

Introduction

Anyone who has spent some time around children or philosophers will be familiar with the following situation: The child or philosopher will ask a why-question and demand an explanation for the fact or phenomenon at hand. If lucky, one will be able to produce an answer, albeit just to be confronted with a further why-question concerning that answer. Then, at some point of this game of why-questions and because-answers, it seems that the interrogee will have to admit their ignorance, claim that at that point there is simply no explanation to be had, dare to spin around in a circle, or embark on an infinite regress and hope that their interlocutor tires before they do.

The interrogee's woes are likely exacerbated if the why-questions concern matters like logical truths, modal and essential truths, explanatory or normative principles, laws of metaphysics or nature themselves, certain axioms or first assumptions, and the existence of various special entities such as the empty set, the world in its entirety or God, or even the existence of anything at all. Matters like these can seem to be particularly stubborn when it comes to their explanation. For some of them, it may not be clear what shape an explanation could take even in principle (sometimes the existence of anything at all is treated like this). Others may appear not to require an explanation, or it can even seem that asking for an explanation is somehow misguided in such cases (for example, this has been suggested for essential truths). Finally, some of these truths may seem to demand a special, in some sense particularly strong, kind of explanation to do them justice.

In a nutshell, the present book develops, explores, and applies a notion of explanation that promises some help for our unfortunate interrogee, namely *empty-base explanation*.² While this idea is novel, it is located in the theoretical background of several fundamental and tricky philosophical issues. With respect to these, the investigation of empty-base explanation promises to improve our understanding, helps to better assess existing accounts, and supplies us with promising, novel approaches. To name but one example here, it will be argued that empty-base explanation provides a convincing kind of ultimate or final explanation, i.e. an explanation that completely and conclusively explains a phenomenon without involving other phenomena for which further explanations could be

² A note on terminology: I have chosen the label 'empty-base explanation' because, as we will see, it reveals a defining characteristic of the kind of explanation in question. In personal communication, Kit Fine has suggested to me the perhaps snappier, but less transparent, 'null-explanation', which by now has been used at least once in print by Hicks and Wilson (2021).

demand. As will be shown, the notion of empty-base explanation thereby has a significant import for (amongst others) philosophical cosmology/theology (e.g. the cosmological argument), the debate about the principle of sufficient reason, and the question of why there is anything at all.

To start developing a grasp of the notion of empty-base explanation, observe first that ordinary explanations have a tripartite structure consisting in an explanandum (that which is to be explained), a set of reasons why the explanandum obtains (call this the explanatory base), and an explanatory link or principle that connects the reasons to the explanandum. Together, the explanatory base and the explanatory link make up what is often called ‘explanans’.³ For example, in causal explanations, the explanandum is an effect (e.g. a certain window’s breaking), while the explanatory base contains a cause of the effect (e.g. someone’s throwing a ball at the window). Causes and effects are then linked by a causal connection or law of nature. Analogously, in (ordinary) grounding explanations, the explanandum is a grounded fact (e.g. a certain rose’s being red), the explanatory base contains a corresponding ground (e.g. the rose’s being scarlet), and both are linked by a grounding connection or corresponding law of metaphysics.

In contrast, this book argues (focusing primarily, but not exclusively, on non-causal explanations) that there are possible explanations whose corresponding set of reasons is empty – i.e. *empty-base* explanations. Hence, these are explanations that apart from the explanandum (the proposition or fact that *P*) only involve an explanatory link, but no reasons why *P*.⁴ Therefore, whereas in ordinary explanations, reasons and explanatory link must work together to explain the explanandum, the link (or explanatory principle) of an empty-base explanation explains the corresponding explanandum without the help of any reasons why the explanandum obtains.

In this respect, an empty-base explanation is akin to (valid) arguments for logical theorems with an empty set of premises: Normally, both premises and inference rules are required to establish a conclusion, but if the conclusion is a logical theorem, inference rules alone can suffice. Arguments are normally taken to be composed of a set of premises and a conclusion, but in logic, it is customary to allow for arguments to have an empty set of premises and correspondingly allow for the notion of logical consequence to hold between an empty set of propositions and a further proposition. This extension of the notions of argument and

³ The concepts and assumptions that underlie the notion of empty-base explanation will be properly developed in chapter 1 and the notion itself will be properly introduced and clarified in chapter 2.

