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CLARIFYING THE GROUNDING

The study clarifies the concept of grounding. Metaphysical grounding is characterized as an explanation of constitutive relationships among facts (as well as entities, beings, substances, and other objects of metaphysical inquiry). It is distinct from causation, supervenience, logical entailment, and computability. Grounding functions as a metaphysical operation that explicates how a given fact (entity, being, substance, and another object of metaphysical inquiry) is constituted by other facts (entities, beings, substances, and other objects of metaphysical inquiry). These grounding facts (entities, beings, substances, and other objects of metaphysical inquiry) must include recognition of the existence of the relevant fact (entity, being, substance, or other object under consideration). Proper grounding, therefore, requires a complete account of all facts that determine the given fact. When this condition is not satisfied, the relation should be described not as grounding but as quasi-grounding.

Keywords: *fact, grounding, logic, metaphysics, philosophy of science.*

The concept of grounding has been developed within analytic philosophy, especially analytic metaphysics, over the last few decades [Bliss and Trogon 2021; Correia and Schnieder (ed.) 2012b; Raven (ed.) 2020; Thomasson 2025: 73–103]. This concept is not well-known in Ukraine. The only works I know of that use this concept are those of Dmitriy Lyashenko. However, Lyashenko uses this concept as something already comprehended, clear, and well defined [Ляшенко 2024; Lyashenko 2023]. Yet, I think it doesn't suit the current situation, despite the substantial amount of material that researchers studying grounding have obtained. I assume that «grounding» requires clarification, especially since researchers claim that it is distinct from causation, supervenience, and entailment. When attempting to grasp the concept of grounding, one encounters philosophical issues that are not obvious to researchers of grounding.

The **purpose** of this study is **to clarify the concept of grounding.**

The important point is that grounding is a metaphysical concept. The researchers of grounding start with the following: «Hume was mistaken. Causation is not the cement of the universe. There are other equally important metaphysical relations that structure the universe. Causation is just one species of the generic relation of determination. Besides causal determination, there are various species of non-causal determination, including necessitation. In addition to those two categories of relations, there are relations of supervenience (which itself has species), ontological dependence, and grounding» [Daly 2012: 81]. In other words, researchers studying grounding believe that different metaphysical relations are equally important for structuring the universe. These relations include causation, ontological dependence, supervenience, and grounding (and others).

Often, researchers of grounding begin their history of grounding with

Aristotle. For example, Jonathan Schaffer claims that, since Aristotle founded the philosophical discipline of metaphysics, it has focused on grounding. Below are two quotes from Schaffer's work: «Grounding is an unanalyzable but necessary notion – it is the fundamental structuring concept of metaphysics» [Schaffer 2009: 364]. «Central metaphysical questions are not about whether entities exist but how they do» [Schaffer 2009: 363]. Schaffer arrives at this understanding of metaphysics through his interpretation of fragments of Aristotle's «Metaphysics» that discuss the object of knowledge in Aristotle's first philosophy, namely: «We must inquire of what kind are the causes and the principles, the knowledge of which is wisdom» [Aristotle 1984b: 1553]; «It is the work of one science to examine being qua being, and the attributes which belong to it qua being, and the same science will examine not only substances but also their attributes, both those above named and what is prior and posterior, genus and species, whole and part, and the others of this sort» [Aristotle 1984b: 1587]; «Substance is the subject of our inquiry; for the principles and the causes we are seeking are those of substances. For if the universe is of the nature of a whole, substance is its first part...» [Aristotle 1984b: 1688].

Schaffer relies on the concept of substance and cites Aristotle's famous logical treatise, «Categories», which explains the concept of substance. First, «Categories» discusses two types of substance: primary and secondary (πρῶται οὐσίαι καὶ δεύτεραι οὐσίαι). Schaffer ignores secondary substance. What is important to him is what Aristotle says about primary substance: «So if the primary substances did not exist it would be impossible for any of the other things to exist» [Aristotle 1984a: 5]. This allows Schaffer to assert that «on Aristotle's view, metaphysics is the discipline that studies substances and their modes and kinds, by studying the fundamental entities and what depends on them» [Schaffer 2009: 351].

