The (Im)possible Ways of History: between Necessity and Contingency

By Mykola Bakaiev

Submitted to Central European University Department of Philosophy

In partial fulfilment of the requirements for the degree of Master of Arts

Supervisor: Professor Maria Kronfeldner

Budapest, Hungary 2019

CEU eTD Collection

Abstract

This thesis deals with counterfactual events and overdetermination of events in history in the context of the distinction between necessity and contingency. Contrary to the extreme positions of historical determinism (full necessity) and antideterminism (full contingency), I argue that history is somewhat necessary and somewhat contingent, meaning that some historical events are necessary or close to necessity, while others are contingent or close to contingency. To do that, I start with covering the theory of historical counterfactual events and how to construct them. Then I deal with notions of necessity and overdetermination of events, paying special attention to how close overdetermination of events comes to necessity and whether it can be an argument for historical determinism. Finally, I argue for the connection between overdetermination of events and how specific the description of an event is, while the specificity depends on how much evidence we have to support the description. When there is little evidence to support a single description, underdetermination by evidence happens. I investigate what underdetermination by evidence means for overdetermination of events, counterfactual events and for the overall distinction between necessity and contingency, determinism and antideterminism. The result of my investigation is that history, which holds some uncertainty due to underdetermination by evidence, is neither fully necessary nor fully contingent.

CEU eTD Collection

Acknowledgements

First of all, I would like to acknowledge CEU as an institution for a fruitful and colorful year. Especially, I thank my supervisor Maria Kronfeldner for giving me a direction towards counterfactual history and for her constructive criticism that helped me develop my work. I also thank David Weberman for sharing my passion for history and Mike Griffin for engaging logical discussions. I also thank István Perczel for inspiring Pseudo-Dionysian seminars, which gave me an idea of the thesis, and Tom Rooney for his support throughout this year.

Secondly, I greatly acknowledge my wife and philosopher Veronika Puhach for her constant support of me writing this thesis and in all my endeavors. I am also grateful for all my friends. This includes my fellow CEU philosophers Dachi Pachulia and László Kőszeghy.

Thirdly, I acknowledge Taras Shevchenko National University of Kyiv, where I met my wife and two friends-philosophers Nastya Dobrovoska and Louise Moroz. There I have also met two great philosophers Andrii Baumeister and Natalia Kryvda that inspired me to continue my studies and research in the realm of philosophy.

Finally, I express my gratitude my family, including my mother Natalia, my father Yurii and my grandmother Halyna, to my home city of Kyiv, to my country Ukraine, to humanity and to the Universe.

I thank everybody I have mentioned here and those I have forgotten to mention for making a great difference for my philosophical path.

CEU eTD Collection

Contents

Introduction	1
Chapter 1: A Theory of Counterfactual Events in History	4
A Theory of Counterfactual Events in History: Weber and Reiss	5
Max Weber on Counterfactual Events in History	5
Julian Reiss on Counterfactual Events in History and Historians' Semantics	6
Issues in the Weber-Reiss Theory: Backtracking and Redundant Causation	9
Backtracking and Wrongly Judged Causal Claims	9
Redundant Causation: Preemption and Overdetermination	13
A Critique of Julian Reiss: Negation and Specified Modification	15
Conclusion	17
Chapter 2: Necessity and Overdetermination of Events in History	19
Necessity and Overdetermination of Events	19
Necessity as Truth in Any World	19
Necessity as Insensitivity	22
Overdetermination of Events in History	25
Proportionality and Specificity as Tools for Describing Causation	25
Degrees of Overdetermination and WWI	27
Long-term Overdetermination and Marcomannia	28
Conclusion	32

Chapter 3: Underdetermination by Evidence in History	
Underdetermination by Evidence and Overdetermination of Events	
Underdetermination by Evidence in History	
Faustina Minor	
Kyivan Rus	
Conclusion	41
Conclusion	43
References	47

Introduction

Actual history has happened the way it has happened, whereas other ways of history turn out to be counterfactual, as they contradict the facts of actual history. However, could history have been different? Have these counterfactual histories been possible? Opinions vary, but two extremes can be defined: historical determinism and historical antideterminism. According to historical determinism, history has always been determined. If it is so, then only the actual way of history has been possible. In this case, actual history is fully necessary. Even if other ways seem to be plausible, it has been impossible for them to happen from the beginning.

History does not tolerate 'what if' questions, a historical determinist would say. This coincides with the fact that, according to the historian Niall Ferguson, "hostility to counterfactual arguments has been and remains surprisingly widespread among professional historians" (1999: 5). The reason why 'what if' questions might be considered unprofessional among historians is that not only there is no evidence to support 'what if' constructions, but the existing evidence is also in direct contradiction to such constructions. Of course, it does not mean that all professional historians are determinists, but what is true is that all determinists – religious historians, materialists or idealists – "regard 'what if' questions as fundamentally inadmissible" (Ferguson 1999: 5). Meanwhile, historical antideterminism is a belief that history has never been determined, so any way of history was possible, including alternative ways of history, represented by counterfactual histories. If all counterfactual ways were indeed possible, then actual history could go in all possible ways, i.e. history as we know it is fully contingent and no event was bound to happen.

As I have mentioned, the two extremes are that history is either fully necessary or fully contingent. However, I think that both extremes are counterintuitive. It is hard to believe that everything was equally possible (full contingency for all historical events) or that all historical events were completely inevitable (full necessity). That is why my position here is in the middle between these two. Arguing for the middle position, I refute both positions in this thesis. Firstly, I argue against full-pledged historical determinism that excludes any counterfactual claims from history, leaving only one way for history. However, that does not mean that I defend the inverse position of full-pledged historical antideterminism that includes all counterfactual claims as I argue against this view too. What I defend is that in history there is no such thing as full necessity or full contingency: history is in the middle, being somewhat necessary and somewhat contingent.

To answer the possible question 'who am I arguing against?', I would say that I am prioritizing 'what' over 'who', the view itself over the supporters of the view. Especially, as these two positions I attack are extreme ones, there are few supporters in the modern world that are ready to defend them. That is why I reconstruct these positions and what they are about. One would say this lack of supporters and that I am building a 'straw men' to attack mean that the extremes are wrong and my defense is futile, but the lack of supporters does not explain why it is wrong as well as the fact that I do not argue against real people does not mean that my argumentation fails or that there are not people that support my position.

For instance, Niall Ferguson defends the middle position too. According to him, not all counterfactual events were equally possible. He wishes to replace "the enigma of 'chance' with the calculation of probabilities" (1999: 85). To do so, he constructs counterfactual events not as a fantasy, but as a virtual history which consists of simulations that are "based on calculations about the relative probability of plausible outcomes in a chaotic world" (ibid.). In this thesis I

want to test this view by investigating counterfactual events in history. By showing plausibility of counterfactual events one can demonstrate that historical determinism is wrong and that some events are not so determined, being closer to contingency than necessity. Ferguson does so on historical examples as a historian. As a philosopher, I want to focus not only on counterfactual events in history, but also on philosophical complications that are produced by such events.

The structure of my thesis is corresponding to the task of arguing for a position in between historical determinism and antideterminism. In the first chapter, I reconstruct the theory of counterfactual events in history and how to build them with the help of insights from Max Weber and Julian Reiss. I also explore some issues of the theory, and whether they are relevant for counterfactual events in history. The most prominent among these issues is overdetermination of events. In the second chapter, I explore the meanings of necessity (as truth in all worlds and as insensitivity) and how they are related to overdetermination of events, involving ideas from Yemina Ben-Menahem and James Woodward. After that, using the theory of counterfactual events, I investigate historical examples of WWI and Marcommanic Wars to see how overdetermination of events works. Finally, I assume that the way of describing the events might affect how overdetermined they appear. To investigate that, with the help of Aviezer Tucker and Daniel Swaim I observe in the third chapter the case when multiple versions of describing events result from the lack of evidence to determine one narrative underdetermination of evidence. Demonstrating underdetermination by evidence on the historical examples of Faustina Minor and Kyivan Rus, I argue that there must be some uncertainty in history, so history is neither fully necessary nor fully contingent, but somewhat necessary, somewhat contingent and somewhat uncertain.

Chapter 1: A Theory of Counterfactual Events in History

I take a counterfactual event to be one that contradicts a fact. A counterfactual event "concerns what is not, but could or would have been" (Starr 2019). Very often a counterfactual event can be described by means of a counterfactual conditional. This conditional is an answer to a 'what if' question, because the antecedent of the conditional is supposed to be false in actual history. For example, what if Archduke Franz Ferdinand of Austria had not been assassinated in 1914? The answer goes like that: if Franz Ferdinand had not been assassinated in 1914, then WWI might not have happened¹. Moreover, as I will discuss below, counterfactual events can be used to explain causation in actual history. Namely, due to the observation that WWI might not have happened without the assassination of Franz Ferdinand, one can infer that the assassination and WWI are causally related.

I start this chapter with a discussion of the theory of counterfactual events in history and how they should be constructed. The basis of the theory is Max Weber's intuition on what counterfactual events are in history and Julian Reiss' theory on how counterfactual events should be constructed, which is based on Weber's insights. Then I will address two issues that, according to Reiss, might be relevant for assessing claims about counterfactual events: backtracking and redundant causation. Finally, I will criticize Reiss' account on counterfactual events and modify the theory accordingly to apply it to historical cases in the following chapters.

¹ According to Lewis (1973: 2), a counterfactual conditional has two variants:

¹⁾ $p \Box \rightarrow q$ or 'if p were the case, then q *would* be the case';

²⁾ $p \diamond \rightarrow q$ or 'if p were the case, then q *might* be the case'.