⁴ As we will see, in special cases the explanatory link can (as part of a further explanation) also be a reason why *P*, but this is the exception, not the rule.

logical consequence are theoretically useful in that they can be used to define the notions of logical truth and theorem: Logical truths are propositions for which a valid argument with an empty set of premises exists; logical theorems are propositions for which a proof from no propositions exists.

It is helpful to think about empty-base explanation in analogous fashion: Explanations why P involve an explanatory base, i.e. a set of reasons why P , and an explanatory link. Empty-base explanations why P are analogous to arguments with an empty set of premises in that they are explanations with an empty base, i.e. an empty set of reasons why P .⁵

This book aims to show (using both general considerations from the theory of explanation, as well as concrete applications to a number of topics) that this extension of the notion of explanation is legitimate, philosophically interesting, and theoretically useful. More specifically, it aims to establish that empty-base explanation is possible (more precisely and cautiously it will be argued that the nature of explanation allows for there to be empty-base explanations), explores applications of empty-base explanation, provides a better understanding of empty-base explanation by investigating varieties of empty-base explanation, as well as what it takes for an explanatory notion such as grounding or causation to have a corresponding kind of empty-base explanation, and investigates the epistemology of empty-base explanation. An important conceptual precursor of the notion of an empty-base explanation is Kit Fine's (2012) notion of zero-grounding. One aim of this book is to provide the literature on zero-grounding with a more solid theoretical footing.

In the following I provide an overview of the book's chapters. While each chapter contributes to the book's overall argument, it is possible to read chapters 1 and 2 to acquire an understanding of the notion of empty-base explanation and then pick from the other chapters which can be read mostly independently of each other.⁶

5 The analogy is from deRosset (2013b) and Litland (2017) – we will come back to it repeatedly, starting with chapter 2.

6 While I introduce the required standard notions (e.g. essence and grounding) and technical devices of contemporary metaphysics presupposed by the discussion, the reader might additionally want to refer to Fine (1994) for the notion of essence, Fine (2012) for the notion of grounding, and to Rosen (2010) on grounding and essence. Good further sources can be found in the collection Correia and Schnieder (2012) and the ubiquitous *Stanford Encyclopedia of Philosophy*.

Chapter 1: Preliminaries

This chapter establishes the framework for the project by introducing several important notions such as explanation, grounding, essence, laws of metaphysics and laws of nature, and then defending some required assumptions (such as the tripartite account of the structure of explanation, cf. Schaffer 2017) about these notions, why-questions and because-sentences, reasons why and understanding why.

Chapter 2: Introducing Empty-Base Explanation

This chapter introduces the notion of an empty-base explanation and argues for the possibility of empty-base explanation by

- (a) invoking general considerations concerning the nature of explanation such as the tripartite account of explanation, the connection between explanation and explanatory arguments, and the form of propositions involving explanatory notions,
- (b) offering plausible candidates for empty-base explanations,
- (c) exploring its connection to the speech act of explanation, because-sentences and understanding why,
- (d) presenting and discussing a conceptual precursor of empty-base explanation, namely zero-grounding (introduced in Fine 2012), as well as some of its discussion and suggested applications (for example due to Litland 2017, Muñoz 2020, De Rizzo 2020, and Litland 2022), and
- (e) considering its epistemic value and connection to the idea of ultimate explanation.

Parts of this chapter are based on Kappes (2020a), Kappes (2020b), and Kappes (2022).

Chapter 3: Explanation by Status

This chapter investigates *explanation by status*, an alleged kind of explanation in which – roughly speaking – a fact is explained by its having a certain status, such as its being a necessary or essential fact. The chapter

- (a) discusses several problems for explanation by status,
- (b) argues that proposals for explanation by status are best construed as proposals for empty-base explanations and applies this idea to some proposals

- for explanations by status (e.g. concerning the explanation of law-like regularities and certain answers to the question of why there is anything at all),
- (c) argues that the account is superior to Glazier's (2017b) alternative approach,
 - (d) applies the account to argue that while explanation by essential or law-status is possible, explanation by necessary status or mere high probability (cf. van Inwagen 1996) is not. An account of probabilistic empty-base explanation is proposed and compared with a recent idea by Hicks and Wilson (2021). And finally, the chapter
 - (e) suggests how the account may be able to elucidate the explanatory connection between laws and the corresponding universal generalizations: Each law figures as a link both in ordinary explanations and in an empty-base explanation of its corresponding universal generalization.