Secondly, «Categories» [Aristotle 1984a] discusses ten categories ((substance (οὐσία, essence or substance); quantity (ποσόν, how much); quality (ποιόν, of what kind or quality); relation (πρός τι, toward something, relative); time (πότε, when); place (πού, where); relative position, posture, attitude (κείσθαι, to lie); having or state, condition (ἔχειν, to have or be); doing or action (ποιεῖν, to make or do); being affected or affection (πάσχειν, to suffer or undergo)). Schaffer understands Aristotle's categories as «ways things depend on substances» [Schaffer 2009: 355]. According to Schaffer, it turns out that things can depend on substances in different ways – numerically, qualitatively, temporally, spatially, relatively, etc.

Based on the above, Schaffer argues that according to Aristotle, «the task of metaphysics is to say what grounds what» [Schaffer 2009: 351] and «the method of metaphysics is to deploy diagnostics for what is fundamental, together with diagnostics for grounding» [Schaffer 2009: 351].

This interpretation has an obvious problem: as grounding researchers claim, grounding is not causation. This calls Schaffer's interpretation of Aristotle's metaphysics into question. Schaffer quotes Aristotle's «Metaphysics», in which

Aristotle states that metaphysics (or first philosophy) investigates first causes, the knowledge of which constitutes wisdom [Aristotle 1984b: 1553] [Schaffer 2009: 350]. This contradicts the common understanding of grounding in contemporary analytical metaphysics as non-causation [Bernstein 2016]. One must either argue that what Aristotle understood as causes were actually grounding or admit that Schaffer substituted grounding for causes, perhaps unintentionally. In any case, defining the main task of Aristotle's metaphysics as «to say what grounds what» [Schaffer 2009: 351] contradicts what Aristotle said about first philosophy. Rather, the main task of Aristotle's metaphysics is to say what causes what, that is, to reveal causal relationships¹. Some researchers, such as Fabrice Correia and Benjamin Schnieder, address this issue by referencing Max Hocutt [Hocutt 1974], who interprets the four causes of Aristotle – the four *aitiai* – as four «because» [Correia and Schnieder 2012b: 2]. This is a bold interpretation because *αἰτία* is usually translated as «cause», «reason», or even simply «blaming». In light of this, the main task of Aristotle's metaphysics should be to explain what causes what, what reasons what, and what blames what.

Correia and Schnieder argue that referring to Aristotle's metaphysics as the first conception of grounding is controversial [Correia and Schnieder 2012b: 2]. That's why they address Plato and Gottfried Leibniz. Correia and Schnieder argue that Plato addresses grounding in his dialogue «Euthyphro», in which Socrates and Euthyphro use the word «because» in their reasoning. For example, the following sentence appears: «If something is loved by the gods, it is loved by them because it is pious» [Correia and Schnieder 2012b: 3]. However, the presence of «because» in a sentence does not necessarily mean that the sentence references grounding; it could refer to causation or entailment. Correia and Schnieder also consider Gottfried Leibniz's principle of sufficient reason to be a kind of grounding [Correia and Schnieder 2012b: 4–6]. However, the name of the principle suggests that it is concerned with reason, not grounding. Therefore, Correia and Schnieder must demonstrate that reason and grounding are synonymous.

The cases of Jonathan Schaffer, Fabrice Correia, and Benjamin Schnieder illustrate that the history of grounding as a metaphysical concept is open to interpretation. Tracing its history back to Plato, Aristotle, or Leibniz is likely an attempt to pass off desire as fact. *The concept of grounding is most likely relatively new, and attempts to find it in the history of philosophy are recent interpretations of old philosophical conceptions that do not provide insight into what these authors actually wanted to convey.*

Metaphysicians introduced the concept of grounding to constitute relationships between facts (and, in Jonathan Schaffer's case, entities). Grounding is considered the constitution of relationships between facts (or entities), which differs from the establishment of causal relationships (i.e., causation) [Bernstein 2016]. Grounding is a certain metaphysical operation [Fine 2012: 43] on facts (entities) that is different from the operation of concluding in logic (conclusion, consequence, implication, entailment, inference, implication, and sequence) and supervenience. (I would add computability to this list).