While in the first variant the effect is certainly true, in the second one the effect is probably true.

As for now, I have not proved that in the absence of the assassination WWI would not have happened. For this reason, I lack certainty to use 'would', so I am using a less certain 'might'.

A Theory of Counterfactual Events in History: Weber and Reiss

Max Weber on Counterfactual Events in History

Before I discuss Weber's account on counterfactual events, I must say that Weber does not use the word 'counterfactual' in his works. The term itself was coined by Nelson Goodman in 1947, 27 years after Weber's death². However, the meaning of 'counterfactual' is present in Weber's thought. A historical event with the counterfactual modality is what Weber names an 'imaginative construct'. The reasoning that involves such situations is accordingly the 'judgement of possibility'. For the sake of simplicity, I will call the former 'counterfactual events' and the latter – 'counterfactual reasoning'.

Max Weber introduces counterfactual events to explain causation in history. According to his view, a cause leads to an effect in history iff a counterfactual cause makes a difference for the effect. A counterfactual event is an imagined event and the result of counterfactual reasoning. Causal claims and counterfactual reasoning presuppose one another, because the latter is the abstraction that takes place during the attribution of effects to causes, i.e. in a causal claim (Weber 1905: 171). Counterfactual events are produced "by the disregarding of one or more of those elements of "reality" which are actually present and by the mental construction of a course of events which is altered through modification in one or more "conditions"". (Weber 1905: 173).

In other words, a counterfactual event is produced by a historian who disregards certain elements of actual history and constructs a counterfactual event through modification of conditions. However, the problem is that it is unclear whether under modified conditions the same effect or a changed one would be expected. Weber says that effects must be determined according to the 'empirical rule' (1905: 173), but he does not explain the exact meaning of it. I

² Goodman, Nelson, 1947. The Problem of Counterfactual Conditionals. *The Journal of Philosophy*, Vol. 44, No. 5, (27 February 1947), pp. 113–28.

can only suppose that by 'empirical rule' Weber means a set of informal guidelines on how history could go. I will return to that below, when I discuss Reiss and historians' semantics for counterfactual events.

Julian Reiss on Counterfactual Events in History and Historians' Semantics

Julian Reiss is a contemporary philosopher who revisits Weber's idea of a differencemaking counterfactual event. Weber's interdependence of causation and counterfactual reasoning is what he calls singular causal analysis or Weber-causation (Reiss 2009: 712, 720). Based on Reiss, I define Weber-causation as follows:

(Weber-causation) 'p causes q' is true $(p \rightarrow q)^3$ iff 'had p not been, q would not have been' $(\sim p \Box \rightarrow \sim q)$ is true.

More importantly, Reiss expands Weber's intuition with historians' semantics for counterfactual events, which answers these two questions: 1) how is p to be removed? and 2) how do I know what q would be upon the removal of p? (Reiss 2009: 713). Semantics is about the relation between a proposition and its truth value. These two issues are clearly semantic if I consider that to remove p is to assert the false value of p and to keep p is to assert the true value of p. In the case of historians, I think that semantics is about that informal 'empirical rule' which defines what could be true in counterfactual history.

Reiss divides semantics into two sections. The first, which is about the counterfactual cause, uses a minimal rewrite rule to remove p. According to this rule, upon implementation of a counterfactual cause one must not falsify much of what is known about the actual cause of events (Reiss 2009: 719). In other words, although any counterfactual event can be introduced, those that are close to actual history are preferable. Moreover, a counterfactual event must be historically consistent: a counterfactual event is historically consistent iff the conditions were

 $^{^3}$ Hereinafter I am using " \rightarrow " only to represent a causal relation.

present in history such that the counterfactual cause "was likely to obtain" (Reiss 2009: 720). Thus, while implementing a counterfactual cause, one must ask what conditions would have to be present for the counterfactual event to follow from these conditions and whether these conditions were present in history.

The second section is about the counterfactual effect. It claims that knowledge about q can be derived from the historical context or from generalizations about human behavior. For example, if there is an event in the context of actual history, which is similar to a counterfactual event ($\sim p \Box \rightarrow \sim q$), then $\sim q$ is assertible in counterfactual conditional ($\sim p \Box \rightarrow \sim q$). If occupation of Eastern European countries by the USSR led to implementation of pro-Soviet regimes there, then it is plausible that occupation of France by the USSR would have led to a pro-Soviet France. As for generalizations of a human behavior, consider the following example. If a person expressed some behavioral patterns in the past, then it is likely that this person would continue acting this way in a counterfactual event. Let us say, Tom, who lives in Budapest, loves visiting bookstores.

However, a wild guess is not enough to construct counterfactual conditionals. Historians' semantics is introduced by Reiss to make an educated guess about such a counterfactual event, which was probable and close to actual history (Reiss 2009: 720). Based on his article, I can summarize that a counterfactual event is close to actual history, according to the semantics, iff:

1) cause p and effect q are accessible in actual history;

2) ~p is historically consistent and allows a judgement about an effect;

3) knowledge about $\sim q$ is obtained from a historical context or from generalization about human behavior.

Now, can I introduce such a counterfactual conditional that would violate this semantics? I can try, but I think that such a conditional will turn out to be either impossible or ahistorical (i.e. not applicable to history). For example, a violation of the first condition would be to implement a conditional that represent an event, which is not accessible in actual history. In other words, this conditional must have no connections to actual history to be the violation. However, a counterfactual conditional cannot have any connection with actual history, because for it to be counterfactual it needs a fact in actual history, to which it will oppose. So, without a fact of actual history counterfactual or contrary-to-fact conditional is impossible. Needless to say, that such impossible counterfactual event would be ahistorical, having no connection with actual history and being nothing like it.

I can construct counterfactual conditional that represent historically inconsistent counterfactual event, violating the second condition. If historical consistency means that there are conditions in actual history such that a counterfactual event was likely, historical inconsistency is about the absence of such conditions, so a counterfactual event in this case was unlikely to happen. There is a connection with actual history for a historically inconsistent counterfactual event, but the conditions behind this connection do not exist in actual history. I can either implement such conditions that are accessible and would make the needed conditions accessible or leave a counterfactual event as it is by saying that it was implemented by a tiny miracle. In the first case this is no longer a violation, whereas in the second this counterfactual event also would be ahistorical.

Finally, I can implement such a consequence of a counterfactual event that cannot be obtained from historical context, violating the third condition. In this case there is no way to judge whether such consequence could happen. Again, this would be a wild guess, which makes the consequence ahistorical. Concluding, ahistorical counterfactual event would be useless for my thesis. The reason for that is the following: there would be no way to judge about truth value and probability of a counterfactual event, which makes this counterfactual event powerless to demonstrate contingency or necessity in history.

Issues in the Weber-Reiss Theory: Backtracking and Redundant Causation

"Among philosophers it is a generally accepted pillar of truth that if counterfactuals are to be used as stand-ins for causal claims, they have to be nonbacktracking" (Reiss 2009: 720). Moreover, as I will show below, a counterfactual event must be free from "redundant causation" to really make a difference. A philosopher David Lewis resolves these issues by implementing counterfactual events with the help of tiny miracles. However, while these issues are relevant for philosophers, they might not be so relevant for historians. In this part I investigate the issues and their relevance for history.

Backtracking and Wrongly Judged Causal Claims

Let us say that the first counterfactual event is obtained in the present. If this is the first point of divergence between actual and counterfactual histories, then they must have a common past. According to this intuition, the present can make a difference for the future, but the past must stay the same. However, there is a backtracking counterfactual event that 'goes back' to its own cause. Consider a causal conditional 'p causes q' $(p \rightarrow q)$, in which q is in the present and p is in the past. A backtracking counterfactual conditional would have this construction: 'if q were not the case, then p would have to be not the case' ($\sim q \square \rightarrow \sim p$) (Lewis 1979: 458). Therefore, backtracking is such an issue that casts doubt on the belief that actual and counterfactual histories have a common past before the first divergence. According to backtracking, it is true that 'if the present were different, the past would be different too'' (Lewis 1979: 456).

Since any historian 'backtracks', going from the present to the past in order to study the latter, it is not a surprise that, as Julian Reiss notes, virtually all historical counterfactual events are backtracking ones (Reiss 2009: 721). For example, a historian, who constructs a counterfactual event, cannot just postulate it and go forward in time. It is necessary to go firstly back in time and look for such conditions that can render this counterfactual event likely. Backtracking in time might be not a problem *per se*, but causal claims "can be judged wrongly" by being associated with backtracking counterfactual events (Reiss 2009: 721). Wrongly judged causal claims are such that assume causal dependence between events that are causally not related, which is clearly a problem.

Consider this example. Ronald Reagan's presidency has many effects, but two of them are the most prominent: 1) Reaganomics or a special economic policy that Reagan pursued since the beginning of presidency in 1981; 2) the Intermediate-Range Nuclear Forces Treaty (INF Treaty) that was signed by Ronald Reagan (the USA) and Mikhail Gorbachev (the USSR) in 1987, marking the end of the Cold War. Although these effects are independent, it might seem that there is a causal dependence between them if I construct the following the situation. Suppose a counterfactual event that "Reaganomics" had not been pursued by President Reagan since 1981. As this is an effect of Reagan being a president, I need to backtrack in time to the cause and negate it: 'had Reaganomics not been pursued by President Reagan since 1981, then Reagan would not have been the president of the USA'. However, I also remove the signing of the INF Treaty would not have been signed by President Reagan in 1987'. Therefore, 'had Reaganomics not been pursued by President Reagan in 1987'. Therefore, 'had Reaganomics not been pursued by President Reagan in 1987'. Therefore, 'had Reaganomics not been pursued by President Reagan in 1987. Having this counterfactual conditional as a stand-in for causal claim, I have to state that Reaganomics and

the INF Treaty are causally connected in actual history, although there are no indications in actual history that these events are connected.

