what x imagines at t in w is such that $f'(y,R)$ is F at t' in w'

To see how the multi-centered world proposal avoids the counterfactual puzzle, consider Lois once again seeing Clark for the first time and only bearing Q to Clark. Every multi-centered world (w',t',f') compatible with what Lois imagines at t in w is such that Lois's representative sees $f'(Clark,Q)$ flying outside at t' in w' . The tagging function f' evaluates the individual-acquaintance pair $(Clark,Q)$, and returns an individual existing at (w',t') . Importantly, *there is no constraint* on the representative of Clark returned by the tagging function. Rather, the individual returned by the tagging function is determined by stipulation. In other words, the pair (x',y') , where x' is Lois's representative at t' in w' and y' is returned by the tagging function at t' in w' , need have nothing in common with the pair $(Lois,Clark)$, not even the acquaintance relation Q . As a result, there are multi-centered worlds compatible with Lois's imagining, i.e. worlds where Lois's representative at t' in w' imagines y' flying around outside, regardless of Q . The content of this imagining is:

- (6) $\{(w',t',f') \mid f'(Clark,Q) \text{ at } t' \text{ in } w' \text{ is flying outside the window at } t' \text{ in } w'\}$

Where $f'(Clark,Q)=y'$. Since there are multi-centered worlds compatible with Lois's imagining, (6) non-empty. As this very example was used to present the counterfactual puzzle, this suggests the multi-centered world proposal avoids the counterfactual puzzle.

De Dicto, De Se, and Belief

De dicto attitudes are handled as before on the centered world proposal, modulo the additional machinery, but what of de se attitudes which originally motivated centered worlds? Ninan introduces the *acquaintance relation of identity* (denoted in what follows by "I") to characterize the first-person attitudes of agents. Ninan treats de se attitudes as a special case of de re attitudes under the acquaintance relation of identity, where each agent bears this relation uniquely to themselves. The

content, for example, of Lois's de se belief at t in w that she has brown hair is the set of multi-centered worlds:

$$(7) \{(x', t', F) \mid F(\text{Lois}, I) \text{ has brown hair}\}$$

Similarly, the content of Lois's de se imagining at t in w that she has red hair is the set of multi-centered worlds:

$$(8) \{(x', t', F) \mid F(\text{Lois}, I) \text{ has red hair}\}^{20}$$

What of belief? Acquaintance relations, on this account, are a minimal constraint on compatible worlds, but Ninan suggests acquaintance relation constraints should remain as usual when characterizing agents' beliefs.²¹ This is plausible, as relaxing acquaintance relations for counterfactual attitudes reflects differences between these attitudes agents may take towards content they do not know is false (e.g. belief), and content they know is false (e.g. imagining). The multi-centered world proposal then appears to provide a general framework for modeling both beliefs and imaginings which avoids the counterfactual puzzle, while also characterizing de se attitudes which motivated centered worlds in the first place.

As with the centered world treatment of attitudes, more could be added to the multi-centered world proposal, but the presentation here suffices. We turn next to the counterfactual attitude *wish*, which leads to trouble for the multi-centered world proposal.

Section 3: The Unsatisfiable Wish Objection and Responses

Ninan claims *wishing* is a counterfactual attitude which can be characterized by multi-centered worlds, though he provides neither support for this claim nor analysis of the attitude.²² Since my

²⁰One *prima facie* objection to Ninan's proposal should be deflected here. Given two distinct agents a and b , no multi-centered world compatible with anything a believes at t in w is compatible with what b believes at t in w , since I is unique to each acquaintance set. Hence, agents never believe the same content. In response, Ninan claims agents may share the same acquaintance relations (other than I). Let both a and b believe de re of an individual s (relative to S) that s is F . Then all the multi-centered worlds compatible with what a believes are incompatible with what b believes, but may nevertheless be in the multi-centered proposition: $\{(w', t', F): F(s, S) \text{ is } F \text{ at } t' \text{ in } w'\}$, both a and b believe.

²¹(Ninan, 2012a, pgs. 14-15)

²²Ninan claims dreaming and hoping are counterfactual attitudes in purview (Ninan, 2012a, p.20; Ninan, 2012b, p.10).

objections in this section rely on properly fitting this attitude in the multi-centered world framework, I first distinguish wish reports from desire reports in terms of use and content, then examine how both may fit in Ninan’s definition of counterfactual attitudes. I subsequently consider two plausible wish reports concerning unsatisfiable contents for which the multi-centered world account makes false predictions. Next, I consider two responses on Ninan’s behalf: rejecting the problematic wish reports as genuine, or accepting them as genuine but introducing a “null individual” to his account to accommodate them. I argue neither option adequately characterizes the problematic wish reports.