Fabrice Correia notes that there is a canonical notion of grounding and non-canonical notions of grounding [Correia 2024: 5–7]. I am primarily interested in the canonical notion, because it is the most common:

«The notion is often expressed by means of predicates of facts, as in the following sentence type:

(1) The fact that q , the fact that r , . . . ground the fact that p .

Alternatively, one may express the notion using sentential operators as in:

(2) p because q , r , . . .

(3) Its being the case that q , that r , . . . make it the case that p .

One also encounters hybrid expressions, partly operational and partly predicational, such as:

(4) p in virtue of the fact that q , the fact that r , . . . » [Correia 2024: 2].

It is paramount to acknowledge that grounding is an operation that constitutes metaphysical relationships of dependence between one fact (entity) and other facts (entities). These relationships must meet the following criteria: (1) (one or many)-to-one, what means «that grounding of the corresponding sort is always of one particular fact, and that when a fact is grounded, it may be grounded in one fact, or in several facts taken together without being grounded in each of these facts taken individually» [Correia 2024: 2]; (2) factive, what means «that grounding of the corresponding sort relates facts» [Correia 2024: 3]²; (3) metaphysical, what can mean either to be fundamental or to hold metaphysical necessitation [Correia 2024: 3]; (4) explanatory, what means either «grounding is a form of explanation» or «grounding is not a form of explanation but is rather, like causation, a determinative notion that backs explanations» [Correia 2024: 4].

Each feature of grounding, as an operation that constitutes a metaphysical relation of dependence between facts (or entities), raises its own issues. I will examine several issues related to grounding criteria using an example from Keith Fine, one of the leading researchers in the field. Here it is: «The fact that the ball is red and round obtains in virtue of the fact that it is red and the fact that it is round» [Fine 2012: 37].

Upon reading the above, one immediately notices that it refers to facts. For Fine, grounding is a metaphysical explanatory relationship between facts. Correia agrees with him. However, I had previously considered Schaffer's conception of grounding, in which it is primarily a metaphysical explanatory relationship between entities, even though he ultimately reduces entities to substances. In their article «Metaphysical Grounding» for the «Stanford Encyclopedia of Philosophy», Ricki Bliss and Kelly Trogdon use two concepts to explain «metaphysical grounding»: «fact» and «entity». Apparently, when it comes to grounding, one can talk about either facts or entities.

Nevertheless, I believe it is impossible to replace a fact with an entity or *vice versa* because they are different concepts, even in general usage. For a quick example, «Cambridge Advanced Learners' Dictionary» defines «entity» as «something that exists apart from other things, having its own independent existence» [McIntosh (ed.) 2013: 506]. It also defines «fact» as «something that is

known to have happened or to exist, especially something for which proof exists, or about which there is information» [McIntosh (ed.) 2013: 541]. A fact requires information and/or justification, while an entity exists independently of other things. While an entity can support a fact (i.e., knowledge that the object being studied is independent of other objects), a fact does not always relate to an entity (because a fact does not always register knowledge that the object being studied is independent of other objects).

In the context of what has been said, the question concerns different types of grounding. The metaphysical grounding of facts explains the relationships between things that are known to have happened or exist, especially things for which proof exists or information is available. The metaphysical grounding of entities explains the relationships between things that exist independently. In the latter case, Fine's example should be rephrased: «The entity of ball is red and round in virtue of the entity of ball being red and the entity of ball being round».

Since there are two types of grounding, it can be inferred that there are others. Thus, Schaffer uses the concepts of being and substance to explain what grounding is within his conception. In common English usage, the words «being» and «substance» have meanings that distinguish them from «fact» and «entity». «Being» can mean «a person or thing that exists» or «the state of existing» [McIntosh (ed.) 2013: 130], while «substance» can mean «material with particular physical characteristics» [McIntosh (ed.) 2013: 1568]. Based on this, it can be suggested that the metaphysical explanation of the relationship between persons or things that exist, or the states of existing, is the grounding of beings, and the metaphysical explanation of the relationship between materials with particular physical characteristics is the grounding of substances. With this in mind, Kit Fain's example can be rewritten as follows:

«The being of ball is red and round obtains in virtue of the being of ball is red and the being of ball is round»;

«The substance of ball is red and round obtains in virtue of the substance of ball is red and the substance of ball is round».

