DRAFT: Hume's Combinatorial Modal Theory

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In the *Treatise of Human Nature,*[1] Hume commits himself to what we can call the Conceivability Criterion of Possibility:

CCP: if some state of affairs S is conceivable, then S is metaphysically possible.[2]

CCP is not original to Hume: other early modern philosophers, notably Descartes, also held this view.[3] But Hume's views on cognitive psychology turn **CCP** into a powerful premise in some of his most famous arguments. It is crucial to Hume's system in the *Treatise* that the mind possesses only one representational faculty: the imagination.[4] In Hume's view of the mind, to conceive some state of affairs simply is for ideas in the imagination to be arranged in such a way as to represent that state. So Hume is also committed to:

One Cognitive Faculty: A state of affairs is imaginable iff it is conceivable.

Any states of affairs that are imaginable are also conceivable, and they are therefore real metaphysical possibilities by **CCP**. Given the view that there is only one cognitive faculty, **CCP** justifies some of Hume's most significant metaphysical and epistemological commitments. For example: if we merely grant that we have the ability to *imagine* an object beginning to exist without a cause, we are thereby committed to Hume's conclusion that it is not metaphysically necessary for every beginning of existence to be caused.[5]

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[1] Hereafter cited as 'T' followed by Book, section, part, paragraph numbers as found in Norton and Norton (2000).
[2] T 1.1.7.6; T 1.2.2.8. I borrow this terminology from Garrett (1997), Ch. 1.
[3] Norton and Norton (2007) identify Descartes' *Objections and Replies*, Arnauld and Nicole's *Logic*, and Gravesande's *Explanation of Newtonian Philosophy* as containing predecessors of the conceivability criterion.
[4] See Garrett (1997) Ch.1. The rejection that a separate faculty – for example, the *intellect* – is involved in conception and representation is a pillar of Hume's philosophical system in the *Treatise*.
[5] Hume has some arguments at T 1.3.3 for why we should think we can imagine this, but the crucial point is that imaginability is all he needs to argue for to get this conclusion.

The methodology of this paper is to investigate the limits of the Humean imagination to gain insight into the range of metaphysical possibilities in Hume's system. I begin with Hume's claim that the imagination has the capacity to separate, conjoin, and recombine any of its ideas.[6] In section 1 I argue that Hume is committed to the view that if some arrangement of external relations r is imaginable among *some* objects, then it is imaginable among *any* objects which can participate in relations of the same type as r. In section 2, I consider a case study that highlights the payoffs of this analysis. I argue that Hume utilizes this recombination principle in his argument that causes must precede their effects at T 1.3.2.7, which I'll call the Priority Argument. In particular, I argue that the recombination principle licenses an inference in the Priority Argument which is otherwise difficult to justify on Hume's behalf. I take Hume's implicit use of the recombination principle as evidence that he was aware that his views committed him to this combinatorial modal theory.

Section 1: Relation recombination

There are many ways of thinking about recombination principles. For example, Efrid and Stoneham (2008) exposit and defend a Lewisian conception of modal recombination based on the claim that *anything can coexist with anything else and anything can fail to coexist with anything else*.[7] It is not hard to make the case, based on his Separability Principle, that Hume has a similarly combinatorial view in the case of *objects*: any two distinct objects could coexist or fail to coexist.[8] In this paper, I am concerned with Hume's views on recombination in the case of *relations between objects*. Recombination principles for relations are more complicated than for objects. In fact, it will *not* turn out to be the case for Hume that a relation could coexist with anything and fail to coexist with anything. But before we

[6] T 1.1.4.1, T 1.3.7.7.
[7] This is Lewisian in that it is a working out of Lewis' suggestions in his (1986).
[8] See Garrett (1997), Ch. 3's argument that Hume endorses the Separability principle in the case of objects.

can tackle the metaphysical question of recombination, we must begin with our representational capacities, which are our guide to metaphysical possibility in Hume's system.