Wishing as a Counterfactual Attitude

Wishing is, perhaps more so than imagining, a poorly understood attitude.²³ “Wish” often appears as a synonym for “desire” in discussions of propositional attitude reports, which is unsurprising as they share similarities concerning both the reports and contents of the reports.²⁴ Concerning reports: When wish reports follow desire reports with the same content, wish reports are plausibly understood to add emphasis to the desire report, but to otherwise be the same attitude. For example, were Lois to report a desire that she become manager of the Daily Planet, a follow-up wish report that she become manager might suggest she is merely repeating her desire report with emphasis rather than reporting a change in attitude. Relatedly, wish reports may plausibly be understood as desires agents take as unlikely to be satisfied. If Lois believed becoming manager was extremely unlikely, for instance, she may nevertheless desire it, but report the desire as a wish to emphasize how unlikely she takes the desire to be satisfied. Concerning content: It seems a mistaken to treat the content of an agent’s desire as true or false. More plausibly, the content of an agent’s

²³Reviewing the philosophical literature reveals little; see (Anscombe, 1957) as a noteworthy exception. Reviewing the linguistics literature reveals more; see (Heim, 1992), (Percus & Sauerland, 2003), and more recently (Song, 2016).

²⁴Discussion of desire as a propositional attitude is also infrequent. See (Braun, 2015; Fara, 2013; Lycan, 2012; Nolan, 2006) for some recent work, though none of these authors distinguishes wishing and desiring as proposed here.

desire is *satisfied* or not.²⁵ We might similarly say the content of an agent's wish is satisfied or not, as wishes are not truth-apt.²⁶

Despite the superficial similarities, there are good reasons to think desiring and wishing are distinct attitudes. First, while desires may be dispositional or occurrent, wishes seem, in every case, occurrent.²⁷ Presumably, we have any number of desires which we do not think about, while it seems implausible that we have wishes which we do not think about. Second, and relatedly, desires seem more closely linked to motivations for actions than wishes. Were Lois to report a desire to become manager at the Daily Planet, one might appropriately ask how she intends to ascend the managerial ladder. If instead, Lois reported a wish to become manager at the Daily Planet, a request for Lois's plan of action may be inappropriate. Desire reports by an agent suggest the agent has a plan in mind to satisfy the desires. Often wish reports suggest the reporting agent has no plan of action in mind to satisfy the wish. Adventurous Lois might wish that she had the ability to fly without having any plan to satisfy the wish. Third, continuing the preceding point, in some cases a wish report suggests the reporting agent thinks there *is no* plan of action they might take to satisfy the wish, i.e. the wish is *unsatisfiable*.²⁸ Lois might, for example, wish she had asked Clark out for coffee last week, while believing there is no way for this wish to be satisfied. By contrast, were Lois to report a desire that she had asked out Clark last week, we might doubt whether she genuinely believed there was no way to satisfy the desire, since agents seem to desire things they think are at least satisfiable. This feature of desire seems well-described by Hume who writes, "...we are no sooner acquainted with the

²⁵Though common characterizations of desire contents end up treating satisfaction as something like truth. See (Nolan, 2006; Lewis, 1979) for characterizations of desire, and (Lycan, 2012) for discussion of "semantic satisfaction".

²⁶More naturally: the content of a wish can be *fulfilled* or not. I stick with satisfaction in what follows.

²⁷See (Schroeder, 2015) for discussion of dispositional and occurrent desires; Schroeder does not consider wish reports.

²⁸A certain class of objections to action-based theories of desire trades on putative desires which cannot motivate. See (Schroeder, 2004) for summary. However, these objections are avoidable if proponents treat desires which cannot motivate as a "related conative attitude: wishes, perhaps."

impossibility of satisfying a desire than the desire itself vanishes.”²⁹ Such a claim makes little sense if desires may be for known unsatisfiable content. We could perhaps add to Hume’s claim that we might be acquainted with the impossibility of satisfying a wish, and yet wish nonetheless.