Now, Lewis defends the intuition that the present depends on the past, but "not so in reverse" (Lewis 1979: 455). If the past is fixed, then backtracking counterfactual conditional is false. Therefore, backtracking counterfactual conditionals "are not to be used in the assessment of causal dependence" (Menzies 2017: 2.1). The right counterfactual claims are non-backtracking ones, which "typically hold the past fixed up until the time at which the counterfactual antecedent is supposed to obtain" (ibid.). Lewis brings up a non-backtracking counterfactual event with a help of a tiny miracle that intervenes into a causal chain, breaking it. The way to do it with the example above is to say that a counterfactual event, according to which Reaganomics has not been pursued by President Reagan since 1981, is obtained with help of a tiny miracle. This prevents the need of going back in time to prevent Reagan's presidency. Therefore, the INF Treaty is still signed by Reagan and a conditional 'had Reaganomics not been pursued by President Reagan since 1981, then the INF Treaty would not been signed by President Reagan in 1987' is false.

As Maar notes, a non-backtracking counterfactual event has no real cause in the world, as it is obtained by a tiny miracle (Maar 2016: 353). Now, I would say that this creates a problem for history. As Reiss has pointed out, a historical counterfactual event must be historically consistent, which means that there must be such conditions in actual history, according to which a counterfactual event "was likely to obtain" (Reiss 2009: 720). There are no such conditions in actual history that can make an intervention of tiny miracle into history likely. While Lewisian intention is to intervene into a causal chain once to introduce a tiny miracle and observe a counterfactual event, historians' intention is to intervene as little as possible and even when they intervene, this intervention must be historically consistent. Now, a tiny miracle that

breaks known laws of causation is not that kind of an event that can be considered historically consistent, because, as I said, it has no conditions in actual history to be likely. Therefore, a non-backtracking counterfactual event cannot be a counterfactual event in history.

Are wrongly judged causal claims problematic for history? For example, when I say that 'Reaganomics causes the INF Treaty' is wrongly judged, I mean that there is no actual causing between them. However, Reiss points out the following:

"Historians often aim at determining the historical significance of a person or an act, considered as a singular event, or the effectiveness of a policy, in which case the event is considered as an instance of a type. In both cases difference making, not actual causing, is important" (Reiss 2009: 722).

In other words, a historian who investigates a causal relation between events is focused on the historical significance and on difference-making, but not on the actual causing behind the relation. Therefore, actual causing is irrelevant. If it is irrelevant, then it is not a problem for history that actual causing is wrongly judged. So, backtracking is not problematic for history.

Consider a wrongly judged causal relation between Reaganomics and the INF Treaty. A difference-making relation does not postulate that these two events are *physically* or *logically* related, but it does postulate that they are *historically* related. The backtracking counterfactual conditional I have examined above shows the causal relation between Reaganomics and the INF Treaty, in which it is important that they are *historically* related. When I say that they are historically related, I mean that they are effects of the common cause, and that the historical significance of the former effect might make a difference for the significance of the latter effect. For example, had the INF Treaty been signed by President Reagan, but Reaganomics had not happened, the treaty would have still been influential, but the significance of it would be different without Reaganomics, because the latter is also influential effect of his presidency.

Redundant Causation: Preemption and Overdetermination

Another problem for historical causation and counterfactual events, according to Reiss, is redundant causation. Redundant causation happens, when "several alternative events compete to cause an effect" (Reiss 2009: 721). There is an ambiguity, because while Reiss talks about redundant causation, other philosopher of history such as Alexander Maar tends to discuss overdetermination in the context of counterfactual events (2016). By Reiss' definition redundant causation seems to be like overdetermination, when several equal events cause one effect. However, these might not be the same. Before going further with Reiss, I should explicate what is redundant causation and how it is related to overdetermination. David Lewis defines it as follows:

"Suppose we have two events c_1 and c_2 , and another event *e* distinct from both of them; and in actuality all three occur; and if either one of c_1 and c_2 had occurred without the other, then also *e* would have occurred; but if neither c_1 nor c_2 had occurred, then *e* would not have occurred. Then I shall say that c_1 and c_2 are *redundant causes* of *e*" (Lewis 1987: 193).

Lewis makes a reservation that redundant causation might be with more than two redundant causes, so essentially redundant causation is when two or more redundant causes can lead to the same effect and without any of these redundant causes the effect will not occur. Below he divides it into *preemption* and *overdetermination*:

"In a case of preemption, the redundant causes are not on a par. It seems clear that one of them, the *preempting cause*, does the causing; while the other, the *preempted alternative*, waits in reserve. The alternative is not a cause; though it could and would have been one, if it had not been preempted. There is the beginning of a causal process running from the preempted alternative to the effect. But this process does not go to completion. One effect of the preempting cause is to cut it off. In a case of overdetermination, on the other hand, there is no such asymmetry between the redundant causes. It may or may not be clear whether either is a cause; but it is clear at least that their claims are equal. There is nothing to choose between them. Both or neither must count as causes" (Lewis 1987: 199-200).

A difference here is that all causes lead to an effect in overdetermination, whereas in preemption only one cause actually leads to an effect. Let us assume that there are two snipers and one victim. It would be overdetermination if they both hit the victim. They both would cause the event of victim being shot. However, it is preemption if only one sniper hits the victim, whereas other is waiting in reserve. This other sniper will hit iff the first one fails to do the job.

The example that Reiss introduces to show redundant causation in difference-making is a case of historical preemption. I paraphrase the example as follows:

> The event of the Athenians winning the Battle of Salamis causes Hellenism and eventually the rise of Western civilization;
> Does it mean that if the Athenians had lost the Battle of Salamis to the Persians, the rise of the West would not have happened?
> No, it does not. Because it is possible to suppose that the Athenians could escape from Persians to Sicily, so that Hellenism and Western civilization would have happened nonetheless (Reiss 2009: 721-722).

This example is preemption, because the event of the Athenians escaping the Persians is not an actual cause of the West. It does not even exist in actual history as the Athenians did not get a reason to flee Athens in the first place, but it can be said that this event was in reserve, meaning that although it did not exist as an actual cause of the West, it existed as a potential cause, which could happen once the Battle is lost. Still, this example is likely to be called overdetermination of Western civilization rather than preemption.

To understand why, let us consider this. Alexander Maar introduces the assassination of Franz Ferdinand as an example of overdetermination. On the day of the assassination there happened to be six assassins that had task to assassinate the Archduke (Maar 2016: 365-366). Furthermore, Gavrilo Princip, who killed the Archduke in actual history, completed his task only after the previous two assassins had failed to kill him. Strictly speaking, this is not overdetermination, because the killers were not all actual causes of assassination: it would be if all six killers caused the assassination of the Archduke simultaneously. This is preemption, because Gavrilo acted only after previous killers have failed. However, it still can be called overdetermination in the sense that the Archduke's death was overdetermined due to existence of several potential causes of his death at that day. I think that what matters is not whether alternative causes were all the cause of the assassination, but whether they have had potential to causa the assassination. For this reason, I will consider preemption to be a special case of overdetermination, and redundant causation will be used as a synonym of overdetermination from now on.

The last question remains: is redundant causation (i.e. overdetermination) relevant for historians? Julian Reiss suggests that yes, "historians go through great pains to make sure" that a counterfactual cause "indeed makes a difference to the effect" (Reiss 2009: 722). The reason for that is that a claim about the relationship between two historical counterfactual events (the antecedent and the consequent event) is a claim about causation in the sense of difference-making. However, if the outcome turns out to be the same as in actual history due to overdetermination of events, then a counterfactual event does not make a difference and is not a historical one. Like "a policy that does not make a difference to an outcome of interest is useless and probably harmful because of its costs" (Reiss 2009: 722), a counterfactual event that does not make a difference to an outcome is useless for history. And it will be useless, if overdetermination of events is true. So, below in the thesis I am going to evaluate overdetermination of events and how close it is in history to making counterfactual events useless. However, before I do so, I will criticize Julian Reiss' interpretation of Weber and modify the theory accordingly.

A Critique of Julian Reiss: Negation and Specified Modification

For this thesis, I want to modify Reiss' account on counterfactual events. The thing is that while Reiss is clearer than Weber on how to implement counterfactual events and judge about their conditions and consequences, he misreads Weber as the latter says that counterfactual events are produced by modification of actual history, not by negation. I think that for Weber it is important whether counterfactual events make a difference for actual history, not whether they negate it. After all, it is not negating, but difference-making that is an essential feature of counterfactual events here. Thus, I should redefine this unity of causation and counterfactual events as follows:

(Weber-causation*) 'p causes q' is true $(p \rightarrow q)$ iff 'had p been different, q would have been different' $(p' \Box \rightarrow q')$ is true.

If the causal claim is true, then a change of cause would lead to a change of effect. As it does not matter what is this change, both negation and modification can demonstrate this interdependence between causation and its counterfactual counterpart. Negation is also modification, but the problem with negation is that it is too broad. Consider a proposition 'Napoleon lost the Battle of Waterloo' (p), which is true in our history. The scope of this claim is narrow, whereas the content is rich: we know exactly what it means. However, a counterfactual event as a negation of the actual one would be a proposition 'it is false that Napoleon lost the Battle of Waterloo' (~p). The scope here is broad and the content is poor. We do not know the exact meaning of it. It can mean that Napoleon won the Battle, that Napoleon ended the Battle in a draw or even that the Battle did not happen in the first place. Negation of the original proposition covers all these as well other possible claims. In other words, while in the original proposition only one effect is true (victory) and any other is false, the negation of this proposition means that only one effect is false (victory), while any other effect can be true. Therefore, in negation of the original claim I say that it is false, so some counterfactual claim is true. However, if I specify the content by saying that Napoleon won the Battle (p'), it would not be a precise negation of original statement, because in this case all other possible outcomes are ruled out.