Some terminology to start. I will use the notion of an *arrangement* of relations. To understand what this means, imagine three objects (A, B, and C) lined up next to each other in a straight line, three feet apart from the nearest object. We can find many relations between them: A is to the left of B, and B to the left of C; A is closer to B than to C; etc. Each of these relations is a particular token of a broad *kind* of relation, the spatial kind. I'll refer to the structure of relations in this state of affairs as the *arrangement* of relations in this state of affairs. If we replaced A, B, and C for three other objects (D, E, F) in our example, but maintained all the relations the same, we would have a new state of affairs consisting of the *same* arrangement of spatial relations, but distinct objects. The relations in this new state would be isomorphic to those in the previous, and the only difference would be which objects are being related by them. Note that these arrangements will always have a relation-type. In the example it is an arrangement of *spatial* relations, but it could also be an arrangement of spatio*temporal* relations if I added considerations about temporal priority, or even an arrangement of spatiotemporal-*causal* relations if it also included details about what causes what.

An unrestricted recombination principle for a relation-type R, as I am defining it, is a principle which says that whenever it is possible for an arrangement r of type R to be imagined to hold among some n objects, it is also possible to imagine r holding among *any* n objects. I'll argue Hume does have a recombination principle for certain relations (which I call external), but it is not unrestricted.

Section 2: External relations and recombination

Hume claims in T 1.1.4.1, is that "all *simple* ideas may be separated by the imagination, and may be united again *in what form it pleases*" (emphasis added). The claim that the imagination may reunite

ideas in "what form it pleases" suggests that there are no limitations on how the imagination can re-arrange an idea once it has access to this idea. Later, Hume gives similar formulations that are not restricted to *simple* ideas only. For example, at T 1.3.5.3 he claims the imagination "transposes and changes them [i.e., its ideas] as it pleases", in contrast with the memory which presents ideas in the same arrangement as the impressions they are derived from.[9]

So far, these have all been statements about separating, combining, and mixing *ideas* in the imagination. For the purposes of understanding Hume's view of metaphysical possibility, however, we need a recombination principle that applies not merely to ideas in the mind, but to the *objects* which those ideas represent. Hume seems to think that he is entitled to appeal to such a recombination principle of objects. At T 1.3.7.7, he says "the imagination has command over all its ideas, and can join, mix, and vary them in all the ways possible. *It may conceive objects with all the circumstances of place and time*. It may set them, in a manner, before our eyes in their true colours, just as they might have existed" (emphasis added). We should take note of the quick shift from talk of recombining ideas in the imagination to the claim that we can conceive objects with any spatiotemporal relations. I have not made the case that Hume is entitled to this inference, but it is quite clear that Hume himself thought he was justified in assuming that the imagination could recombine objects into spatiotemporal relations as it pleases.

A recombination principle follows from Hume's statement at T 1.3.7.7: If I can imagine some objects being 5 feet apart, then I could imagine any objects being 5 feet apart.[10] After all,

[9] As Garrett (1997) has noted, Hume uses 'imagination' in more than one way. Sometimes he uses it to refer to the mind's representational capacities as a whole, which includes the capacity to have memories. Sometimes he uses imagination more narrowly to mean all of our representational capacities *except* our memory.

[10] It might seem from Hume's phrasing of the principle that we don't need this statement to be in the form of a conditional. We might simply phrase it as the principle "a mind can imagine any objects being 5 feet apart". But Hume *does* need to conditionalize this principle. Someone might simply never have acquired ideas of spatiotemporal relations. Given Hume's empiricist assumptions, we cannot assume that this person is able to imagine objects being 5 feet apart. But given that one is able to imagine some objects as being 5 feet apart, which requires spatial concepts, it follows that one could imagine any objects in such a circumstance. This is why the imagination's powers need to be considered as

'being 5 feet apart' is a "[circumstance] of space and time", and I can imagine objects with any and all spatiotemporal circumstances.

Spatiotemporal relations are only one of 7 types of relation Hume identifies at T 1.3.1. The statement of the recombination principle I cited at T 1.3.7.7 does not state that *only* the spatiotemporal relations among objects can be recombined; but it doesn't mention the other kinds. I aim to show that space and time must only be an example of a broader principle, one which applies to any *external* relations.