Ninan counts wishing as a counterfactual attitude, but says little else about the attitude. He says even less about desire. Thus, it is not clear if he would follow tradition and treat desire as a propositional attitude, or if he would buck tradition and treat desire as a counterfactual attitude. I find the dissimilarities above sufficient to distinguish desire and wish as distinct attitudes, with desire as traditionally understood, and wish as counterfactual. Ninan’s characterization of propositional and counterfactual attitudes provides a framework in which to make this distinction, with the former being attitudes agents may take towards content they *do not know is false* and the latter being attitudes agents may take towards content they *know is false*.³⁰ Applying this framework to the propositional attitude belief entails agents cannot believe content they know is false, which seems the right result. Applied to the propositional attitude desire (substituting satisfied/unsatisfied for true/false) this entails agents cannot desire content they know is unsatisfied. This does not seem the right result. Lois desires to become manager, at least in part, because she is not yet manager.³¹ To accommodate this, we may adjust desire to be an attitude agents take towards content they *do not know is satisfied*. This allows agents to desire content they know is unsatisfied, but rules out desiring content they know is satisfied, which seems the right result.³²

On Ninan’s framework, what distinguishes propositional attitudes from counterfactual attitudes is whether agents are ignorant or informed about attitude content. Propositional attitudes are attitudes concerning what agents *do not know*, while counterfactual attitudes are attitudes

²⁹(Hume, Treatise, Introduction, pg. vii); I read the “impossibility” in the passage to be logical impossibility. See (Brett & Paxman, 2008) for discussion of potential puzzles such a reading raises for Hume.

³⁰The notion of falsity here is falsity *simpliciter*. In other words, an agent may believe at t in w content they do not know is false *simpliciter* at t in w. Similarly, an agent may imagine at t in w content they know is false *simpliciter* at t in w.

³¹ Similar observations are found in (Prinz, 2008), e.g., “...one cannot desire what one believes is already the case.”

³²I have reservations, but desire is not my focus. See (Lycan, 2012) and (Schroeder, 2009), for worries that “semantic satisfaction” is inadequate. My worries about wishing, I think, are similar to Lycan’s concerns about desire.

concerning what agents *do know*. Applied to the counterfactual attitude imagining, Ninan’s framework entails agents may imagine content they *know is false*, and agents may wish content they *know is unsatisfied*.³³ Importantly, Ninan’s characterization of counterfactual attitudes leaves room for attitudes agents may take towards content they *know is impossible* or *know is unsatisfiable*, since agents who know content is impossible presumably know the content is false. Ninan briefly considers putative imaginings of impossible content, but rejects that agents imagine the impossible.³⁴ Rejecting that agents genuinely imagine impossible content may be defensible, but there is no reason to think the rejection applies to *every* counterfactual attitude. Indeed, wish seems a candidate attitude agents may take towards content they know is impossible, or more appropriately, unsatisfiable.

A Puzzle about Wish

Characterizing the counterfactual attitude of wishing in the preceding manner, however, raises problems for the multi-centered world proposal, illustrated by two examples. First, suppose Lois at t in w , near the end of her life, becomes convinced the world would have been better had she never existed, expressing her conviction as: “I wish I had never existed.”³⁵ Every multi-centered world (w', t', f') compatible with Lois’s de se wish at t in w is such that $F(\text{Lois}, I)$ never existed t' in w' . Then the content of Lois’s de se wish is:

$$(9) \{(w', t', f') \mid F(\text{Lois}, I) \text{ never existed at } t' \text{ in } w'\}$$

This multi-centered proposition is empty since there is no multi-centered world compatible with the center not existing. For the multi-centered account, compatibility is determined by representatives at other worlds and times, and the properties attributed by the agent of the attitude. Since there must be a stipulated representative of Lois in worlds compatible with her de se wish, and noting the

³³The notion of unsatisfied should be understood as unsatisfied *simpliciter*. In other words, an agent may desire at t in w content they do not know is satisfied at t in w . Similarly, an agent may wish at t in w content they know is satisfied.

³⁴See (Ninan, 2012a) for discussion.

³⁵See (Nolan, 2006) for a similar objection, but targeting centered world treatments of desire. See (Feit, 2010) and (Turner, 2010) for responses; the latter inspires some of the rebuttal on behalf of Ninan below.

attributed property at each evaluated world is that the center does not exist, the multi-centered proposition is empty. However, this seems a plausible wishing report. Hence, the multi-centered account generates a false prediction.