When the content of actual history is rich, but the content of counterfactual history is poor, I say that counterfactual history is centered around actual history. Meanwhile, historians construct counterfactual histories, which are specific and are not centered around actual history. Counterfactual history is not centered around actual history, when its content is rich and the content of its negation (other counterfactual histories as well as actual history) – poor. So, when a historian constructs counterfactual world, it is not a mere negation of original world of actual history, but also an assertion of a new world and how exactly it is different. With the new assertion counterfactual history stops being a mere negation and becomes more richer in the content. Rather than being specific about actual history, counterfactual history is now specific about itself, being centered around itself. That is why I call it specified modification.

So, actual history must not only be negated to produce a counterfactual history. A counterfactual history that results from the negation needs to be specific for counterfactual events to be historical. That is why by a 'counterfactual event' I mean not only negation, but also specified modification of an event. I will to modify the Weber-Reiss theory accordingly in the conclusion to this chapter. Modification of the theory is also justified, because historians are concerned not with abstract counterfactual events produced by negation of actual history, but with specific counterfactual events produced by specified modification of negated actual history.

Conclusion

Taking into consideration the specified modification, to construct a historical counterfactual event, one needs to grasp the causal relation between cause p and effect q such that it would imply that a counterfactual cause p' would lead a counterfactual effect q':

(Weber-causation*) 'p causes q' is true $(p \rightarrow q)$ iff 'had p been different, q would have been different' $(p' \Box \rightarrow q')$ is true.

Historians' semantics is also modified. To make an educated guess about such a counterfactual event, which was probable and thus close to actual history, the following three conditions are to be held:

- 1) cause p and effect q are accessible in actual history;
- 2) p' is a historically consistent event to allow a judgement about the effect;
- 3) knowledge about q' is obtained from a historical context.

The two main issues with counterfactual events are backtracking and overdetermination. As I have shown, a backtracking counterfactual event is not problematic for history. Even if a claim that two events are related causally is wrongly judged, meaning that there are no apparent physical or logical connections, it is still possible for these events to be related historically, meaning that significance of the first event makes a difference for the second one. However, whether causation is wrongly judged or not is not as important as the difference that is made for history. Overdetermination is an obstacle for difference-making. That is why in the next chapter I will focus on overdetermination, how close it is to necessity and how it affects counterfactual events.

Chapter 2: Necessity and Overdetermination of Events in History

In this chapter, I test the claims of historical determinism on history. To do that, I firstly investigate necessity in history and how overdetermination of events is related to necessity. After that, I discuss overdetermination of events in history and whether it is possible to resolve it, applying theory of historical counterfactual events to particular historical cases.

Necessity and Overdetermination of Events

Historical determinism claims that history is determined, meaning that there is only one way of history that is known as actual history, whereas alternatives have always been impossible. Using possible world semantics, impossibility of counterfactual alternatives means that they are *false* in every possible world (*true* in none of them). Meanwhile, the only possible way of history – actual history – is necessary, because it is *true* in every possible world (*false* in none of them). However, what does necessity mean in a deterministic claim that the way of actual history is necessary and inevitable? In this part of the chapter I want to clarify the meaning of necessity in logic and history, moving from necessity as truth in all worlds (possible world semantics) to necessity as insensitivity (Ben-Menahem and Woodward). I also evaluate how close necessity is to the issue of overdetermination of events that I have discussed earlier.

Necessity as Truth in Any World

The fastest way to define necessity generally is to define it as it is in possible world semantics. According to it, 'necessarily p' (\Box p) means that 'p is true in any world', which is contrasted with 'possibly p' (\Diamond p) as 'p is true in some world' (Menzel 2017: 1.2). Moreover, according to modal negation equivalences (Girle 2009: 4), necessity of p is equivalent to impossibility of non-p (\Box p = \diamond \diamond -p), whereas non-necessity of p is equivalent to a possibility of non-p. In history

contingency and counterfactual events can also be used in order to disprove necessity. For example, Paul Schuurman notes that some historians tend to use "notions of chaos and contingency in conjunction with counterfactuals for anti-determinist claims about the nature of history" (Schuurman 2017: 20). Contingency and counterfactual events are used here to prove claims about history as we know it, i.e. about actual history. Namely, these notions are used to prove that actual history is contingent, meaning that actual history is not necessary and the only way for history to go as other counterfactual ways could happen as well. So, contingency here refers to contingency of actual history, which is proved by possibilities of other histories. Unlike contingency in historical context, 'possibly p' does not refer to actual world (actual history): it means that p exists in some worlds, whereas whether actual world is included into 'some worlds' or not is unclear.

Nevertheless, in modal logic contingency is also defined indifferently to actual world just like possibility. For example, Rod Girle defines that p is contingent, when "it is possible for p to be true and also possible for p to be false" or $(\Diamond p \land \Diamond \sim p)$ (2009: 4). The same sentence in possible world semantics would be 'p is true in some world and p is false in some (other) world'. So, just like possibility, contingency then does not have a focus on actual world and both are thought to be the opposite of necessity. However, the opposite of contingency is not necessity, but non-contingency or analyticity: "p is not contingent iff p is either analytically true or analytically false" or $(\Box p \lor \Box \sim p)$ (Girle 2009: 4-5). Analyticity in possible world semantics means that either p is true in any world or p is false in any world. Meanwhile, necessity of non-p ('p is false in any world') is equivalent to impossibility of p $(\Box \sim p \equiv \sim \Diamond p)$. So, the opposite of contingency is not necessity, but analyticity – either necessity, or impossibility. However, none of these notions are focused on actual world.

Historians exercise counterfactual reasoning to improve the knowledge of actual history and how it could go, so for history actual world matters⁴. Now, if a historian is concerned with actual world, how is it known then that counterfactual events are also contingent? They must be contingent, for otherwise it would be absurd to say that actual history is contingent: either an actual history is necessary, and counterfactual events are impossible, or they are both contingent. How are they both contingent? Consider this example. When a historian claims that 'Napoleon winning the Battle of Waterloo' is a counterfactual event, she means that this claim is false in actual history, but true in a counterfactual history. So, in this case, she evaluates whether it is the case that something does not happen in our world but happens in some possible worlds. Here the same definition of contingency works only with one small nuance that 'false in some worlds' coincides with 'false in actual world'. So, for her contingency of a counterfactual event is the following: counterfactual event is contingent iff it is true in some (counterfactual) histories and false in others (both actual history and other counterfactual histories).

The necessity defined as truth in all worlds is certainly much stronger than overdetermination of events. If we put overdetermination of events in the context of possible worlds, the more overdetermined an event is, the more often it is present in possible worlds. However, if an event is overdetermined, it does not mean that it must happen. It just means that an overdetermined event is hard to prevent. While necessity is truth in all worlds, overdetermination of events is only truth in some worlds, even if in many of them. So, necessity and overdetermination of events are rather distinct. This is important, because it means that

⁴ For example, a historian, who asks whether the West is contingent, does not just ask whether the West is true in some worlds and false in others. Knowing that the West happens in actual history, she tries to see whether it is the case in other counterfactual histories. If it is not, then she has the standard definition of contingency, for which 'true in some worlds' also coincides with 'true in actual world'. So, the historian evaluates whether it is the case that 'the West is true in some histories (including actual history and some counterfactual histories) and false in other histories (other counterfactual histories)'.

overdetermination of events generally does not make a point in favor of historical determinism, because if an event is overdetermined, it does not mean it is inevitable.

Necessity as Insensitivity

Another meaning of necessity is insensitivity to initial conditions. Such a meaning is offered by Yemina Ben-Menahem. She argues that necessity and contingency are to be distinguished in history by sensitivity to initial conditions behind the effect. Necessity is low sensitivity to different initial conditions, whereas contingency is high sensitivity (Ben-Menahem 2009: 123). This definition of necessity differs from the one in possible worlds semantics and provides a clearer similarity with overdetermination of events. Both necessity and overdetermination of events are now a matter of degree, and they both have to do with causation.

Returning to the example we have seen before, the Athenians winning the Battle of Salamis and Hellenism were among conditions of Western civilization. Western civilization is necessary if whatever happened to these conditions in the past (e.g., the Athenians losing the Battle of Salamis), it would emerge anyway. Likewise, Western civilization is contingent if counterfactual initial conditions result in the something different.

In the first case counterfactual conditions make only a slightest difference to Western civilization, but in the second case these conditions make such a great difference that it does not make sense to name what results from it 'Western civilization'. Nevertheless, a similar feature between necessity and contingency here is that sensitivity to counterfactual initial conditions is observed in both cases. It should not be the case if necessity is the opposite of contingency. This is why I assume that necessity as low sensitivity is not necessity of logic. As I said, necessity is truth in any possible world in possible world semantics. Suppose that in different possible worlds there are different initial conditions; then an event is necessary iff it

is the same in any world. So, a necessary event should be the same no matter how different counterfactual initial conditions are.