By so linking empty-base explanation with explanation by status, a further application of empty-base explanation is identified which supports the legitimacy of both empty-base explanation and (some forms of) explanation by status. Parts of this chapter are based on Kappes (2020a) and have grown out of joint work with Benjamin Schnieder in Kappes and Schnieder (2016).

Chapter 4: Explanation of Logical Theorems

This chapter expands on the discussion of empty-base explanation by discussing candidates for explanatory notions that may allow for empty-base explanations of logical theorems that go beyond the grounding explanations to be found in the literature.⁷ It argues that the standard grounding explanations of logical theorems on their own are unsatisfactory and that the existence of an empty-base explanation of logical theorems would be preferable. The chapter implements this idea by

- (a) discussing the prospect of zero-ground explanations of logical theorems,
- (b) developing a notion of explanation based on Yablo's (2014) idea of reductive truthmaking and argues for an empty-base explanation of logical theorems based on this notion, and
- (c) turning to a notion of explanation based on essence and metaphysical laws and to an explanation of logical theorems in terms of their status as essential truths and metaphysical laws, to be understood as an empty-base explanation

⁷ See, e.g., Schnieder (2011) and Fine (2012).

along the lines of chapter 3. An application of this notion in the philosophy of mind is suggested.

Parts of this chapter are based on Kappes (2020a).

Chapter 5: Causation Ex Nihilo: Could There Be Empty-Base Causal Explanations?

This chapter investigates whether and why there could (or could not) be empty-base *causal* explanations. In more traditional terms, this amounts to an investigation of the notion of *causation ex nihilo*. The issue is of considerable interest in its own right, but even more so in the present context because if empty-base causal explanation is not possible, we better have a good account of why empty-base explanation in general (or at least of the metaphysical sort) remains possible. The chapter investigates the possibility and potential application of causal explanations with an empty base and empty-base explanations by law of nature by

- (a) developing an account of why certain explanatory relations may allow for corresponding empty-base explanations while others do not,
- (b) arguing that Litland's (2017) argument for the zero-grounding of non-factive grounding claims generalizes to laws of nature and possibly non-factive causal claims,
- (c) using these findings to propose an empty-base explanation of laws of nature and possibly causal claims, thereby taking some steps towards addressing a recent challenge by Kovacs (2022), and finally
- (d) evaluating the possibility of empty-base explanation by law of nature with a dynamic (i.e. temporal) character by (1) discussing a recent example for such an explanation identified by Hicks and Wilson (2021), and (2) offering thoughts on the form of the required laws and potential test cases.

Chapter 6: Self-Explanation

This chapter investigates the possibility of *self*-explanation. The findings of chapter 1 are used to differentiate between self-explanations in a restrictive and in an inclusive sense; the inclusive notion is then defended against several arguments and the results are applied to solve a grounding problem for Humeanism about laws of nature (cf. Loewer 2012 and Lange 2013b). The inclusive notion of self-explanation is then combined with the notion of an empty-base explanation to define a notion of self-explanation that bears some resemblance to the idea of

rule-circular justification. The notion is defended against Kovacs' (2018) arguments against self-explanation, and its applications to the question of iterated grounding, the idea of explanatory self-subsumption (cf. Nozick 1981, 119ff.), the debate about the principle of sufficient reason and necessitism, and historical ideas from philosophical theology (from Aquinas and Spinoza) are explored. This chapter is based in part on Kappes (2022).

Chapter 7: The Epistemology of Empty-Base Explanation

This chapter explores the epistemology of empty-base explanation. Several methods by which empty-base explanations may be established are discussed (some of which are employed in the literature on zero-grounding, e.g. by Fine (2012) and Litland (2017)) and inference to the best explanation (IBE) is identified as a particularly interesting candidate. Its use in metaphysics is explored and an account is formulated that allows for grounding claims and laws of metaphysics in general, but most notably metaphysical empty-base explanations to be established by IBE. A distinctive problem for abductive methodology stemming from zero-grounding claims and empty-base explanation more generally is established and then addressed.

As this overview makes apparent, the phenomenon of empty-base explanation is investigated from a number of angles. An additional thread that runs through the following chapters is how what is developed therein bears on issues surrounding certain notorious philosophical why-questions and the kind of special explanatory answers that they seem to demand. As an example, consider the question of why there is anything at all.