Second, suppose Lois spent her college years working on Hilbert’s program attempting to prove Peano Arithmetic complete. Crushed after Gödel published his incompleteness theorems, and observing she had spent years toiling towards an impossible goal, Lois may legitimately wish her work had been directed at an obtainable target. Lois might express herself as “I wish Peano Arithmetic was complete.” This is plausibly read as a *de dicto* wish for a state of affairs such that the theory of Peano Arithmetic was complete.³⁶ Every multi-centered world (w', t', f') compatible with what Lois wishes at t in w is such that Peano Arithmetic is complete t' in w' . Then the content of Lois’s wish is:

$$(10) \quad \{(w', t', f') \mid \text{Peano Arithmetic is complete at } t' \text{ in } w'\}$$

This multi-centered proposition is empty since there is no possible world in which Peano Arithmetic is complete. Yet, this seems a plausible wishing report, and so the multi-centered world account generates another false prediction.

Replies and Responses

Ninan might avoid the trouble by rejecting the problematic wish reports as genuine wishes, or might alleviate the trouble by introducing a “null individual” into the domain of individuals. I take each in turn. First, much as Ninan rejects putative imaginings of impossible content as cases of agents being mistaken in their reports, Ninan might reject both problematic wish reports as

³⁶One might prefer a *de re* reading as advocated by (Cresswell & von Stechow, 1982), who allow agents to bear acquaintance relations to numbers (and perhaps theories). This will not help. The multi-centered proposition is constituted by worlds compatible with Lois’s wish that Peano Arithmetic (relative to some acquaintance relation, call it, P) is complete. Lois presumably now knows the theory cannot be complete. Hence, the properties the representative x' at t' in w' attributes to y' (relative to P) at t' in w' are themselves incompatible, resulting in the content: $\{(w', t', x') \mid f'(Peano\ Arithmetic, P) \text{ is complete and incomplete at } t' \text{ in } w'\}$, which is empty.

mistaken.³⁷ Concerning Lois’s wish that she never existed, Ninan might perhaps respond that Lois is actually wishing she had some other property, a wish the multi-centered world proposal could accommodate. Similarly, when Lois reports wishing Peano Arithmetic was complete, she may actually be wishing for some other state of affairs. It is less clear in this latter case what alternative Lois may be wishing for, but the point is the same: Lois is likely mistaken in her reports, so they should not be treated as genuine, and so the multi-centered world proposal should not accommodate them.

It may be plausible to reject putative imaginings for impossible content as perhaps confused, but I find it much less plausible to reject a comparable wish report. Were Lois to report that she imagined “ $2+2=6$ ”, skepticism is a natural response. Those who hear the report might ask what she *means* by “2”, “+”, “=”, and “6”. It seems likely after Lois provides an explanation for her putative imagining she would either admit confusion about the meanings of the terms involved, or at least lose confidence in her own imagining report. Concerning a parallel wish that “ $2+2=6$ ”, skepticism seems *inappropriate*. Those who hear the report may press Lois to clarify what she *means* by the terms involved, but here it seems less likely Lois would walk away admitting confusion or less confident in her wish report. While this is, perhaps, a rather odd wish for someone to make, Lois might genuinely wish for such a thing fully knowing it is unsatisfiable. Since plausibly Lois might wish for unsatisfiable content, rejecting Lois’s wishing she had never existed and that Peano Arithmetic is complete seems the wrong way to go. In neither wish report does Lois appear confused or mistaken about her wish.

Turning to the second response, Ninan might introduce a “null individual” to the domain of possible individuals to accommodate the problematic wish reports. Ninan considers introducing a “null individual” as a potential solution to a different problem. He observes since the multi-centered

³⁷An example of imagining impossible content, which parallels those considered by Ninan, would be Lois imagining that she is Napoleon, and that Napoleon is not identical to her. See (Ninan, 2008, pp.72-73) for discussion.

world proposal's tagging function is total, each individual-acquaintance pair of an agent's acquaintance set is mapped to some (but only one) individual, and so individuals are represented in compatible multi-centered worlds even if they do not exist there. Assume Lois has in her acquaintance set two individual-acquaintance pairs (Lois,I) and (Clark,Q). Let Lois imagine at t in w that she has red hair. The content of this imagining is:

$$(11) \quad \{(w',t',f) \mid F(\text{Lois},I) \text{ has red hair at } t' \text{ in } w'\}$$

However, since the tagging function is total, (Clark,Q) is mapped to something in multi-centered worlds compatible with what Lois imagines, though Lois's imagining has nothing to do with anyone other than herself. To avoid this result, Ninan suggests individual-acquaintance pairs not explicitly represented in attitude content be mapped to a "null individual" which represents the individuals of the pairs as not existing. Ninan only gestures at this patch, considering it an *ad hoc* solution.

