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# Wondering about the Impossible: On the Semantics of Counterpossibles

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*To all those, who sparked my philosophical wonder*

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My first thoughts about writing this book arose while I was attending a seminar on conditionals taught by Graham Priest and Harty Field in the 2014/15 academic year, in New York. During these classes, I learned (among other things) that the problem of counterpossibles had been largely neglected in the mainstream of work on the philosophy of conditionals. Since then, however, this problem has received significantly more attention from scholars. And, as a result of this increased attention, we can no longer simply point to a ‘default’ school of thought on either the role or the truth-values of counterpossibles.

We can attribute this shift in interest in part to the increased attention that the concept of impossibility has received in the field of modal philosophy over the past decade. What was once considered little more than an exotic area of modal philosophy has now become a fascinating subject for semantic and metaphysical analysis. I am grateful for the financial support provided by the National Science Center (NCN) (Grant No. 2016/20/S/HS1/00125), the Foundation for Polish Science (FNP) (Program START 2017), and the Kosciuszko Foundation, which allowed me to have a front-row seat while I witnessed this transformation. Their support enabled me to participate in numerous philosophical workshops, conferences, and seminars held in Amsterdam (a research stay at the Institute for Logic, Language and Computation, 2018), Budapest (CEU Summer Course, 2018 and 2022), Buenos Aires (V Workshop on Philosophical Logic, 2016), Bratislava (Issues in (Im)possible Worlds 2017), Cracow (CWAP: Cracow Workshops in Analytic Philosophy, 2017), Hamburg (Summer School, 2019 and 2020), Kazimierz nad Wisłą (Realism: Epistemological Foundations and Metaphysical Implications), Lublin (Proceedings of the Polish Philosophical Association, 2017), Łódź (PhiLang, 2019), Milan (Fine-Grained Semantics (Trends in Logic XVIII), 2018), Munich (ECAP 9, 2017), New York City (Logic and Metaphysics Workshop, 2023), Paris (Conditionals in Paris – Logic, Linguistics and Psychology, 2019), Poznań (Proceedings of the

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## 0. Introduction

Wondering is an inherent aspect of our intellectual life. This is often called ‘hypothetical reasoning’ and is crucial not only for academic inquiry but also abounds in our everyday lives. Regardless of whether one regrets choosing a taxicab over the subway, contemplates the results of an election turning out differently, formulates a hypothesis, or daydreams, one asks oneself ‘What would have happened if...?’ While wondering usually concerns possible situations, we can (and do) wonder about the outcomes of impossible ones too. Thus we may ask, What if whales were fish? What if a man could be in two places at the same time? What if one could draw a round square? Just as in the case of merely possible scenarios, we try to provide answers to such questions. Moreover, we consider some of these answers better than others. Or at least that seems to be the case. Some philosophers, however, put this into question and argue that all answers concerning the outcome of an impossibility are equally right (or wrong). Others favor the opposite view and insist on a distinction between right and wrong answers. Two opposing sides are enough to start a debate, and the one concerning hypothetical reasoning about impossibilities is called the debate over *counterpossibles*.

For many decades, most theoreticians believed that the role of conditional reasoning about impossibilities was rather marginal and unimportant. Thus, questions such as ‘What would happen if Kate drew a round square?’ were swept aside as colorful, but not serious enough to be answered. In some cases, this attitude seemed to be the result of theoretical complications that would arise once one tried to take the above questions seriously. This made the problem of counterpossibles difficult to address but easy to postpone.

While the problem may seem marginal, the result of this debate should not be neglected. This is partly because the notion of impossibility seems to play a more important role than many thought it does. As such, it goes beyond examples that one only hears about during philosophical seminar meetings, and thus it calls for attention. Importantly, since wondering

about the impossible is *a kind* of wondering, the question of which side of the debate is right affects our understanding of hypothetical reasoning in general. Therefore, the question of ‘What would happen if Kate drew a round square?’ should not be treated less important or genuine than the question of ‘What would happen if Kate drew a square?’

### Aims of this book

This book argues for the importance and commonness of reasonings concerning impossibilities. Its aim is twofold – descriptive and constructive. Since hypothetical reasoning about impossibilities calls for explanation, the book provides a comprehensive guide through popular semantic theories of conditionals. Each is examined from the perspective of the question of impossibilities and the logic and metaphysics surrounding them. Since this is meant to be a guide, my intention is to provide an accessible description of each position together with critical remarks. While in some cases extending theories to account for impossibilities is more difficult than in others, I argue that these problems are not *caused* by the extension but merely *revealed* by it.

The above provides the ground for a further aim. In the final chapter, I endeavor to combine the best features of the existing theories and explore the possibility of a novel hybrid account. Since the central notion of this position is that of dependence, I call this simply the Dependence Account of Counterfactuals (DAC). The aim of DAC is to provide a unified truth criterion for expressions of hypothetical reasoning.