Arguably, not every correct answer to the question 'Why is there something?' is a satisfactory answer to the question 'Why is there anything at all?': One correct answer to the question of why there is something consists simply in a because-claim that cites the existence of a particular thing, for example 'There is something because Proxima Centauri exists', but this hardly seems to be the profound answer to the question some philosophers have desired when asking why there is anything *at all*.⁸

Two respects in which explanations can be profound are particularly important here: First, explanations may be required that eliminate involvement of certain concepts or entities. For example, when asking why there are any giraffes at all, answering by giving reasons that involve giraffes (e.g. by pointing out that giraffes in the past procreated and brought about present giraffes) will plausibly

8 Cf. the recent collections Goldschmidt (2013) and Leslie and Kuhn (2013) on the topic.

frustrate the inquisitive interests we had when asking the question. Rather, what seems to be required is an answer that can do without reasons that involve any giraffe whatsoever (for instance an evolutionary story of how giraffes came about). Similarly, when asking why there is anything at all, an answer may be desired which does not involve reasons that involve existence or any existents whatsoever (whether such an answer could in fact be given need not occupy us here).

The second respect in which an explanation can be profound that concerns us here is ultimacy. Ultimate explanations, as I use the term, are explanations that, in some to be specified sense, do not give rise to further why-questions or further need for explanation.⁹

Empty-base explanation promises to deliver on both counts: Since empty-base explanation allows explaining why *P* without involving reasons why *P*, empty-base explanations allow – in principle – to eliminate any concept whatsoever that occurs in the explanandum from the reasons involved in the corresponding explanans, because the explanans of an empty-base explanation why *P* only consists in an explanatory link, but in no reasons why *P*. For example, if there were an empty-base explanation of why there are giraffes, then this explanation would not involve any reasons why there are giraffes and hence explain the existence of giraffes without reasons that involve giraffes.¹⁰

With respect to ultimacy, empty-base explanations promise to deliver because they are explanations that do not involve reasons why for which the question why they obtain arises. Thus, empty-base explanations as they will be introduced in chapter 2 allow to terminate chains of reasons why without leaving any reason why in the chain unexplained. The discussion in chapter 3 further bears on issues of ultimate explanation and the question of why there is anything at all, because (as we will see) several philosophers have suggested that explanations by status – especially necessary status – are in some sense ultimate explanations that afford satisfactory answers to the question why there is anything at all. Thus, both the

⁹ For more discussion of these matters see Kappes and Schnieder (2016).

¹⁰ Spelling out the intuitive understanding of involvement that I rely on here is not completely straightforward. For example, note that we can satisfactorily answer why there are giraffes at all while using explanatory links such as causal links that do in *some* sense involve giraffes (or the concept of giraffes). To wit, consider an explanation that uncovers the existence of non-giraffe ancestors of giraffes and the causal link that runs from them to some giraffe. Such an explanation would seem to provide a satisfactory answer to the question of why there are any giraffes at all. But then, if, as seems plausible, the explanation why there are giraffes at all should do without involvement (in the relevant sense) of giraffes in both reasons and explanatory link, then the sense in which giraffes are involved in the causal link in the above explanatory candidate cannot be the relevant sense.

criticism of explanation by (necessary) status as well as the constructive suggestion of chapter 3 to reconceive of explanation by status in terms of empty-base explanation are relevant to this topic.

Chapters 4 and 5 bear on the matter of ultimate explanation and the question of why there is anything at all insofar as they explore what kinds of explanation besides grounding explanation allow for empty-base explanation. Some philosophers (e.g. Nozick 1981, 115ff.) believe that only self-explanations can be truly ultimate explanations. Indeed, even an empty-base explanation involves an explanatory link which may give rise to the question why it obtains. Chapter 6 addresses this issue by exploring the viability of a notion of self-explanation that can be defined using the notion of empty-base explanation. Lastly, in the literature on the question why there is anything at all, a variety of answers have been argued for by (apparently) inference to the best explanation.¹¹ The discussion in chapter 7 bears on this matter insofar as it undertakes some steps towards an account of this abductive practice, while pointing out difficulties that the relevant abductive inferences face.

Finally, a word of caution: As an exercise in conceptual explication and engineering, the following material might eventually skim the edge of conceptual coherence. It will be my task to argue how far we can go, and it will be up to the reader to decide how far they wish to come along. But rest assured, while I defend the possibility of explanations why without reasons why, I do not aim to do so without reason.

¹¹ For example, the application of inference to the best explanation is implicit in the works of Rundle (2004) and Rescher (2016).