

Dorr, Nebel, and Zuehl 2021, Consequences of Comparability

STRUCTURA Metaphysics Reading Group

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TL; DR:

This paper¹ makes use a principle of the logic of comparatives, **Comparability**², and defends three controversial claims:

- All agents (not just rational ones) have complete preferences.
- All agents (not just rational ones) have real-valued credences in every proposition in which they are confident to any degree.
- There is almost always some unique thing we ought to do, want, or believe.

1. Comparatives and Comparability

We are concerned with the logic of comparative constructions.

- the comparative forms of adjectives ('more *F*' or '*F*-er')
- the equative form ('[at least] as *F* as')

Examples of valid schemas involving comparative constructions³:

Strict Comparison *x* is more *F* than *y* iff *x* is at least as *F* as *y* and *y* is not at least as *F* as *x*.

Equality *x* and *y* are equally *F* iff *x* is at least as *F* as *y* and *y* is at least as *F* as *x*.

Restricted Reflexivity If *x* is at least as *F* as *y* or *y* is at least as *F* as *x*, then *x* is at least as *F* as *x*.

Transitivity If *x* is at least as *F* as *y* and *y* is at least as *F* as *z*, *x* is at least as *F* as *z*.

Moreover, the authors in Dorr, Nebel, and Zuehl forthcoming argue that the following more controversial schema is also valid:

Comparability If *x* is at least as *F* as *x* and *y* is at least as *F* as *y*, then either *x* is at least as *F* as *y* or *y* is at least as *F* as *x*.

Most of the authors' arguments also apply to natural syntactic generalizations of the above valid schemas. That is, there are grammatical kinds other than adjectives that enter into comparative constructions—nouns ('more butter'), verbs ('swam more'), and adverbs ('better explained'), and each of the schemas listed above has obvious analogues for these other categories to which it applies.

¹ Cian Dorr, Jacob M. Nebel, and Jake Zuehl. Consequences of comparability. *Philosophical Perspectives*, 35(1):70–98, 2021. DOI: <https://doi.org/10.1111/phpe.12157>. URL <https://onlinelibrary.wiley.com/doi/abs/10.1111/phpe.12157>

² Cian Dorr, Jacob M. Nebel, and Jake Zuehl. The case for comparability. *Noûs*, forthcoming. DOI: 10.1111/nous.12407

³ In this paper, the authors simply assume their validity for all comparative constructions in English.

2. Preference

The contemporary debate about **Comparability** originated from an argument against a thesis concerning *preference* and *indifference*:

Rational Preference Completeness Necessarily, if one is rational, then if one has some preferences about x and some preferences about y , one either prefers x to y , prefers y to x , or is indifferent between x and y .

The most influential argument against **Rational Preference Completeness** is the *small improvement argument*⁴.

The idea: consider two alternatives x and y that have very different advantages and disadvantages⁵. One has some preferences about these alternatives, i.e. one prefers a slightly improved career x^+ to x ⁶, and similarly one prefers a slightly improved career y^+ to y . According to the argument, one might rationally fail to have *any* preference between x and y given the differences between the two; but this lack of preference should not be understood as *indifference*. If one were indifferent between x and y , then one would have to prefer *anything* preferred to x , such as x^+ , to y . But one might rationally fail to have any preference between x^+ and y as well⁷. Thus, according to the argument, a rational agent, who has some preferences about x and some preferences about y , can have no preference between x and y , but is also not indifferent between them.

It is widely taken for granted that this scenario (i.e. a rational agent doesn't have complete preferences) is *possible*. Then the stronger claim **Preference Completeness** is also false:

Preference Completeness Necessarily, if one has some preferences about x and some preferences about y , one either prefers x to y , prefers y to x , or is indifferent between x and y .

The authors appeal to certain connections between 'prefer' and the sort of gradable expressions to which **Comparability** applies^{8,9}:

Comparative Preference a prefers x to y iff a likes x more than y .

Comparative Indifference a is indifferent between x and y iff a likes x and y equally.

Moreover, **Comparative Preference** along with previous valid schemas implies:

Preference Negative Transitivity Necessarily, if one does not prefer x to y and does not prefer y to z and has some preferences about y , one does not prefer x to z .

The Upshot: **Preference Negative Transitivity** predicts that the scenario imagined in the *small improvement argument* is impossible¹⁰.

⁴ The authors discuss and argue against this argument more extensively in their previous paper.

⁵ E.g. careers in very different fields.

⁶ E.g. just like x but with a slightly greater salary.

⁷ Given there still remain significant differences between the two.

⁸ Since 'prefer to' is not the comparative form of any gradable expression, arguments for **Comparability** don't directly apply.