Perhaps he *should* introduce the "null individual" though, since it may help with the problematic wish reports. To see how the "null individual" might help, consider Lois's wish report that she had never existed. Employing the null individual, the content of Lois's wish report is:

$$(12) \quad \{(w',t',f) \mid F(\text{Lois},I) \text{ at } t' \text{ in } w'\}$$

Where (Lois,I) is mapped to the null individual. (12) is the non-empty set of multi-centered worlds centered on the "null individual." Thus, introducing the "null individual" to the multi-centered world proposal avoids the first of the problematic wish reports. Unfortunately, it does not avoid the second: there is no multi-centered world compatible with Lois's wish, since there is no world in which Peano Arithmetic is complete. Hence, there is no multi-centered world in which the "null individual" will make a difference to the content of the second problematic wish report. Of course, it is open to Ninan to treat *de se* attitudes such as Lois's wishing she had never existed as centered on the "null individual," but treat Lois's *de dicto* wish that Peano Arithmetic is complete as having empty content. Then the content of the former wish report would be a non-empty set, while the

content of the latter would be the empty set. This would allow Ninan to treat both problematic wish reports as genuine wishes while distinguishing them in terms of content: a tidy result.

Nevertheless, there is another worry lurking. For the content of Lois's wish that Peano Arithmetic is complete ends up identical to the content of Lois's wish for any unsatisfiable content, say, " $2+2=6$ ". Yet, surely agents may wish for distinct unsatisfiable contents. Hence, this proposal generates further false predictions concerning wish reports. Of course, treating all impossible content as identical is not a problem unique to the multi-centered world proposal, as centered world treatments of attitudes are often susceptible to this so-called "granularity problem."³⁸ Transposed to multi-centered world treatments of wish, the "granularity problem" is that unsatisfiable, but distinct, wish reports come out identical, since the content of each is the empty set. Given how common and intractable the "granularity problem" is for centered world accounts of attitudes, perhaps Ninan can rest knowing he is in good company with a tough problem. However, noting the multi-centered world proposal is designed to accommodate *counterfactual* attitudes (as well as propositional attitudes), the objection is especially salient for Ninan. Each of us likely has incompatible beliefs or desires in our entire set of beliefs or entire set of desires, yet presumably no one explicitly and knowingly believes or desires incompatible content.³⁹ Less plausibly, but still plausibly, agents may mistakenly 'imagine' impossible content, but likely do not explicitly imagine known impossible content.⁴⁰ I find it much less plausible to reject that agents may explicitly wish for known unsatisfiable content, as unsatisfiable content appears a hallmark of wish. If this is correct, then insofar as Ninan accepts wishing as a counterfactual attitude, the "granularity problem" seems less a merely tough problem, and more a *reductio* of his multi-centered world treatment of counterfactual attitudes.⁴¹

³⁸I follow (Berto, 2010) in calling the problem by this name.

³⁹This observation motivates much literature on fragmentation. See (Lewis, 1986) and (Stalnaker, 1984) for early discussion, and (Egan, 2008) and (Greco, 2015) for more recent discussion.

⁴⁰Again, see (Priest, 2016) for a response.

⁴¹The multi-centered world proponent might consider introducing impossible worlds to accommodate seemingly impossible attitude content, as carried out for *conceiving* in (Berto, 2014). Characterizing counterfactual attitudes with

Section 4: Conclusion

I presented the standard centered world account of attitude reports, as well as the counterfactual puzzle that follows from extending the account to counterfactual attitudes. I then presented a multi-centered world solution to the puzzle, which appears to provide an adequate treatment of belief and imagining reports, whether *de se*, *de dicto*, or *de re*. After distinguishing wish from desire conceptually, and on Ninan's propositional and counterfactual attitude framework, I presented problematic *de se* and *de dicto* wish reports for unsatisfiable content that lead to false predictions for the multi-centered world proposal. Canvassing possible revisions to the proposal revealed it susceptible to the well-known "granularity problem", which seems especially salient when treating wish reports. I conclude then Ninan's claim that the multi-centered world proposal adequately characterizes counterfactual attitudes should be understood as, at present, mere wishful thinking.

impossible world machinery might be motivated independently, by noting that expanding the range of worlds avoids other problems known to plague centered world accounts, such as the problem of logical omniscience (e.g. any agent who believes anything believes every necessarily true proposition). I hope to pursue this in future work.

