

## Introduction

# Composition, Counterfactuals, Causation

The problems of how the world is made, how things could have gone, and how causal relations work (if any such relation is at play) cross the entire historical development of philosophy. In the last forty years, the philosophical debate has given these problems a prominent role in its agenda, and David Lewis has suggested methodologies and theories that have contributed to enrich our notions in the fields of mereology, modality and the theory of causation. Such contributions have been among the most influential in analytic philosophy. The following theses – among others – have been milestones for the current philosophical debate:

- 1) The relation of parthood is exhaustively characterized by classical extensional mereology.
- 2) Every contingent feature of our world is determined by some “fundamental” physical properties and by the spatio-temporal relations between their bearers.
- 3) The evaluation of any counterfactual conditional involves a particular kind of similarity relation between the actual world and the scenario presented by the conditional.
- 4) Causation consists in a particular form of counterfactual link between the cause-event and the effect-event.

Many different philosophers have taken the above issues as points of reference, while revising in depth important aspects of the general picture. Some philosophers have accepted the idea of a mereological constitution of the world, while at the same time admitting universals as relata of the part-whole relation – contrary to Lewis’s nominalist stance. Many have accepted that counterfactuals are to be explained as a linguistic and modal phenomenon - not as a meta-linguistic one – but dismiss any analysis of counterfactuals in terms of similarity. Many accept the idea that causality implies some “resistance to counterfactual situations”, and yet find the details or methodology of Lewis’s theory of causation quite unsatisfactory.

The views evolving from the criticisms or acceptance of 1-4 are still lively and ongoing. The idea behind this issue is to offer a ready-made representation of the most recent theories and position which are emerging in the debate and take David Lewis as their main theoretical source, critical target, or point of departure.

A possible point of originality in our approach is that the most famous Lewis's doctrine – the so-called modal realism, according to which possible worlds are concrete entities – is not given prominent attention. Modal realism is still a lively option in the philosophical debate and has been important for Lewis also as a source of ideas about seemingly unrelated topics. However, as Lewis himself was ready to admit, modal realism is also a highly controversial and counter-intuitive doctrine, and often elicits harsh reactions. Since many (and perhaps most) Lewis's contributions to the theory of constitution, counterfactuals and causation can be adopted or rejected independently of modal realism, it would be unwise to be driven primarily by these harsh reaction when dealing with these topics. For this reason, our approach is to keep modal realism as apart as possible.

The first part of the issue includes six original papers. Some of them share a common theme, and the order tries to respect these affinities. In the first paper (“Counterfactual Fallacies”), Andrea Iacona argues, *contra* Lewis, that counterfactuals can be formalized as strict conditionals (that is as conditionals prefixed with a modal operator), without incurring in fallacious inferences. The proposed formalization incorporates Lewis's analysis in terms of similarity in the content of the strict conditional.

In his “The Large-Scale Joints of the World”, Ned Hall takes Lewis's thesis that there are objective joints in nature as his starting point, while admitting that (i) there is no straightforward way to specify how lower-level objective joints determine or ground the objective joints which should characterize the higher levels; (ii) Lewis's notion of causal explanation – needed for addressing point (i) – does not come with the required explanatory depth. In order to block these two problems, Hall proposes that causal explanations must provide causal information in a cognitively effective way, and admits that the naturalness of joints may come in *degrees*. The resulting perspective is quite interesting: though there is a fundamental level of the world whose features do not depend on our cognitive enterprise, there is *no* single way to describe its causal structure when it comes to higher levels (at least). By imposing some

taxonomies, we select the description of the causal structure that prove cognitively more effective.

The next two papers concern the theory of constitution, and are in general quite critical with Lewis's conviction that classical extensional mereology is the general, exhaustive theory of constitution. In "Any Sum of Parts of Water is Water", Henry Laycock provides some reasons to doubt the common assumption that the semantics of mass-terms (such as "water") directly satisfy mereological principles. Laycock assumes that mereology is an unsatisfying theory of constitution for structured organisms or artifacts, and aims to dispel also the illusion that the references of mass-terms are instead examples of concrete entities for which, in particular, extensionalism and unrestricted composition hold true.

Massimiliano Carrara and Enrico Martino ("Four Theses on the Alleged Innocence of Mereology") choose as critical target the idea that mereology is "ontologically innocent", in the sense that, given certain objects, there is no further ontological commitment to their mereological sum. Their conclusion is that the arguments for the innocence thesis are not conclusive, and that the thesis itself is ambiguous. Moreover, they construct a mereological model for a substantive fragment of set theory, arguing against the innocence of mereology with a strategy already adopted by Quine for second-order logic.