2.1 Internal and External relations in Treatise 1.3.1.1

At the start of Part 3 of Book 1 of the *Treatise*, Hume distinguishes two kinds of relations. The first are relations which "depend entirely on the ideas they relate" (T 1.3.1.1). The relation of *resemblance* is a paradigm case. If I think of two blue dots, I have thereby thought of two things which are related by the 'same color' relation. I cannot replace the two blue dots with any arbitrary object without thereby destroying the 'same color' relation that held between them. Hume counts "resemblance, contrariety, degrees in quality, and proportions in quantity or number" as relations that depend entirely on what they relate (T 1.3.1.1). I will refer to these as relations that are *internal* to their relata. To think of two objects is to think of the internal relations between them, because these are relations that result from properties that are inseparable from their objects.

There are three other relations – spatiotemporal relations, causal relations, and relations of identity[11] – which Hume says "may be chang'd without any change in the ideas" of the objects they relate. Unlike the first class, these relations are entirely independent of their objects. I will refer to

being *combinatorial* rather than simply *spontaneous*: it can recombine relations it is acquainted with among objects it is acquainted with, but it does not follow that it can always generate new ones.

[11] Hume does not think of identity as a reflexive, symmetric, and transitive relation holding between all objects and themselves, as contemporary philosophers might. He instead uses identity to denote something closer to the 'identity-over-time' relation holding between the temporal parts of an object represented as enduring. See T 1.4.2.30.

these as relations that are *external* to their relata. To think of two objects is not yet to think of their causal, spatiotemporal, or identity relations, and one can always think of the objects without any particular external relations holding between them.

There can be no non-trivial recombination principle for internal relations.[12] Recombination is simply the ability of the mind to exchange some objects for others while maintaining their circumstances the same. This cannot be done with relations that depend entirely on their relata. If I think of two blue dots and thereby think of the 'same color' relation holding between them, there is no meaningful sense in which I could 'replace' one of the objects while maintaining the relation unchanged. Internal relations, in virtue of being internal, are not the kind of relation whose objects can be recombined.

The same does not apply for external relations, which we can see from their definition. Hume says external relations can always be changed – that is, some particular relation-token can cease to hold and be replaced with a different token of the same type - without any change in their objects. If I can think of two objects as being 5 feet away from each other, I can also think of those objects *not* being 5 feet away from each other, or instead standing in any other token of the same type (spatial). In what follows I argue we can derive a recombination principle from these definitions of types of relation.

[12] There might be a *trivial* recombination principle for internal relations, on the right reading of the non-contradiction clause. To think of two objects as being related by the *same colour* relation entails a contradiction if these objects are distinct colours – we would be imagining the *same colour* relation to both hold and not hold at once. As a result, once we eliminate all contradictory cases of two objects related by the *same colour* relation, we end up with a trivial result that any rmaining object which is substituted into this state of affairs will indeed be standing in the *same colour* relation. It should be clear there is no interesting philosophical upshot to this trivial recombination principle for internal relations, which is why I stick to the non-trivial principle for external relations. Thanks to Trevor Teitel for helpful discussion of this.

2.1 Restricted recombination for external relations

It is clear from Hume's definition of external relations that some recombination principle must hold for them. Consider the case of causation. If we have a non-combinatorial view of causation, then there could be some objects A, B, and C such that A can be caused by B but never by C. This is impossible given Hume's statement that external relations can always be changed without changing their objects. When we stipulate that A and C can't be causally related, we are committing ourselves to the claim that some changes in the causal relation *do* necessitate changes in the objects themselves – for example, C couldn't stay the same while its causal relations change to include a causal relation to A.