Such necessity would be the lowest possible sensitivity to initial conditions. However, I think that it would be hard (if not impossible) to find such necessity in history. For example, it is hard to imagine that Western civilization could be the same had the democracy in Athens been destroyed by the Persians. Here I show that overdetermination of events is not a necessity in a strict logical sense, because the absence or modification of p still makes a difference for q. Had it been strong necessity, then q would stay q no matter what.

An opposite to strong necessity is strong contingency, which can be described as the highest possible sensitivity to initial conditions. Something has a low sensitivity to counterfactual events, the background has almost no influence on causal chain. James Woodward brings up the notion of stability, related to change in background conditions, which is very close to Ben-Menahem's notion of insensitivity to initial conditions.

Woodward offers the following definition of causation: "X causes Y if and only if there are background circumstances B such that if some (single) intervention that changes the value of X (and no other variable) were to occur in B, then Y or the probability distribution of Y would change" (2010: 290). In other words, causation is present when in the case of counterfactual change in X and nothing else in the background B changes, Y changes. These background conditions play an important role when it comes to stability of causation. Woodward states that stability comes in degrees and has to do with whether the changes of the background lead to the changes of the causal relation: "to the extent that the relationship would be disrupted by changes in background circumstances, it is less stable" (2010: 292). In other words, a stable causal relation is when Y changes after the change of X no matter what is in the

background. Vice versa, an unstable causal relation happens, when Y changes after X being changed in one background, but Y does not change after X in another background.

In this context, I should redefine strong and weak necessity and contingency. Firstly, strong necessity is the case when causal relation is the most stable, so no background makes a difference for the relation: the same cause leads to the same effect. Secondly, weak necessity is when causal relation is mostly stable, so different background conditions disrupt the relation only slightly: although they makes a difference, but only a small one that essentially the same cause leads to the same effect. Thirdly, weak contingency is when causal relation is mostly unstable, so different backgrounds disrupt the relation greatly: the difference that they make influences a cause not to lead to the same effect essentially. Fourthly, strong contingency is when causation is the most unstable, so any background disrupt the relation radically: the difference backgrounds make is that the same cause can lead to any effect. I mean that if once a strongly contingent X causes Y, the second time X will probably cause something else, even if background is the same both times.

I have mentioned the similarity between necessity as insensitivity and overdetermination of events, but there is also a dissimilarity. While in the first case I have talked about one cause that leads to one effect, in the case of overdetermination of events many redundant causes lead to one effect. When an event is greatly overdetermined, one counterfactual event would make a small difference for an effect. This is exactly the behavior I would expect for weakly necessary event. Still, overdetermination of events is not a weak necessity. I argue that the fact that an event is weakly necessary is an effect of this overdetermination of events. The reason for that is the following. When an effect has a great number of redundant causes and is greatly overdetermined, it is weakly necessary. The more there are simultaneously acting or preempting causes of an effect, the more it is overdetermined. Vice versa, the less there are redundant causes of an effect, the less it is overdetermined. For instance, one counterfactual cause would make a greater difference in this case than it would make in previous one. So, the event would be closer to contingency and thus would be weakly contingent. Now, if an event has *only* one cause, then it would be completely different under a counterfactual cause. So, this event would be strongly contingent. Likewise, if an event has infinitely many redundant causes, then one counterfactual event would not make any difference and an event would be strongly necessary.

Overdetermination of Events in History

The basic idea of overdetermination of events has been already observed in the thesis: it is the case when several redundant causes lead to one effect. If some event does not occur, but another event still leads to the same consequence in history, then this consequence is overdetermined to some degree by a set of events. In this part of the chapter I investigate overdetermination of events in history. However, before I start constructing counterfactual events to see overdetermination of events in action I should pay some attention to how one should describe causes and effects in such constructions. Woodward is also concerned with what description of causation is right. He argues that a right description of causation must be proportional and specific. I also focus on these features, which will become additional tools to analyze various 'what if' questions and overdetermination of events. After that, I deal with two kinds of overdetermination of events in history: overdetermination in degrees and long-term overdetermination.

Proportionality and Specificity as Tools for Describing Causation

According to Woodward, proportionality is related not to the causal relationship as such, but rather to the way of describing it. It means that a proper description of causation should include relevant details about the cause and effect as well as omit irrelevant details. There must be a symmetry between the description of the cause and the description of the effect. Which details are relevant and which are not depends on the purpose of investigation. When I turn to historical applications of overdetermination of events below, I will try to make sure that the causes are described proportionally to the effects.

As for specificity, Woodward explores different meanings of it and for the purpose of this thesis I will explore the notion of specificity in terms of fine-grained influence, which is easy to understand on Woodward's example: "simple example is provided by a radio with (a) an on/off switch and (b) a rotary dial, the position of which controls which of a number of possible stations is received and hence the content of what is heard ... the position of the dial gives one relatively fine grained control over which station is received, assuming that the switch is on" (2010: 307). This specificity is about the kind of influence the cause has over the effect. Turning a radio on with the switch as well as rotating the dial of working radio are both the causes of radio receiving some station as an effect. However, influence of the causes differs in specificity. In the first case the influence on the radio is unspecific: the radio receives something, but it is not relevant what station it receives as it was not an influence of on/off switch. However, in the second case the influence is specific: the radio receives something specifically as it is relevant what station is received as a result of the radio dial.

This notion of specificity can prove to be useful when describing 'what-if' situations. For example, on how specific I want an effect to be depends whether or not it is overdetermined. If I assume that WWI is an armed conflict between European powers that starts on 28 July 1914 rather than at the beginning of XX century, then it seems less overdetermined. The reason for that is that there are less possible causes for the war to start on a specific date rather than for the war to start in general. The general causes – the conflict on the Balkans, nationalism, imperialism, other political and economic tensions between European powers – were likely to cause WWI at some point, but not only on 28 July 1914. My observation here is the following: the more specific is a description of an event, the less overdetermined it is; and the more unspecific is a description, the more overdetermined it is.

Degrees of Overdetermination and WWI

Overdetermination of events might be considered as a quality that comes in degrees and Alexander Maar offers a historical example of why the degrees of overdetermination are important. He says that "we know that Ferdinand was killed as a result of a plot. On the fateful day, there were six killers on the streets of Sarajevo, waiting for the right moment to attack and kill the Austro-Hungarian heir" (Maar 2016: 365). The author argues that "the presence of six different killers, armed with bombs and pistols, increases the probabilities of Ferdinand being shot dead, and decrease the probabilities of there being interfering events preventing his death" (Maar 2016: 366). In my opinion, taking degrees into account is especially important, because it helps to distinguish between overdetermination of events and determinism.

If overdetermination has no explicit degrees, then it is easy to confuse it determinism. When an event is overdetermined, but it is not clear to which degree, it might seem that it is simply determined to happen and that after eliminating the previous cause there would be some other redundant causes to create the same effect, so it might seem that this effect was bound to happen. Indeed, if an outbreak of WWI was bound to happen, then in all counterfactual histories such an outbreak took place. However, if it is just that the degree of overdetermination of WWI is high, then it occurs in most of the counterfactual histories, but there are still some histories where it did not happen. The chance of WWI not happening was low, but not equal to zero. Returning to the example of Ferdinand, six killers is not enough to say that the murder was bound to happen, because all the six could have failed to do the job. Indeed, if I examine the history, I will see that Gavrilo Princip managed to kill Ferdinand by accidentally bumping into

Ferdinand after a few previous killers failed and the whole plot seemed to fail (Maar: 365-366). Therefore, although the assassination had six redundant causes that could kill Ferdinand, it would be avoided had Princip have not been there.

Finally, to emphasize overdetermination in degrees, I want to return to Woodward's specificity of influence. First of all, it is safe to say that every overdetermination comes in degrees, because every event has a number of redundant causes. Nevertheless, sometimes it is unclear what is the exact amount of causes or what are the exact causes. I would call this a simple overdetermination of events, which is unspecific and similar to an on/off switch. For example, WWI as an effect has many redundant causes, but it is hard to get a specific number of causes – so the amount is unclear. Moreover, these causes might be unspecific. Let us take tensions in the Balkans as one of the causes. It is obvious that had the Balkans been more peaceful, WWI would have been different. However, how peaceful the Balkans had to be is irrelevant for this conditional. Now, in Franz Ferdinand's case the amount of causes and the causes themselves are specific. So, overdetermination in degrees is specific and similar to a rotary dial. For example, all six killers could kill Ferdinand, but it is still relevant for the assassination what cause specifically lead to this effect. In actual history he was shot by Princip after another assassin failed to bomb his car. Had Ferdinand been killed by bomb, he would have still been dead, but the cause of death would have been different – car bombing rather than shooting.

Long-term Overdetermination and Marcomannia

Rosenfeld adds temporality to overdetermination of events, speaking about long-term overdetermination. This type of overdetermination of events happens when a "reversionary counterfactual shows a point of divergence *initially* altering the course of historical events only to have them *revert back* to their preexisting trajectory at a later point" (Rosenfeld 2016: 397).

By reverting to actual history, a counterfactual event here fails to change history radically, as the long-term future stays the same. This is the case when there are different chains of redundant causes that eventually lead to the same consequence in the long-term future and thus overdetermine this.

In this part, I want to demonstrate the case of long-term overdetermination by turning to the First Marcomannic War (166-175 CE). During this war a Roman province of Marcomannia could be created, which would have been within modern-day Czech Republic and Slovakia. What impact would this have had on long-term history? The uprising led by an Egyptian prefect Avidius Cassius in 175 CE did not let the emperor Marcus Aurelius organize such a province and, according to Historia Augusta (the main source on the war), "he would have done so had not Avidius Cassius just then raised a rebellion in the East" (*Historia Augusta*: Marc. 24.5). This provides a starting point of building historical counterfactual events. To do that, I will reconstruct the actual historical events to determine the causes, effects and background conditions of the uprising. After that, I will try to change some of the events to see how different the effect becomes. Finally, I will analyze whether this counterfactual history is difference-making, sensitive to background conditions and whether the ultimate failure of Marcomannia is overdetermined.