⁹ Linguistic data in support of the connections:

- # She likes the vanilla more than the chocolate, but she doesn't prefer the vanilla to the chocolate.
- # He prefers scuba diving to hang gliding although he likes hang gliding more than scuba diving.
- # She likes these two restaurants equally but she's not indifferent between them.

¹⁰ We can rephrase **Preference Negative Transitivity** as such: Necessarily, if one does not prefer x^+ to y , and does not prefer y to x , and has some preferences about y (one prefers y^+ to y), one does not prefer x^+ to x . Thus, this scenario, in which the antecedent is true but the consequent is false, is impossible.

3. Confidence and Credence

A given real number in the unit interval can be a given person's *credence* ("degree of belief"/"subjective probability") in a given proposition.

A common proposal links the technical use of 'credence' to the ordinary word 'confident':

Credence Existence If a is at least as confident that P as a is that P , then there exists a (unique) real number x in the unit interval that is a 's credence that P ¹¹.

Credence/Confidence If there exist real numbers x and y such that $x > y$ and x is a 's credence that P and y is b 's credence that Q ¹², then a is more confident that P than b is that Q .

Credence Existence is highly controversial. Authors have pointed out that they seem psychologically unrealistic; that we don't seem to take such precise attitudes that orthodox probability requires; and that there seem to be plenty of circumstances in which we manifest confidence without lending point-valued subjective probability.

Note the undisputed *possibility* of each rational-valued credence:

Credence Possibility For every rational number x that is non-negative and not greater than 1, it is possible that for some a and P , x is a 's credence that P ¹³.

The Goal: By appealing to **Comparability** and **Credence/Confidence**, we can use these uncontroversial cases of credence as a yardstick to assign a real-valued credence to *any* pair of a person and a proposition in which that person is at least as confident as she is in that proposition. Using the following explicit definitions,

x is a [lower/upper] bound on a 's credence that P := a is [more/less] confident that P than anyone who had credence x in some proposition could be in that proposition.

we can state the following very plausible sufficient conditions for having a credence:

Credence Sufficiency If every non-negative rational number less than x is a lower bound on a 's credence that P , and every rational number greater than x and no greater than 1 is an upper bound on a 's credence that P , then a 's credence that P is x .

It is shown that **Comparability**, **Transitivity**, **Strict Comparison**, **Restricted Reflexivity**, **Credence Possibility**, **Credence/Confidence**, and **Credence Sufficiency** jointly imply **Credence Existence**.

Two main influential positive accounts of credence which are hard to reconcile with **Credence Existence**:

¹¹ Slightly formalized:
 $Cr_a(P) = x$, where $x \in [0, 1]$.

¹² Slightly formalized:
 $Cr_a(P) = x, Cr_b(Q) = y$, where $x, y \in [0, 1], x > y$.

¹³ Consider every rational number $x = \frac{m}{n}$. One who is absolutely certain that a ball will be fairly chosen from an urn containing m red balls and $n-m$ green balls reasonably assigns credence $\frac{m}{n}$ to the proposition that a red ball will be chosen.

Credences as Betting Dispositions a has credence x that P iff a is disposed to accept when offered the chance to buy a bet that costs less than $\$x$ and pays off $\$1$ if P , and disposed to accept when offered the chance to sell a bet that costs more than $\$x$ and pays off $\$1$ if P .

Note that the left-to-right direction is already in tension with **Credence Existence**. It is also tempting to consider **Credences as Betting Dispositions** as more of a helpful heuristic rather than an exceptionless generalization.

Credences as Judgments a has credence x that P iff a judges that the probability that P is x .

Talk of probability judgments is especially pervasive in the literature on imprecise probability. This also seems to be in tension with **Credence Existence**, since it seems rare for people to make perfectly specific judgments about the value of any real-valued quantity. And the tension remains had we replace ‘judge’ with other attitude-type expressions like ‘believe’, ‘take’, ‘regard’, ‘find’, etc.

The Upshot: The authors defend **Credence Existence**. One reason why it has been so widely rejected seems to be that many mistakenly assume that one’s degrees of confidence are *luminous*.

4. ‘Ought’ and Uniqueness

Many believe that when an agent has several options—actions she might perform, or attitudes she might choose—it is often false that there is one particular thing she ought to do, or attitude she ought to have. The authors argue against this common view.

The central premise they need:

Maximising Ought If one can ϕ , and ϕ ing is better than anything else one can do, then one ought to ϕ .