We should not be too quick to think this recombination principle will be *unrestricted*, however. A recombination principle for a relation type R is unrestricted if it says that if some relation of type R is imaginable among some objects, then it is imaginable among any objects. But this is too strong for Hume. For example, he believes certain objects – like *passions* – are not spatially located and stand in no spatial relations whatsoever. If we had an unrestricted recombination principle, we could recombine the objects of the state *my chair is five feet away from my desk* into the state *my anger is five feet away from my desk*. This leads to contradiction: my anger is both non-spatial and standing in a spatial relation. Since Hume thinks contradictions are unimaginable (and impossible), this is an unacceptable result.[13]

We can formulate a principle which does not give rise to contradictions by adding the following clause: the recombined objects in the newly imagined state must each be *imaginable in at least one relation of the same type as that of the arrangement*. Since passions cannot be imagined in any spatial

[13] Lightner (1997)

relations, they cannot be recombined into states of affairs involving spatial relations.[14] Our restricted recombination principle for external relations would then look like this:

> **Imagination Recombination (IR):** If it is imaginable that some arrangement of external relations r of type R holds among *some* objects, then it is imaginable that the same arrangement holds among *any* objects which can be imagined in some arrangement of type R.

It's worth pausing to think about this final clause, that the objects in the recombined state must be objects we can imagine in some relation of the same type as our arrangement. To understand why this is so, we can think about Hume's contradiction principle: it is impossible to imagine a contradictory state of affairs, a state in which something both exists and does not exist.[15] There are two ways such a contradiction could arise with respect to **IR**. A contradiction could arise if the external relations are incompatible: for example, a state in which an object A is thought to be earlier than B and B thought to be earlier than A. Since the arrangement of external relations must be isomorphic in the original case and the recombined case, this would mean the initial arrangement is not imaginable to start with. If contradictions arise only after the recombination, they must arise because of the *internal* properties of the new objects, those properties that are inseparable from the objects (which is why they give rise to internal relations). The blueness of a blue dot and the non-spatiality of a passion are both inseparable from these objects.

We can put together this thought about internality and contradiction with the definition of external relations to get our restricted recombination principle. Since an object's internal properties are inseparable from it, this means that if an object cannot be imagined in *some* external relation r of

[14] Hume is clear that even the imagination cannot represent passions or other perceptions as having a location (T 1.4.5.10.
[15] Lightner (1997)

type R, it cannot be imagined in *any* relation of type R. There are no objects that could be imagined to be 5 feet away from each other, but not 10 feet away from each other. This would require a certain token of an external relation to be special with respect to this object; but as Hume says in defining externality, the tokens of external relations can always be substituted for other tokens of the same type regardless of the objects.

This leaves us with the following disjunction. If an object A cannot be imagined in an external relation r of type R, then either (i) r involves incompatible external relations, so *no* object can be imagined to participate in r; or (ii) A cannot be imagined to participate in any relation of type R, because it is internally incompatible with R-type relations. If we derive a contradiction from recombining objects of external relations, it either means the relations were incompatible to begin with, or the new objects are not of the right kind to participate in relations of this kind at all (as with passions and spatiality).

Finally, it is important that spatiality is a special case for Hume: there are no objects that are non-temporal or non-causal the way passions are non-spatial.[16] Hume explicitly says that every object can be conceived to participate in some causal relation or another (T 1.3.2.5). And a non-temporal object is one that could never be followed or preceded by anything. Such an object would be a necessarily eternal existent, an unchanging being that could never begin to exist or stop existing. There is no place in Hume's system for an object like this. This means that as long as our initially imagined arrangement of external relations r involves no spatial relations, any contradictions arising from recombining r's objects must be due to an incompatibility in r's external relations. If a spatial relation is part of the arrangement, then we must also check whether the contradiction arises from the inclusion of a non-spatial object in the recombined state of affairs.

[16] For simplicity I leave out identity relations, but these ultimately will be analyzed in terms of temporal relations so no objects will be incompatible with these either.