### The structure of the book

#### Chapter 1: The Question of Counterpossibles

I begin with the justification of the importance of the analysis of counterpossibles. This is done by explaining why conditionals are an inherent aspect of our intellectual life and how



counterpossibles are related to that fact. The chapter includes an indication of the complexity of the analysis of conditionals (1.1.). It shows the most popular distinctions among conditionals and explains why the problem of conditionals is a subject of interest to philosophers, psychologists, and linguists. Further (1.2.), it provides a characterization of counterfactuals as a particular type of conditional, along with properties that allow them to be contrasted with indicative conditionals. Finally (1.3.), the question of counterpossibles is introduced. It is argued that considering the close bond between the role of counterfactuals with merely possible antecedents and those with impossible antecedes provides a good reason for considering their analysis equally important for an adequate understanding of subjunctive conditionals. The chapter closes with a general characterization of a variety of approaches to the analysis of conditionals and justifies narrowing the number of approaches that are included in this monograph (1.4.).

## Chapter 2: Inferentialism

This chapter is dedicated to one of the most popular approaches to counterfactuals, which tracks back to the works of John Stuart Mill and Frank Plumpton Ramsey. According to this “‘If  $p$  then  $q$ ” means that  $q$  is inferable from  $p$ , that is, of course from  $p$  together with certain facts and laws not stated but, in some way, indicated by the context’ (Ramsey 1931, p. 248). Since the consequent of a counterfactual is meant to be somehow inferred (with the support of particular facts and laws) from the antecedent, this approach is sometimes labeled ‘support theory’ or ‘inferentialism.’ The key question of inferentialism is how to characterizes these facts and laws. This was a topic of interest for the two most prominent advocates of 20th-century inferentialism – Nelson Goodman and Roderick Chisholm.

The first subsection (2.1.) of this chapter is dedicated to the so-called metalinguistic approach advanced by Nelson Goodman. It mostly focuses on the notion of cotenability, which,

on the one hand, plays a key-role in Goodman's analysis and, on the other, makes this analysis circular. Further, Roderick Chisholm's alternative approach is taken into consideration (2.2.). While it is not committed to the notion of cotenability, the relation between Chisholm's analysis of counterfactuals and the definition of laws makes it circular as well. The last section focuses on a contemporary version of inferentialism, which has been advocated for in the works of (among others) Igor Douven, Karolina Krzyżanowska, and Sylvia Wenmackers (2.3.). Modern inferentialism is deeply rooted in the results of empirical research and moves the burden of the question of the semantics of conditionals towards its pragmatics. This section contains a sketch of the core of the analysis of counterfactuals within the framework of modern inferentialism. I argue that despite some advantages in comparison to earlier positions, this version also faces a vicious circle.

### Chapter 3: Possible Worlds Semantics

The subject of this chapter is the most popular analysis of counterfactuals, i.e., possible worlds semantics. The chapter begins with a general characterization of this semantics along with the key notions of the philosophy of modality (3.1.). This section aims to provide a basis for the analysis of counterfactuals in terms of possible worlds. In virtue of the standard (so-called 'orthodox') approach, every counterpossible is vacuously true.

Skepticism concerning the orthodox thesis motivates introducing a modification that results in extending the domain of worlds to include impossible worlds. Subsection 3.2. provides the details of the modified view, i.e., the semantics and metaphysics of impossible worlds. It also shows how the extension of the domain of worlds affects the analysis of one of the key notions of possible worlds semantics for counterfactuals, i.e., the notion of similarity between worlds. Since some advocates of orthodoxy have argued that the problem of counterpossibles should be shifted from the semantic question of truth-value to the pragmatic

question of assertability, subsection 3.3. examines these arguments and provides some rebuttals to a pragmatic-oriented approach to counterpossibles.

#### Chapter 4: Truthmaker Semantics

This chapter provides an analysis of counterpossibles in terms of truthmaker semantics. The chapter contains the essential motivation for the development of truthmaker semantics, which is partly grounded in the limitations of possible worlds semantics. The basic notions of truthmaker semantics, such as states, exact, inexact, and loose verifiers are explained both from a formal as well as a philosophical point of view (4.1.). The second subsection (4.2.) is dedicated to an analysis of counterfactuals in terms of truthmaker semantics, along with the question of impossible states and so-called possible outcomes. This section is meant to provide a model of truthmaker semantics for counterpossibles along with a critical analysis of it.

Those who favor this approach are committed to believing in truthmakers. This justifies questions about what truthmakers are. Of course, one may avoid such questions by considering this framework merely a figurative way of speaking. Many, however, believe that it is methodologically appropriate and philosophically desirable to provide a picture of the metaphysical nature of truthmakers. At the same time, some argue that this is more complicated than it may initially seem. The final section (4.3.) aims to face this and provides an original proposal in the form of Meinongian Abstractionism. As the label suggests, this is inspired by Alexius Meinong's Theory of Objects.