Works Cited

- Anscombe, E. (2000). "Intention", 2nd ed. *Cambridge, MA: Harvard University Press.*
- Austin, D. (1990). "What's the Meaning of 'This'?: A Puzzle about Demonstrative Beliefs." *Cornell University Press.*
- Brett, N. & Paxman, K. (2008). "Reason in Hume's Passions" *Hume Studies*. Volume 34; Number 1; 43-59.
- Berto, F. (2014). "On Conceiving the Inconsistent." *Proceedings of the Aristotelian Society*. 103-121
- Braun, D. (2015). "Desiring, Desires, and Desire Ascriptions." *Philosophical Studies*. Volume 172. No. 1; 141-162.
- Cappelen, H. & Dever, J. (2013) "The Inessential Indexical". Oxford University Press, Oxford.
- Chalmers, D. (2003). "The Content and Epistemology of Phenomenal Belief." *In Consciousness: New Philosophical Perspectives*. Oxford University Press.
- Cresswell M. & Stechow, A. (1982). "De Re Belief Generalized." *Linguistics and Philosophy*. Volume 5, No. 4; 503-535.
- Egan, A. (2008). "Seeing and Believing: Perception, Belief Formation, and the Divided Mind." *Philosophical Studies*. Volume 140; No. 1; 47-63.
- Fara, D.G. (2013). "Specifying Desires." *Nous*. Volume 47. No. 2; 250-272.
- Feit, N. "Selfless Desires and the Property Theory of Content." *Australasian Journal of Philosophy*. Volume 88. No. 3. 489-503.
- Greco, D. (2015). "Iteration and Fragmentation." *Philosophy and Phenomenological Research*. Volume 91; No. 3; 656-673.
- Hawthorne, J. & Manley, D. (2012). "The Reference Book." *Oxford University Press.*
- Hintikka, J. (1962). "Knowledge and Belief: An Introduction to the Logic of Two Notions." Cornell University Press.

- Holton, R. (2015). "Primitive Self-Ascription: Lewis on the De Se." *The Blackwell Companion to David Lewis*. Eds. Loewer, B. & Schaffer, J.
- Hume, D. (1739/2000). "Treatise of Human Nature." *Oxford University Press*.
- Lewis, D. (1979) "Attitudes De Dicto and De Se" *Philosophical Papers Volume I*, *Oxford University Press*
- Lewis, D. (1981). "Causal Decision Theory." *Australian Journal of Philosophy*. Volume 59. No. 1; 5-30.
- Lewis, D. (1983) "Individuation by Acquaintance and by Stipulation" *The Philosophical Review*, *Volume 92, No. 1*
- Lewis, D. (1986). "On the Plurality of Worlds." *Blackwell Publishers*.
- Liao, S. (2012) "What Are Centered Worlds?" *Philosophical Quarterly*. 62; 294-316.
- Lycan, W. (2012). "Desire Considered as a Propositional Attitude." *Philosophical Perspectives*. *Volume 26, No. 1; 201-215*
- Magidor, O. (2015) The Myth of the De Se. *Philosophical Perspectives*.
- McKay, T. (2010). "Propositional Attitude Reports." *Stanford Encyclopedia of Philosophy*.
- Ninan, D. (2008) "Imagination, Content, and the Self" *Dissertation, Massachusetts Institute of Technology*
- Ninan, D. (2012a) "Counterfactual Attitudes and Multi-centered Worlds" *Semantics and Pragmatics*, *Volume 5; Article 5; 1-57*.
- Ninan, D. (2012b) "Self-Location and Other-Location" *Philosophy and Phenomenological Research*
- Nolan, D. (2006). "Selfless Desires." *Philosophy and Phenomenological Research*. Volume 73. No. 3. 665-679.
- Percus, O. & Sauerland, U. (2003). "On LFs of Attitude Reports." *Proceedings of the Conference Sinn und Bedeutung*. No. 114.
- Prinz, J. (2008) "No Satisfaction? The Mundane Truth about Desires." *MS. University of North Carolina*

Schroeder, T. (2007). "Three Faces of Desire." *Oxford University Press*.

Schroeder, T. (2009). "Desire." *Stanford Encyclopedia of Philosophy*.

Song, M. (2016). "The Semantics of Counterfactual Wish." *Language Research*. Volume 52. No. 2; 171-196

Stalnaker, R. (1984). "Inquiry." *Cambridge University Press*.

Turner, J. (2010). "Fitting Attitudes De Dicto and De Se." *Nous*. Volume 44. No. 1; 1-9.

Quine, W.V.O. (1956). "Quantifiers and Propositional Attitudes." *Journal of Philosophy*. Volume. 53. No. 5. 177-187.