The First Marcomannic War (166-175 CE) begins with Germanic and Sarmatian tribes invading the empire, the most prominent among which is a Germanic tribe of Marcomanni. The invasion is preceded by the following three events, contributing to it. The first is the migration of Goths and other Germanic tribes of the North in south-east direction after 150 CE, putting pressure on the Germanic tribes that live across the Roman border (Wolfram 1997: 40). The second is the Roman-Parthian War (161-166 CE) over the kingdom of Armenia, which is the Roman protectorate. The third is the Antonine Plague, which is a pandemic within the empire that starts in 165 CE and continues up until 180 CE. The plague moves to the west together with the troops that are returning from the Roman-Parthian War.

I would like to turn to Woodward's features of causation now. We have three causes, leading to the First Marcomannic War. However, I think it makes sense to distinguish one major cause of Gothic migration and leave the next two as the background conditions. The war could happen without the plague and the Roman-Parthian war, whereas without Gothic migration, which triggers Marcomanni to cross the Danube, the war could be avoided. If the migration is the main cause, and counterfactual events in the background that prevent the plague and the Roman-Parthian war are not able to change the outcome and Marcomanni still invade the empire, it means that this causal relationship is rather insensitive in relation to background conditions. However, the migration is not likely to determine significantly the course of the war (the number of casualties, the length, etc.), so the causal relationship is also rather unspecific in terms of the way the cause influences the effect.

Having determined the insensitivity and specificity of causation, let us return to historical events. By spring of 175 CE Marcus Aurelius repels the invasion, and intends to make a province of Marcomannia on the conquered territory. Meanwhile, the prefect of Egypt Avidius Cassius revolts against Marcus Aurelius. Although the revolt is suppressed by the end of 175 CE, Marcus Aurelius is forced to finish the campaign without territorial change during the summer of the same year.

Let us explore what could have gone differently and contributed to Marcus Aurelius establishing the province of Marcomannia. It can be done by eliminating the uprising. The easiest way to do so is to assume that Avidius Cassius is the cause of the rebellion. As a Roman general, he could die in the Roman-Parthian War or take part in The First Marcomannic War. However, there are other causes of the uprising that are way bigger than one individual: for example, taxation and social injustice. The revolt could happen in 175 CE without any leader provoking it. However, one can say that it is not the revolt itself that forces Marcus Aurelius to finish the war, but the fact that the revolt's leader claims the throne of a Roman emperor, challenging Marcus Aurelius. Without this challenge Marcus Aurelius could continue the campaign as he did during the revolt of the Egyptian peasants known as the Bucolic War in 172-173 CE.

However, the uprising is not the only cause that prevents Marcus Aurelius from the wished province. I need to consider here that the war was going for 9 years already in 175 CE. Having pacified the enemy tribes, the Roman army might not have had the needed resources and morale to start additional measures to incorporate the territory into the empire. Especially, if one considers that the plague was still going on. Still, even if a number of redundant causes suggests that his failing was overdetermined, let us consider what would happen had Marcus Aurelius been successful.

The Marcomannic Wars (166-180 CE) were the last serious Roman-Germanic conflicts until the Gothic invasions in the Balkans of 250s CE. So, had the Marcomannic Wars resulted in a Roman Marcomannia, I would assume the province having a relatively peaceful existence until the middle of 3rd century CE, which would be similar to what a Roman Dacia (106-270s CE) had in actual history. However, by the second half of 3rd century the barbaric invasions became more pressing for Romans, which led them to withdraw forces from Dacia in 270s CE. Most probably, the forces would have been withdrawn from Marcomannia too. In our history, though, it did not stop Romanization in the case of Dacia, so it is likely that it would have continued in Marcomannia for some time as well. Still, the problem is Attila, who during his reign (434-453 CE) as the ruler of the Huns devastates Europe and makes Pannonia a center of his empire, which would be geographically close to Marcomannia. Moreover, the Huns are

followed by other nomads during the Middle Ages. While nothing like that happens to Dacia, both Pannonia in our history and Marcomannia in counterfactual history might suffer greatly from these invasions.

To sum up, while it was possible for Marcomannia to be created and it might make some difference for history, but the long-term course of history might still not be changed due to long-term overdetermination.

Conclusion

If an event is necessary in history, then it is difficult (weak necessity) or even impossible (strong necessity) to change. Although I did not observe in this chapter such an event that would be impossible to change at all, some events are harder to change than others due to overdetermination of events.

Overdetermination of events happens when two or more redundant causes lead to the same effect. From overdetermination in degrees I have shown that the more causes contribute to overdetermination of events, the closer an effect is to being inevitable. For that feature overdetermination of events can be confused with historical determinism, but the difference is obvious. According to historical determinism, WWI is completely inevitable, whereas in the case when the degree of overdetermination of WWI is high, WWI is only close to be inevitable. The confusion might arise, because to what degree WWI is overdetermined is unclear. WWI as an event has unclear amount of causes and, using Woodward's language (2010), the causes themselves (such as the Balkans, nationalism, imperialism etc.) are often unspecific in their description. However, it is clear that any effect has some amount of causes, including such an effect as WWI. Although indefinitely large amount of causes might seem as good as infinitely large, it is not the same. For WWI to be completely inevitable so that no counterfactual event

could prevent it, the war needs to have an infinite amount of causes, which is not possible. So, overdetermination of events always comes in degrees.

From long-term overdetermination I have observed that the longer an event lasts in history, the more it is overdetermined and closer it is to necessity. For instance, in Marcomannia's example there is nothing predetermined, say, in the decision of Avidius Cassius to rebel. He was a free human being, so although he acted the way he acted, he could act otherwise. Likewise, Marcus Aurelius was a human being with free will, so his action in history is also contingent. It was in the power of this emperor to decide how to behave in the wars he fought. However, what I have discovered here is that there is something that remains unchanged in history. This is the long-term course of history. In Marcus Aurelius' case, this course is overdetermined by causes that are so external for the emperor that he could not do anything about them. For example, Marcus Aurelius could do anything with his empire, but this would do nothing with the fact that in a few centuries the Huns would invade Europe, leading to the collapse of the Roman Empire. Here the change of such a short-term event as The First Marcomannic War fails to change much in long-term history that has resulted in the collapse of the Roman Empire.

Moreover, overdetermination of events depends on the description of events. Using Woodward's notion of specificity, I have observed that the more specific an event is, the less overdetermined it is, being closer to contingency; the less specific an event is, the more overdetermined it is, being closer to necessity. For example, the description 'Marcus Aurelius has failed to conquer and hold Marcomannia in 175 CE' is specific one. As we have seen, the described event by itself is overdetermined to happen, because there are more than one causes leading to it. However, the unspecific description 'some Roman emperor has failed to conquer and hold some land at some point of time' is overdetermined a lot greater, because there are

multiple events that fit this description: e.g., not only Marcus Aurelius with Marcomannia is a good fit, but also Trajan with Mesopotamia, Augustus with Magna Germania and so on. It is exactly because the description is so unspecific that it is easy for many events to match the description, including the one with Marcomannia.

In the next chapter I will go deeper into the problem of description and evidence that supports it, while discussing underdetermination by evidence in history.

Chapter 3: Underdetermination by Evidence in History

In this chapter, I will address the issue that has been overlooked so far. Previously, I have been analyzing how effects can be still overdetermined even with counterfactual causes implemented. However, what I have not discussed enough is that we do not always have the certainty to define causation specifically and to know whether it is overdetermined due to underdetermination by evidence. This issue is important for history as a science that reconstructs events of the past, based on evidence. When underdetermination happens, determining only one way of describing an event from the part becomes impossible and multiple ways of history are possible upon an insufficient amount of evidence. In this chapter I am going to illustrate underdetermination by evidence on two historical examples, investigating also how it is related to overdetermination of events and what it means for counterfactual events.

Underdetermination by Evidence and Overdetermination of Events

Underdetermination by evidence is mainly discussed in philosophy and history of science. For example, Tucker argues that "a fixed yet constantly diminishing body of evidence for the past underdetermines the historical sciences" (Tucker 2011: 806). Similar to the way historical counterfactual events are constructed, this involves imagining alternative courses of history. Another philosopher of science Swaim describes it in the following way: "The presence of a possibility space is a consequence of the fact that the presently available evidence underdetermines the true historical sequence from an epistemic perspective." (Swaim unpublished: 1). His idea is that in actual history we often do not have enough evidence to determine a single narrative about the past, and thus proceed with alternative histories: "when the historical scientist attempts to answer the question, "What geological process accounts for

the formation of atoll reefs?", she understands — perhaps implicitly — that there is a number of ways things *might* have gone: she sees many possible histories" (Swaim unpublished: 3).

Although this discussion concerns mostly natural history, I believe that it might be useful in context of history in general, overdetermination of events and counterfactual events. Firstly, underdetermination by evidence happens not only in natural history. Secondly, underdetermination by evidence does not eliminate the distinction between actuality and counterfactual events. The fact about an event remains, even if there is no evidence to support it. Consider this example. Yesterday Peter dreamed about dragons. This is a fact, so a counterfactual event would be to say that Peter dreamed about ponies. As Peter has left little or no evidence about the content of his dream, it is hard to say what exactly was the dream about. This is underdetermination by evidence. However, there is still a fact that Peter's dream is about some p, so there must be counterfactual events, in which Peter's dream is about something else. Underdetermination of events. In this situation, when we cannot be sure what causes specifically overdetermine an effect, it becomes uncertain whether a specific effect is overdetermined and to what degree. Thus, event can be more overdetermined (closer to necessity), less overdetermined (closer to contingency) or it can be unknown.