#### Chapter 5: A Hybrid Approach

The subject of the final chapter is a novel proposal addressing the question of counterpossibles and counterfactuals in general. After some introductory remarks (5.1.) that concern the notion of explanation, such as that of questions, explanatory realism, and dependence, the Dependence

Account of Counterfactuals is developed. Further, I show how this addresses some popular expectations with respect to theories of counterfactuals and how DAC relates to other positions. This approach is intended to be a hybrid in the sense that it combines some aspects of inferentialism, possible worlds semantics, and truthmaker semantics. It relies on the novel Pacific approach towards possible and impossible worlds (3.2.2.). These worlds are constructed from entities that serve as exact truthmakers (4.3.). This, along with a variation of Humeanism (5.1.3.), reflects some of the intuitions of inferentialists regarding counterfactuals.

## Summary

The aim of this book was twofold. First of all, it endeavored to examine popular analyses of counterfactuals from the point of view of the problem of counterpossibles. Analyzing counterpossibles is surely not an easy task. It seems that for a long time the chief difficulty lied in the obscurity of intuitions concerning the notion of impossibility. This, together with the belief that the role of counterpossibles was of little significance, resulted in a situation where counterpossibles were considered rather an exotic species of conditionals. While for many decades the question of counterfactuals with impossible antecedents was considered rather marginal and thus not relevant to the evaluation of theories of conditionals, as I argued in chapter one, there are good reasons to think differently. This is due to two aspects of hypothetical reasoning – its prevalence and its involvement in considering impossible scenarios. A combination of these two provides data that are difficult to ignore.

Furthermore, the need for an unorthodox analysis of counterpossibles allows one to highlight the shortcomings of or obstacles to such accounts as inferentialism, possible worlds semantics, and truthmaker semantics. As I argued in chapter two, neither the historical approaches of Goodman and Chisholm, nor the contemporary variations of inferentialism can successfully address the question of counterpossibles. Importantly, this is partly independent of the impossibility of the antecedent. After all, regardless of the modal status of the antecedent, the inferentialist's analysis of counterfactuals faces similar obstacles concerning the supporting truths that are meant to guarantee the inference from the antecedent to the consequent.<sup>137</sup>

The most popular – and for many, the default – analysis of counterfactuals is the one developed within the space of possible worlds semantics. Even though in its original formulation it was committed to the vacuous truth of every counterpossible, this is not the due to the framework itself but rather due to an independent assumption concerning the domain of

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<sup>137</sup> This, however, does not affect the inferentialist's account of indicatives.

worlds. Furthermore, there is a natural way of extending this in such a way that it allows for the non-vacuous truth or falsity of certain counterfactuals with impossible antecedents. One way to achieve this is to introduce impossible worlds to the domain of worlds. While this provides an unorthodox analysis of counterpossibles, it also opens new questions concerning the metaphysical and logical nature of these worlds. In sections 3.2. and 3.3., I explored possible answers to these questions, and the criticism of the very idea of non-vacuously true counterpossibles. While there are good reasons to believe in the plausibility of extended possible worlds semantics, the introduction of impossible worlds exposes what many consider the main puzzle of this analysis – the notion of similarity between worlds.

Whereas addressing the problem of counterpossibles within possible worlds semantics requires introducing some changes to the original proposal, truthmaker semantics offers a solution in its default form. Importantly, this approach arose partly in reaction to the same limitation in possible worlds semantics that resulted in the vacuous truth of every counterpossible. As argued in section 4.2., while the semantics of truthmakers provides a unified analysis of counterfactuals regardless of the modal status of their antecedents, it faces some obstacles. These mostly concern the key notions of the proposal – that of a verifier and of a transition between states. This allows one to formulate a ‘cotenability’ problem for truthmaker semantics’ analysis of counterfactuals.

Truthmaker *semantics* was partly a reaction to controversies over the metaphysics of truthmakers. In section 4.3., I proposed Meinongian Abstractionism – an approach meant (i) to address some popular criticisms of the metaphysical notion of truthmakers and (ii) to provide a fine-grained notion corresponding to Fine’s ‘exact verifier.’ Furthermore, this helped me develop a novel approach to counterfactuals. The Dependence Account of Counterfactuals – as the name suggests – focuses on dependence as the key to addressing the question of counterfactuals. This is not merely because conditionals express dependence relations between

antecedents and consequents, but also because dependence plays a crucial role in explanation. Thus, given that the problem of counterfactuals is to explain what makes expressions such as ‘If *A* were/had been the case, *C* would be the case’ true, it should come as no surprise that the notion of dependence is of special importance to coherently account for counterfactuals. Importantly, as argued in section 5.2.2., the proposed applies uniformly to both counterpossibles and counterfactuals with possible antecedents. This also allows one to satisfy popular expectations with respect to theories of counterfactuals without falling into the problems of the previously discussed views. As many others, DAC is subject to its own set of concerns. Nevertheless, it serves as an alternative for those who recognize the importance of non-vacuously true counterpossibles, and who find other accounts unsatisfactory.

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