Using the concepts of fact, entity, being, and substance to describe grounding involves investigating different metaphysical objects and types of grounding³.

Admitting that there are various objects and types of grounding means that the criterion of factivity should not be considered fundamental to grounding. Factive(ness) is only important when it comes to the grounding of facts. In the case of beings, entities, and substances, equivalents must be found for factivity, such as beingness, entitiveness, and substantiveness, respectively.

It should be noted that, although it is of a metaphysical nature, grounding is an explanation. This means that the same requirements and rules that generally apply to explanations, such as those formulated by Carl Hempel and Carl Hempel and Paul Oppenheim [Hempel & Oppenheim 1948], can be applied to grounding.

An explanation consists of an explanandum, or that which needs to be explained (the lesser known), and an explanans, or that by means of which it is explained (the better known). This explanatory structure was proposed by analogy

with the structure of a definition, which has a defined term (*definiendum*, the thing being defined, the lesser known) and a defining term (*definiens*, the thing used for defining, the more familiar).

The explanandum is grounded in the explanans. The explanans constitutes the explanandum. The explanans explains the explanandum. Without the explanans, there can be no explanandum. Without the explanans, there can be no explanandum. Here, the explanandum is what is grounded, and the explanans is the ground. According to the grounding criterion, the explanandum (what is grounded) must be singular, and the explanans (ground) must not be singular. This means that metaphysical grounding of the corresponding sort is always of one particular fact, entity, being, or substance. When a fact, entity, being, or substance is grounded, it may be grounded in one or several of these, without being grounded in each one individually (see: [Correia 2024: 2]).

Consider the example of a ball: explaining that the ball is red and round (the explanandum) is based on the facts that the ball is red and round (the explanans). More precisely, the fact that the ball is red and round is grounded in the facts that the ball is red and the ball is round.

When drawing a parallel between explanation and definition, note that in a definition, the *definiens* is what is known, and the *definiendum* is what is unknown. For example, consider the word «biology». It is not known what this word means. When defining the concept of biology, one draws upon what is known: that there is a natural science and a scientific study of life forms. Thus, one arrives at the definition, «Biology is a natural science that studies life forms». In practice, defining the concept of biology is not just a matter of providing a definition, but also of clarifying and explaining what biology is. In traditional formal logic, a definition is a logical operation performed on the content of a concept. It is a precise operation that reveals the content of a concept with the help of other concepts. By analogy, explaining something reveals its content. Similarly, grounding as a metaphysical explanation reveals the content of one fact using other facts.

In logic, a definition is presented as a judgment (statement or proposition) (cf., «Biology (*S*) is a natural science that studies life forms (*P*)»), in which the concepts of subject and predicate are taken in their entirety, i.e., distributed. In philosophy and the methodology of science, an explanation is presented as a judgment in which the explanandum and explanans must be taken in their entirety as concepts.

If grounding is an explanation, then the facts in that explanation can be treated as concepts. This means the initial fact must coincide completely with all the facts used to justify it. In this case, full grounding is possible (the fact that «the ball is red and round» is not fully grounded if it is justified only by the fact that «the ball is red»). In traditional formal logic, if the scopes of the *definiendum* and the *definiens* do not coincide completely, it is either an incorrectly made definition (in which case it is no longer a definition) or the use of another logical operation, such as characterization, to reveal the content of the concept instead of a definition..

In the context of grounding, if there is no absolute congruence of facts in terms of scope, it is more accurate to refer to quasi-grounding than grounding (e.g., the fact «the ball is red and round» is not equivalent to the fact «the ball is red»). A complete mismatch of facts indicates that the facts justifying another fact do not do so with metaphysical necessity. In this case, metaphysical necessity coincides with logical necessity through the coincidence of the scopes of concepts. In this context, Fine's [2012: 50] proposed distinction between partial and full grounding does not make sense. Real grounding is full grounding, which occurs when all facts that ground the target fact are identified without exception. Partial grounding is not real grounding but rather quasi-grounding, which can become real grounding.