Section 3: Metaphysical Recombination and the Priority Argument

3.1 Metaphysical Recombination

We can now straightforwardly derive a *metaphysical* recombination principle for external relations. Given that Hume accepts **IR**, **One Cognitive Faculty**, and the **Conceivability Criterion of Possibility**, the following principle must also hold:

> **Metaphysical Recombination (MR)**: if it is imaginable that some arrangement of external relations r of type R holds among *some* objects, then it is metaphysically possible that r holds among *any* objects which can be imagined in some arrangement of type R.[17]

Metaphysical Recombination follows from views Hume accepts once we have the restricted recombination principle of the imagination, **IR**. But at least two questions remain. First, was Hume himself aware that **MR** follows from the views he endorses in the *Treatise*? And second, does **MR** affect how we should interpret Hume's philosophical project in the *Treatise?*

In partial response to the first question, we should recall that at T 1.3.7.7 Hume formulates a recombination principle with reference both to the imagination and conceivability. It seems likely that he would have seen the connection between **IR** and **One Cognitive Faculty**. These considerations give us some reasons to think Hume should have been aware that something like **MR** follows from his principles. But he never explicitly draws this connection nor formulates recombination principles explicitly in their full generality (i.e., with respect to external relations).

[17] We should make note of how I've translated the representational terminology in **IR** to the metaphysical terms in **MR**. First, we still start from an *imaginable* state of affairs, since **CCP** only gives us a one-way entailment from conceivability to possibility, and not the other way around. Once we have an imaginable state, we could always imagine a different state with the same arrangement of relations but any arbitrary set of imaginable objects (excepting contradictions). Once we have this second state, we can apply **CCP** to conclude that the latter state is metaphysically possible. Finally, if there are objects we can't imagine (but that are metaphysically possible), then we can also know that these objects could participate in these relations unless it entailed a contradiction, since the contradiction principle is our only guide to metaphysical impossibility (see section 1.1).

The second question concerns why this analysis matters. What can we learn, either philosophically or exegetically, from the fact that Hume is committed to **MR**? In answer to this question I spend the next subsection considering a case study. My aim is to show that Hume makes an argument in Book 1 of the *Treatise* which requires **MR** for validity. The argument comes at T 1.3.2.7 – crucially, this is the section *after* Hume has defined the differences between internal and external relations. This means that by this point he has already said enough for us to derive **MR** via the recombination principle that falls out of his definition of external relations.

3.2 The Priority Argument

In T 1.3.2 Hume is setting up his discussion of the causal relation. In 1.3.2.7, he argues that it is *absolutely* (i.e., metaphysically) *impossible* for a cause to be simultaneous with its effect. Rather, every cause must precede its effect in time. I call this the Priority Argument. Hume's strategy in the Priority Argument is to conditionally assume that it *is* possible for a cause to be simultaneous with its effect, and then derive a contradiction from some plausible premises. I do not explicate the argument in its entirety here as it involves a variety of complex considerations.[18] At the start of the argument, however, Hume says the following:

> 'Tis an establish'd maxim both in the natural and moral philosophy, that an object, which exists for any time in its full perfection without producing another, is not its sole cause; but is assisted by some other principle, which pushes it from its state of inactivity, and makes it exert that energy, of which it was secretly possest. Now *if any cause may* be perfectly co-temporary with its effect, 'tis certain, according to this maxim, that *they must all of them be so*; since any one of them, which retards its operation for a single moment,

[18] A significant amount of ink has been spilled on this argument, though to my knowledge only Ryan (2003) explicitly identifies the premise I consider here. For competing interpretations of the Priority Argument, see Beauchamp and Rosenberg (1981), Brand (1980), Costa (1986), Fogelin (1976), Kline (1982, 1985), Lennon (1985), and Munsat (1971).

> exerts not itself at that very individual time, in which it might have operated; and therefore is no proper cause.[19]

Ryan (2003) has helpfully reconstructed this section of the Priority Argument as follows:

1. At least one sufficient cause is possibly simultaneous with its effect (assumption for conditional proof).
2. All sufficient causes act as soon as possible [the "establish'd maxim"].
3. If a sufficient cause is possibly simultaneous with its effect, then it is in fact simultaneous with its effect (from 2).
4. At least one sufficient cause is simultaneous with its effect (from 1 and 3).
5. If at least one sufficient cause is possibly simultaneous with its effect, then all sufficient causes are possibly simultaneous with their effect [*enthymematic premise*].
6. All sufficient causes are possibly simultaneous with their effect (from 1 and 5).
7. All sufficient causes are in fact simultaneous with their effect (from 3 and 6).[20]