Andrea Borghini and Giorgio Lando deal with a controversial aspect of Lewis's doctrine of natural properties. According to a common interpretation of this doctrine, natural or fundamental properties, upon which every contingent feature of the world is expected to supervene, are instantiated only by minimal physical particles. In "Natural Properties, Supervenience, and Mereology", they argue that there are reasons internal to a broadly Lewisian kind of metaphysics (and in particular to mereology) to think instead that natural properties are spread at several levels of reality.

In the last paper, Giuliano Torrengo ("The Modal Dimension") discusses the hypothesis that modality is a genuine, fifth dimension of entities, on a par with spatial dimensions and time. His analysis focuses in particular on the so-called *tensed properties* and on the ontological status of modal wholes.

The issue includes also a large section of book commentaries. First of all, Lewis's books which are relevant for our topics are analysed, in order to see what in them is still relevant and worth debating and what – on the contrary – can be considered obsolete. Vittorio Morato delves into the many philosophical issues connected to *Counterfactuals*, compares Lewis's

semantics for counterfactuals with the then dominant approaches, presents the semantics devised by Lewis and comments on some interesting – and sometimes overlooked – conceptual issues which arise from such a semantics. In particular, Morato comments on the failure of *Conditional Excluded Middle* and some other laws, which set apart Lewis's theory of counterfactuals from Stalnaker's, and stresses an interesting fact: some problems in deontic logic and in the logic of counterfactuals seems to be solved by employing basically the same strategy. Louis deRosset reviews the most important points of Lewis's masterpiece *On the Plurality of Worlds* and some objections raised against them in the literature, concluding that the continuing influence of this book on contemporary philosophy depends more on its methodological assumptions (in particular the kind of reductionism it proposes) than on the specific contents of modal realism. Finally, Einar Bohn chooses to concentrate on a single topic of *Parts of Classes*: the so-called doctrine of "composition as identity". According to Bohn, Lewis's version of this doctrine is that composition is a genuine case of identity, and not merely that composition is analogous to identity under certain respects, as it has been often interpreted. Once the thesis is properly understood in this way, it is possible to look more closely at its problems and hidden assumptions.

After that, two commentaries are devoted to books in philosophy of physics, where some pivotal theses of Lewis's metaphysics are criticized from the point of view of contemporary physics. George Darby discusses *What's Wrong with Microphysicalism?* by Hüttemann, while Emiliano Boccardi deals with *The Metaphysics within Physics* by Maudlin. These books are representative of a quite wide-spread critical attitude towards the prevailing *a priori* character of metaphysics in the Lewisian tradition and in favour of a more scientifically informed approach. Darby in particular, while being sympathetic with this kind of scientism, shows that the Lewisian metaphysician could still reply in an interesting way to some of the objections and that, on the other side, also the theses more directly inspired to contemporary science are sometimes in need of a philosophical, *a priori* clarification.

Laura Castelli and Tuomas Tahko comment upon two books where Lewis's mereological theory of ontological constitution is compared and contrasted with ancient philosophy. These books are interesting for two main reasons: first, Lewis's definite and radical stance on these issues comes out as a useful point of reference and conceptual tool also for historians of philosophy; second, they show that classical extensional mereology, assumed by Lewis to

be an innocent, crystal-clear and general theory, is in sharp contrast with some important philosophical traditions, in particular when counter-intuitive principles such as unrestricted composition and composition as identity are at stake. Castelli analyses *Plato on Parts and Wholes* by Harte, where Plato's intensional approach to parthood is reconstructed and deemed to be preferable to Lewis's extensionalism, while Tahko scrutinizes Koslicki's development of an Aristotelian hylomorphic theory of constitution in her *The Structure of Objects*.

The last commentary, by Daniele Chiffi and Silvia Gaio, is about an important paper by Sider, "Temporal Parts". Sider's views in this paper about mereology and philosophy of time are deeply influenced by Lewis.

The issue is completed by a review and a conference report. Giulia Felappi reviews *Metametaphysics*, edited by Chalmers, Manley and Wassermann. This collection of papers is devoted to understanding whether metaphysics – Lewis's one included – is possible, useful and what it is really about. Finally, Adriano Angelucci gives an overview of a conference on the philosophy of Lewis held in Urbino in June 2011, another important sign that the interest in his thought is alive and widespread.

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