Similar alternative proposals replace the comparative ‘good’ (in its comparative form: ‘is better than anything else’) with other ones, e.g. ‘has most reason to ϕ ’; ‘the total reason for one to ϕ is stronger than the total reason to do anything else’; ‘one’s reasons for ϕ ing are collectively stronger than one’s reasons for doing anything else.’

The combination of **Comparability** and **Maximising Ought** generates significant pressure to accept

Uniqueness Almost always, if one must either ϕ_1, ϕ_2, \dots , or ϕ_n and these options are mutually exclusive, one either ought to ϕ_1 , ought to ϕ_2, \dots , or ought to ϕ_n .

Suppose this is false. Then there are (at least) two options ϕ_i, ϕ_j such that neither of them is worse than any of one’s options. Given

Comparability, ϕ_i, ϕ_j are *equally good*. However, given the manifold fine-grained factors that seem to be relevant to the goodness of any given option, and the manifold ways in which small differences with regard to these factors can make for small differences in how good an option is, it would seem to be vanishingly unlikely for all the factors to balance out in the way that would be required for there to be multiple options tied for first place¹⁴. That is:

No Ties It is almost never the case that one has multiple options that are equally good and at least as good as every other option.

Thus, one almost always has a unique best option. **Comparability**, **No Ties** and **Maximising Ought** together yield **Uniqueness**.

In general, those who find it unacceptable will be tempted to invoke the concept of *permissibility*, insisting that there are many cases where people have multiple options that are in the relevant way (e.g. morally or rationally) permissible. Take ‘ought’ and ‘permissible’ to be duals. **Uniqueness** is then equivalent to:

Unique Permissibility Almost always, if one must either ϕ_1, ϕ_2, \dots , or ϕ_n and these options are mutually exclusive, at most one of them is permissible.

In a slogan: “Everything that is not forbidden is compulsory.”

The authors reject treating ‘ought’ and ‘permissible’ as duals, such that ‘you ought to ϕ ’ does not entail ‘it is impermissible for you not to ϕ ’. ‘Ought’ and ‘should’ are weak deontic modals, which are not interchangeable with their strong cousins like ‘have to’ and ‘obligated to’. ¹⁵Moreover, ‘permissible’ does seem to be dual to ‘obligatory’.

One argument they invoke in defense of the distinction mentions that when confronted with choices, we often naturally *presuppose* that there’s a unique choice we ought to take. Consider:

1. ‘I’m having trouble figuring out which of these options I ought to take.’
2. \leftrightarrow There is one of these options that I ought to take.

Compare:

3. ‘I’m having trouble figuring out which of these two suspects committed the crime.’
4. \leftrightarrow One of these two suspects committed the crime.

However, also compare:

5. ‘I’m having trouble figuring out which of these options I’m required to take.’

¹⁴ I’m not sure how convincing this is.

¹⁵ Consider:

- ✓ You ought to do it, but you don’t have to.
- ✓ Although parking there would be permissible, you should park somewhere else.

6. \leftrightarrow One of these options is required to take.

But then one natural response is:

7. ‘Wait, why do you assume that any of them is required?’¹⁶

The Upshot: It’s *not* a natural thought that when confronted with choices, there’s (almost always) a unique option one is required to take, but it *is* a natural thought that there’s (almost always) a unique option one ought to take; and it is the latter weaker claim that the authors intends to defend.

5. Conclusion

A natural response to the paper, which the authors are aware of, address, but don’t fully answer: the authors are concerned with largely *ordinary*, natural-language use of various terms (‘prefer’, ‘ought’, and ‘credence’ as tied to ‘confident’), but what most philosophers are interested in are those terms with certain *technical* meanings of special interest to decision theory, ethics, and epistemology. To what extent are conclusions from this paper (and its antecedent) truly applicable?

References

Cian Dorr, Jacob M. Nebel, and Jake Zuehl. Consequences of comparability. *Philosophical Perspectives*, 35(1):70–98, 2021. DOI: <https://doi.org/10.1111/phpe.12157>. URL <https://onlinelibrary.wiley.com/doi/abs/10.1111/phpe.12157>.

Cian Dorr, Jacob M. Nebel, and Jake Zuehl. The case for comparability. *Noûs*, forthcoming. DOI: 10.1111/nous.12407.

¹⁶ I’m not sure whether this data works. It seems that this reply should be used to argue against presupposing the *existence* of any required option, rather than its *uniqueness* (which the authors here are concerned with). I think what they want to have here is something like ‘Wait, why do you assume that only one is required?’ But if one finds this response unnatural, it seems that one would be on the same ground find (7) unnatural. Then it seems like the awkwardness of (5) doesn’t derive from presupposing something as strong as (6), but simply due to the fact that we don’t say sentences like (5).