Underdetermination by Evidence in History

Faustina Minor

Now I want to offer a short example of underdetermination by evidence, returning to The First Marcomannic War that I discussed in the previous chapter. As I have determined then, Avidius Cassius can be considered the cause of the uprising that led to Marcus Aurelius not being able to establish the province of Marcomannia. The topic I have omitted before while discussing these events is Faustina Minor, the wife of Marcus Aurelius, could encourage Avidius Cassius to revolt against the emperor.

Historia Augusta suggests that while Marcus Aurelius was repelling the invasion of Germanic tribes around 175 CE, Avidius Cassius "proclaimed himself emperor, some say, at the wish of Faustina, who was now in despair over her husband's death; others, however, say that Cassius proclaimed himself emperor after spreading false rumours of [Marcus Aurelius] Antoninus' death, and indeed he had called him the Deified" (Historia Augusta: Marc. 24.6-7). So, according to this source, Faustina could encourage Avidius Cassius to claim the throne, but it could be the case Faustina is not a real cause of the uprising and that Cassius has made this decision himself. This is the case of underdetermination by evidence, because there is a possibility of Faustina being a cause, but we cannot know for sure as even the source reports it as a rumor. Moreover, the source also suggests that this is a false rumor, which was produced by a Roman biographer Marius Maximus: "it would appear [from the correspondence between Marcus Aurelius and his wife] that Faustina knew nothing of the affair, though Marius Maximus, wishing to defame her, says that it was with her connivance that Cassius attempted to seize the throne" (*Historia Augusta*: Av. Cass. 9.9). The problem is that this assumption is based on the correspondence between Marcus Aurelius and his wife. Taking it seriously, we also must take seriously that Faustina did not lie to her husband by appearing to know nothing about Cassius, which might be not plausible.

To emphasize further that there is underdetermination by evidence, I should look at other sources about these events as well. According to a historian Cassius Dio, Faustina, "seeing that her husband had fallen ill and expecting that he would die at any moment, was afraid that the throne might fall to some outsider", so she "induced Cassius to make his preparations so that, if anything should happen to [Marcus Aurelius] Antoninus, he might obtain both her and the imperial power" (Cassius Dio: LXXII.22(2).11-13). This source supports the idea that the wife of the emperor led to the rebellion against her husband, being motivated by the emperor's bad health and fear for her welfare. Finally, a Byzantine chronicler John of Antioch claims that while Faustina has encouraged Cassius to revolt, he would have done it anyway, suggesting that Faustina is a redundant cause: "Cassius, the governor of Syria, a skillful general who had performed many notable achievements in the course of the Parthian war, was naturally inclined toward rebellion and was now encouraged to revolt, being led to this thought by Faustina, the wife of Marcus" (Joann. Ant., via Cassius Dio: LXXII, reference 12). This suggests overdetermination of Cassius' uprising by two redundant causes: Faustina and a natural inclination of Cassius⁵.

In this story, there is some evidence that Faustina inspired the rebellion of Avidius Cassius and there is also some evidence that Faustina had nothing to do with it, but both kinds of evidence are not strong enough. Therefore, there is uncertainty. The contradictory results of this example are the following: 1) Faustina could be a real cause, meaning that the rumor was true and without the wife Cassius would not have rebelled; 2) Faustina could be not a real cause, meaning that the rumor was false and without the wife Cassius would have still rebelled; 3) Faustina could be a redundant cause (either real or preemptive), meaning that it is irrelevant whether the rumor was true or false, because Cassius would have rebelled with or without Faustina. There is underdetermination by evidence, because all three versions are possible within the evidence we have. However, it is possible to avoid this underdetermination by evidence by making the description of history less specific and more abstract. Let us say, without mentioning Faustina, that Avidius Cassius rebelled against Marcus Aurelius for some

⁵ Causes are redundant, when they both participate in causation equally. Assuming that causes are redundant, I say that they all lead to the same effect if at least one such cause is present. But a different situation is possible, when causes are independent and do not participate in causation equally. An example of independent causes would be an arsonist and oxygen: they both cause fire, but their contribution into an effect is not equal. Fire without an arsonist but with oxygen is possible, but not vice versa. This is not overdetermination, so I omit this topic in the thesis.

reasons. These reasons might include Faustina and might not, but we cannot really know. As we have seen earlier, when I have discussed Woodward's notion of specificity, by doing so we can assume that there should be some number of causes behind the rebellion. So, the uprising is probably overdetermined, but it is uncertain to what degree it is overdetermined as we cannot know for sure what are the reasons and what is their number. Although I will return to specificity below, but for now I should stop discussing overdetermination of events due to underdetermination by evidence.

Kyivan Rus

Here I will demonstrate underdetermination by evidence on the example of the Christianization of Kyivan Rus. I will show how underdetermination by evidence makes it hard to determine what happened, creating uncertainty. Then I will show how this uncertainty can be resolved by describing an event less specifically.

Kyivan Rus is a Medieval federation of East Slavic tribes with the capital in Kyiv that has existed within modern-day Ukraine, Belarus and the European parts of Russia. Underdetermination by evidence in the case of Kyivan Rus is about the time of its Christianization. According to Eastern Slavic Orthodoxy version, which I will call the traditional one, the Christianization happened in 988 during the reign of Grand Duke of Kyiv Volodymyr the Great. This version is centered around the figure of Grand Duke Volodymyr and is based on Rus' sources. However, there is also another version, which I will call the alternative one. This version is based on different evidence (Greek, Arab sources) and is centered around Duke Askold of Kyiv. This version claims that the Christianization occurred in 860s.

Both theories are backed up by certain evidence and are acceptable in the academic field. I have noticed that while Rus' sources are mainly backing up the traditional version, whereas other evidence supports the alternative version more. However, two versions also have one source in common. This is the Church Statute of Duke Volodymyr (12th century). This source has a historical inconsistency, on the resolution of which opinions differ. The text claims that Volodymyr under his Converted name Vasiliy has received Christianity from the Constantinopolitan Patriarch Photius (Statute of Volodymyr). There is clearly an error, because Volodymyr's years of life are c. 958–1015 CE do not overlap with Photius' years – c. 810–891 CE. The traditional version resolves this inconsistency by claiming that Photius' name in this source must be a mistake.

The alternative version offers the opposite resolution of the issue. According to it, the name of Volodymyr has mistakenly appeared in the source. To be more specific, the main proponents of this version, Ukrainian philosopher and historian Mykhailo Braichevskiy and Russian historian Boris Rybakov, state that the inconsistency might be a result of a deliberate mystification that could be done in 12th century due to anti-Byzantine policy of the rulers of that time and the desire to glorify Volodymyr at the expense of Askold (Braichevskiy 1988; Rybakov 1963: 299). They support the version by fragmentary Greek and Arabic sources of 9th century which are usually neglected by the traditional version. The most famous source among them is the encyclical letter of Photius, which is dated by 867 and states that Rus was recently Christianized, following the suit of Bulgaria (Christianized in 864) (Photius: 49).

To solve the event Claim that a the other, a do. The fact

To sum up, from the point of view of historiography, we have two alternative versions of the event of the Christianization, but no conclusive evidence to rule out one possibility and claim that another one was the case. The evidence underdetermines a choice of one version over the other, and thus these two coexist in a similar way to how historical counterfactual events do. The fact that Rus has been Christianized at some point is certain. However, it is impossible to see whether the Christianization within specific date was bound to happen, because there is a little evidence to distinctively define the date of this events and thus its causes. Obviously the Christianization of 988 must have a different set of causes than the Christianization of 860s. So, as we cannot settle with one date due to underdetermination by evidence, it remains unknown what causes lead to the effect of the Christianization.

Nevertheless, it is still possible to resolve underdetermination by evidence in this example. Again, all I need to do is lose specificity, abstracting from the specific date. Let us say that Rus was Christianized in the Middle Ages. Now I have enough evidence to support this, because both dates are within the Middle Ages. I also can determine the causes of such an event in general, e.g. Byzantine missionary activities, that do not contradict these versions. The result is more unspecific description of the event. As I said earlier, unspecific description is probably more overdetermined, but leads to which is also more overdetermined as more causes could fit an unspecific description. So, losing underdetermination by evidence and its uncertainty, I also gain overdetermination of events. By abstracting from the concrete date here or by abstracting from Faustina in the previous example I can be certain now that some causes unspecifically lead to the known effect unspecifically. The problem here is that specificity is what is so relevant for history. For this reason, counterfactual constructs about Faustina, Askold or Volodymyr would be more interesting than counterfactual constructs about the Roman Empire or Kyivan Rus generally since specifics about human individuals (including their motives and how they influence history), to which we as human beings can relate, are absent in general and unspecific description of history.

Conclusion

Underdetermination by evidence happens when there is not enough evidence to define causation specifically. Within such underdetermination by evidence there is no way to see how many redundant causes of an effect there are and to what degree an effect is overdetermined. However, it does not mean that overdetermination of events does not happen and that the effect is contingent. There is some overdetermination of events or the absence of such, but we do not know the specifics. For both counterfactual and actual events this means that among less overdetermined and more overdetermined there must be also a value of uncertainly overdetermined (anywhere between contingency and necessity). There is still a way to solve uncertainty by losing specificity: to describe an event and its causes in a general and abstract way in order for the description to cover all possible versions that can be built upon the existing evidence. The drawback of this solution is that this unspecific description is less interesting for us. As the description covers all possible versions that the data allow, it excludes the details that vary from version to version. Meanwhile, historians are interested not in an abstract outline of history *per se*, but in details that can be found in history: e.g., individuals and their motives.