Hume is arguing that if it is possible for even one cause to be simultaneous with its effect, then it is necessary that all causes must be simultaneous with their effects.[21] Ryan identifies that this only follows if we assume that what is possible for one cause is possible for all: this is the content of the enthymematic premise he attributes to Hume (premise 5). Ryan suggests this might be the result of the broader principle that "all causes are on the same metaphysical footing," which he argues is plausible because "[i]n every metaphysical debate there exists a presupposition that all of the entities in a particular class possess the same metaphysical status."[22]

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[19] T 1.3.2.7; emphasis added.
[20] From Ryan (2003) p.36
[21] This is the intermediate result Hume is looking for in the first half of this argument. He goes onto argue that if all causes acted simultaneously, then all objects would exist simultaneously, and there would be no succession of them. Given his metaphysics of time, he concludes this would result in the "utter annihilation of time." He takes this to be an absurd conclusion that completes the *reductio*. However, he then goes on to claim that if readers find this argument uncompelling, they should simply grant Hume the point and move on, "for [they] shall find, that the affair is of no great importance." There is surely a complicated story explaining how this second half (and final disclaimer) fit into Hume's considered views on the topic, but that is well out of the scope of this paper.
[22] Ryan, p.38.

We get a better account by noting that premise (5) follows straightforwardly from **Metaphysical Recombination.**[23] This enthymeme states that if it is possible some two objects are related by both causation and simultaneity, then it's possible for any two objects to be related by both causation and simultaneity. Since both temporal and causal relations are external, we can apply **MR** to derive (5) as follows. Two objects being related by both simultaneity and causation is an arrangement of external relations. By **MR**, if an object could participate in some temporal-causal arrangement – for example, if it could be caused by something that precedes it – then it can participate in any causal-temporal arrangement that does not include incompatible external relations. As I argued at the end of 2.1, all objects can participate in at least one causal-temporal arrangement (nothing is non-temporal or non-causal). And if there could be one case of simultaneous causation, which is the antecedent of the conditional (5), then simultaneous causation is not an incompatible arrangement of relations. According to Hume's modal metaphysics, it follows from this that any two objects whatsoever could be related by both simultaneity and causation.

Hume's final aim in the Priority Argument is to show that simultaneous causation is impossible, meaning it could never hold among any objects. Here too my analysis of **MR** can help us. Since there are no non-temporal or non-causal objects for Hume, if any contradiction is derived from imagining a temporal-causal arrangement r, then the arrangement r must include incompatible relations, meaning *no* object could participate in r. This is precisely Hume's strategy in his reductio: assume conditionally that some objects can be simultaneously caused to show that this leads to a contradiction. Given Hume's modal metaphysics, he would then be warranted in concluding the

[23] Ryan's explication also has some independent problems. Hume's argument is targeting the view that some causes are possibly simultaneous while others are not. Someone with this view would likely think these two types of causes are *not* on the same metaphysical footing. For example, Scholastic philosophers like Bonaventure, who held precisely the view that some causes could be simultaneous while others couldn't, defended it on the ground that the essential properties of some objects made simultaneity possible for those objects but not others. See Fox (2006) for a thorough account of views on simultaneity in 13th Century European philosophy.

arrangement involves incompatible relations, meaning no objects can be related both by causation and simultaneity.

Conclusion

We saw in sections 1 and 2 that Hume's views on cognitive psychology, together with his views on relations and metaphysical possibility, commit him to a recombination principle for external relations (spatiotemporal, causal, and identity relations). In Section 3, we saw a case study showing that the resulting combinatorial metaphysics given by **Metaphysical Recombination** can shed light on an otherwise difficult-to-explain inference in Hume's treatment of causation. Hume never explicitly states **MR**, but we have good reason to think he was relying on this combinatorial metaphysics of external relations in his argument against simultaneous causation.

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