The foregoing suggests that, in order to determine the grounding of a fact, entity, being, or substance, one must know the precise number of facts, entities, beings, or substances that constitute it by metaphysical necessity. In the example «the ball is red and round», by identifying the constitutive facts (entities, beings, or substances) – namely, «the ball is red» and «the ball is round» – have all the constitutive facts been identified? Without constituting the existence of the ball, it is impossible to study it or make any claims about it. Therefore, the fact that the ball is red must be in virtue of the fact that the ball exists, the fact that the ball is red, and the fact that the ball is round. In cases involving grounding, the existence of an entity, being, or substance must, in a sense, be constituted. Although this constitution is implied, it must be made explicit alongside the other facts that ground the target fact.

Conclusion. The concept of grounding, as discussed above, is substantively characterized as follows: metaphysical grounding is an explanation of the constituted relationships between facts (entities, beings, substances, and other objects of metaphysical inquiry), which differs from causation, supervenience, entailment, and computability. It functions as a metaphysical operation that explicates the constitutive relationship between a fact and other facts. Among these facts, there must be an acknowledgment of existence, either of an entity, being, substance, or other object of metaphysical inquiry. One can only speak of grounding by mentioning all the facts that determine the target fact, without exception. Otherwise, one is dealing with quasi-grounding, or what Keith Fine calls «partial grounding».

Notes

¹ Aristotle compiled a list of first causes, or principles. These include the formal cause («What is it?»), the material cause («What is it made of?»), the efficient cause («Who or what makes it?»), and the final cause («What is it for?»). By discovering these causes, one can learn about things. For example, a pot is a container made of clay by a potter for storing and transporting powdered and liquid substances. These are all the causes of the pot's existence and entelechy, or the realization of its potential existence through the realization of all four causes. If one accepts Aristotle's substitution of «causes» for «grounding», then one should say that Aristotle's «grounding» presupposes the use of his four «causes» as bases for grounding. In this case, one should speak of the pot as being grounded in the

fact that it is a container, the fact that it is made of clay, the fact that it is made by a potter, and the fact that it is made for storing powdered and liquid substances.

² «Facts, in this context, may be understood as obtaining states of affairs, or alternatively as true propositions» [Correia 2024: 3].

³ The list of types of metaphysical objects with which grounding can be concerned, and therefore the list of types of grounding, can be expanded further. For the sake of argument, consider grounding things, where a thing is understood as Avenir Uyemov defines it – anything that can be named. In this case, Fine's example would be reformulated as follows: «The ball as a thing is red and round obtains in virtue of the ball as a thing is red and the ball as a thing is round». Or, in greater detail: «The ball as a thing has redness as a property and roundness as a property obtains in virtue of the ball as a thing having redness as a property and the ball as a thing having roundness as a property».

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Костянтин Райхерт

ПРОЯСНЮЮЧИ «ГРАУНДІНГ»

Метою статті є уточнення поняття граундінгу (*grounding*). Метафізичний граундінг розглядається як пояснення конститутивних відношень між фактами (а також сутностями, суццями, субстанціями та іншими об'єктами метафізичного дослідження). Воно відрізняється від таких відношень, як причинність, супервентність, логічне студіювання та обчислюваність. Граундінг функціонує як метафізична операція, що пояснює, яким чином певний факт (сутність, суще, субстанція або інший об'єкт метафізичного дослідження) конститується іншими фактами (сутностями, суццями, субстанціями та іншими об'єктами метафізичного дослідження). Факти, які виступають підставами такого обґрунтування (*ground*), повинні включати визнання існування відповідного факту (сутності, суццою, субстанції або іншого об'єкта, що розглядається). Отже, коректний граундінг передбачає повний опис усіх фактів, що з метафізичною необхідністю визначають відповідний факт. Якщо ця умова не виконується, відповідне відношення доцільно характеризувати не як граундінг, а як квазіграундінг.

Ключові слова: граундінг, логіка, метафізика, факт, філософія науки.

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