Conclusion

I began this thesis with two extreme views on history. The first is historical determinism, according to which history is fully necessary and inevitable, so no historical counterfactual events could happen. The second is historical antideterminism, according to which history is fully contingent and undetermined, so any historical counterfactual events could happen. I have argued for the middle ground between these two extremes, believing that history is partially contingent and partially necessary, and that some historical counterfactual events were more probable than others.

To prove this point, I first reconstructed the theory of historical counterfactual events, following Max Weber and Julian Reiss. I discovered that counterfactual events are such events that are making a difference in comparison with events of actual history. Moreover, historical counterfactual events that really could happen must be historically consistent, having conditions in actual history that would allow such events, and being plausible within historical context. Among the issues of the theory I found the issue of overdetermination of events to be relevant for historical counterfactual event. Overdetermination of events happens when one effect has several redundant causes. The issue is relevant, because it can render a counterfactual cause powerless to make a difference for an effect, which is overdetermined by many redundant causes.

Secondly, I explored different meanings of necessity. Connecting them to overdetermination of events, I observed that the more redundant causes overdetermine one effect, the closer the effect is to necessity; the less causes overdetermine one effect the closer it is to contingency. With the reconstructed theory of counterfactuals events I developed a few counterfactual events to see overdetermination of events in action. I discovered that some events are more overdetermined than others, distinguishing two important kinds of overdetermination of events: overdetermination in degrees, when an effect is overdetermined by a number of causes, and long-term one, when an effect is overdetermined by a time period. My conclusion here was the following. Events that have a small number of causes and events that are shortterm are relatively easy to change, so they are contingent. However, the outcome of changing them is not so big for long-term history, thus their difference-making is small in long-term history. Moreover, I also concluded that overdetermination of events is related to the specificity of its description. The less specific the description of an effect is, the more causes there are that lead to it and the more overdetermined it is and vice versa.

Thirdly, I observed the dependence between description, overdetermination of events and underdetermination by evidence. I investigated underdetermination by evidence by looking on two examples from history, after which I came to a conclusion that if an event is underdetermined by evidence, we cannot know how much it is overdetermined, since little is known about the event itself. For counterfactual events and actual history, it means that an event can be more overdetermined (closer to necessity), less overdetermined (closer to contingency) or uncertainly overdetermined (anywhere between contingency and necessity). It is possible to resolve the uncertainty of an event, resulting from underdetermination by evidence, by describing it in a less specific way. In this case, we omit the details in relation to which the underdetermination by evidence occurs, making the description more general. However, by doing this we lose what is relevant for us in history – the details, to which we can relate.

Finally, I showed that there are at least some events that could have gone differently, while others are unknown due to underdetermination by evidence. However, since overdetermination of events is also real, it means that history is also not fully contingent and antideterminism is disproven too. Thus, as intended, I have shown that history as such is neither

necessary nor contingent, but is somewhat necessary, somewhat contingent and somewhat uncertain.

Unspecific or long-term history, which tends to be free from underdetermination by evidence and its uncertainty, seems to be significantly overdetermined, which can undermine the actions and choices of concrete individuals as irrelevant details for such a history. However, such a history and its overdetermination might be also irrelevant for particular individuals. In his *Meditations* Marcus Aurelius argues that if one is pained by an external thing, but one cannot do anything about it due to some insuperable obstacle, then one should not be pained about it (Marcus Aurelius: VIII, 47). Likewise, even though it seems that unspecific or long-term history is heavily overdetermined, but this history is also very abstract and distant from individuals. What matters in our lives are specific and short-term things and for them our personal choices make a difference. Our personal choices may not make a great difference for unspecific or long-term history, but that does not make them irrelevant for us. It even seems that the more they are overdetermined and the closer they are to necessity, the less relevant they are for us as we cannot change them. And vice versa, the less they are overdetermined and the closer they are to contingency, the more relevant they are for us as we can change them. This, however, is yet to be determined more certainly by further research.

CEU eTD Collection

References

- Ben-Menahem, Yemima, 2009. Historical necessity and contingency. In A. Tucker (ed.), A Companion to the Philosophy of History and Historiography. (Oxford: Wiley-Blackwell, 2009), pp. 120–130.
- Braichevskiy, Mykhailo Yulianovych, 1988. *Christianity adoption in Rus*. Kyiv: Naukova Dumka. [Брайчевський, Михайло Юліанович, 1988. Утвердження християнства на Русі. Київ: Наукова думка.]
- Cassius Dio, *Roman History*. Latin text and English translation at LacusCurtius. <<u>http://penelope.uchicago.edu/Thayer/E/Roman/Texts/Cassius_Dio/</u>>.
- Ferguson, Niall, 1999. Virtual History: Towards a 'chaotic' theory of the past. In *Virtual History: Alternatives and Counterfactuals*, edited by Niall Ferguson. New York: Basic Books, pp. 1-90.
- Girle, Rod, 2009. Modal Logics and Philosophy. Second Edition. Durham: Acumen.
- *Historia Augusta*. Latin text and English translation at LacusCurtius. <<u>http://penelope.uchicago.edu/Thayer/E/Roman/Texts/Historia_Augusta/home.html</u>>.
- Lewis, David, [1973] 2001. *Counterfactuals*. Oxford: Blackwell Publishers Ltd. and Maiden, Massachusetts: Blackwell Publishers Inc.
- —, 1979. Counterfactual Dependence and Time's Arrow. Noûs, 13: 455–476.
- —, 1987. Postscripts to "Causation". *Philosophical Papers II*, pp. 172-213. New York, Oxford: Oxford University Press.
- Maar, Alexander Weller, 2016. Applying D. K. Lewis's Counterfactual Theory of Causation to the Philosophy of Historiography. *Journal of the Philosophy of History* 10 (3): 349-369
- Marcus Aurelius. *Meditations*. Translated by Robin Hard. With an Introduction and Notes by Christopher Gill. Oxford, 2011: Oxford University Press.
- Menzel, Christopher, 2017. Possible Worlds. *The Stanford Encyclopedia of Philosophy* (Winter 2017 Edition), Edward N. Zalta (ed.), URL = https://plato.stanford.edu/archives/win2017/entries/possible-worlds/>.
- Menzies, Peter, 2017. Counterfactual Theories of Causation. *The Stanford Encyclopedia of Philosophy* (Winter 2017 Edition), Edward N. Zalta (ed.), URL = https://plato.stanford.edu/archives/win2017/entries/causation-counterfactual/>.
- Photius. *Photii Patriarchae Constantinopolitani Epistulae et Amphilochia*, volume I. Leipzig, 1983.
- Reiss, Julian, 2009. Counterfactuals, Thought Experiments, and Singular Causal Analysis in History. *Philosophy of Science*, Vol. 76, No. 5 (December 2009), pp. 712-723.
- Rosenfeld, Gavriel D., 2016. The Ways We Wonder "What If?". Towards a Typology of Historical Counterfactuals. *Journal of the Philosophy of History* 10, pp. 382-411.
- Rybakov, Boris Alexandrovich, 1963. Ancient Rus. Legends, bylinas, chronicles. Moscow: USSR Academy of Sciences Publishing House. [Рыбаков, Борис Александрович,

1963. Древняя Русь. Сказания, былины, летописи. Москва: Издательство АН СССР.]

- Schuurman, Paul, 2017. What-If at Waterloo. Carl von Clausewitz's use of historical counterfactuals in his history of the Campaign of 1815. *Journal of Strategic Studies*, Vol. 40, No. 7, pp. 1016-1038.
- Starr, William, 2019. Counterfactuals, *The Stanford Encyclopedia of Philosophy* (Spring 2019 Edition), Edward N. Zalta (ed.), URL = https://plato.stanford.edu/archives/spr2019/entries/counterfactuals/.
- Statute of Duke Vladimir Svyatoslavich About Tithes, Courts and Church People. The End of X – XII centuries. In *Russian legislation of the X-XX centuries*. Volume 1. Moscow, 1984, pp. 139-140. [Устав князя Владимира Святославича о десятинах, судах и людях церковных. Конец X – XII вв. В *Российское законодательство X-XX веков*. Том 1. Москва, 1984, сс. 139-140]. = (Statute of Volodymyr).
- Swaim, Daniel G., (unpublished). The Roles of Possibility and Mechanism in Narrative Explanation. *An Archive for Preprints in Philosophy of Science*. URL = ">http://philsciarchive.pitt.edu/14744/.
- Tucker, Aviezer, 2011. Historical Science, Over- and Underdetermined: A Study of Darwin's Inference of Origins. *The British Journal for the Philosophy of Science*, Vol. 62, No. 4 (December 2011), pp. 805-829.
- Weber, Max, [1905] 1949. Objective Possibility and Adequate Causation in Historical Explanation. In Max Weber, *The Methodology of the Social Sciences*, edited and translated by Edward Shils and Henry Finch. Glencoe, Illinois: Free Press, pp. 164-188.
- Wolfram, Herwig, 1997. *The Roman Empire and Its Germanic Peoples*. Translated by Thomas Dunlap. Berkeley, Los Angeles, London: University of California Press.
- Woodward, James, 2010. Causation in biology: stability, specificity, and the choice of levels of explanation. *Biology and Philosophy* 25 (3): pp. 287-318.