Categories and Foundational Ontology: A Medieval Tutorial

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Abstract

Foundational ontologies, central constructs in ontological investigations and engineering alike, are based on ontological categories. Firstly proposed by Aristotle as the very ur-elements from which the whole of reality can be derived, they are not easy to identify, let alone partition and/or hierarchize; in particular, the question of their number poses serious challenges. The late medieval philosopher Dietrich of Freiberg wrote around 1286 a tutorial that can help us today with this exceedingly difficult task. In this paper, I discuss ontological categories and their importance for foundational ontologies from both the contemporary perspective and the original Aristotelian viewpoint, I provide the translation from the Latin into English of Dietrich's *De origine* II with an introductory elaboration, and I extract a foundational ontology–that is in fact a single-category one–from this text rooted in Dietrich's specification of types of subjecthood and his conception of intentionality as causal operation.

Key words: Ontological category; Foundational ontology; Aristotelian categories; Subjecthood; Intentionality & Causality; Dietrich of Freiberg

1 Introduction

A central topic in ontology is that of identifying the *basic*, or *foundational*, *ontological categories* (henceforth often just *categories*), or the ur-elements from which the whole of reality is believed to be composed: If one manages to carry out such an exclusive and exhaustive ur-segregation–i.e. *only*, and *all*, the basic categories are identified–then one has what is called a *foundational ontology*. Besides the intrinsic importance of such a construct, it also allows for interoperability among *domain*

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ontologies and *application ontologies* (see, e.g., Keet, 2011; Schneider, 2003; Schulz, 2018; Trojahn et al., 2021); these, as their coinage denotes, are very fine-grained ontological distinctions, so fine-grained indeed that they comprise particulars (for instance, an electrical-vehicle ontology can comprise particulars such as cars, bikes, rollers, etc. that can be individuated up to their brand names).

Although "foundational ontology" can be seen as synonymous with *"upper ontology"* or *"top-level ontology"* (e.g., Obrst, 2010), I shall consider a foundational ontology to be an upper/top-level ontology that is category-based. The task of designing, or engineering, a foundational ontology requires an adequate strategy both to identify the basic ontological categories and to establish the relations among them (e.g., Schneider, 2003; Westerhoff, 2005). In the effort to carry out this task, it is often the case that ontologists see themselves as trying to invent the wheel, an unnecessary effort if one takes into account the fact that since at least the Greek philosopher Parmenides scores of philosophers have busied themselves with it. To be sure, the possible bridges between what I *ad-hocly* distinguished as mainstream and formal ontology (Augusto, 2021) are far from obvious, or even desirable in some cases–for instance, when formal ontology is considered in the context of information-driven science (Smith, 2021)–, but they are likely to pay off in the end.

The philosopher who can be said to have set off the Western philosophical tradition of identifying the basic ontological categories is Aristotle: In his *Categories* (cf. Aristotle, sd/1963), he proposed that the whole of reality can be derived from only ten categories if we see nine of them as "happening to" (i.e. as *accidents* of), or even as "being told of," the most primordial of them, (the) *substance*. Despite their antiquity, Aristotle's categories remain relevant constructs in today's ontological investigations and ontology-engineering efforts (e.g., Arp et al., 2015; Mann, 2000; Tahko, 2012). But there is not a single consensual view on them, which makes them largely unusable by ontology-engineering projects. Dietrich of Freiberg, a late medieval philosopher, approached them from a novel viewpoint, that of causality and intentionality, and in doing so discussed them at length in what might today be seen as a tutorial. I here give the translation from the Latin into English of his *De origine* II (abbreviating *Tractatus de origine rerum praedicamentalium*, Part II, available in Dietrich von Freiberg, sd/1983), written at about 1286; before this translation I analyze the relevance of categories in general, and the Aristotelian categories in particular, for current ontology efforts, and after the translation I proceed to extract a foundational ontology from it.

2 Ontological Categories and Foundational Ontologies

2.1 Ontological Categories as Shared Conceptualizations

A fundamental component of human cognition as an integrated system or architecture is the *shared conceptualization* of the entities that compose reality and of the relations among them (e.g., Philips & Wilson, 2010; Tomasello & Rakoczy, 2003). Like many other components of cognition, this mental activity is largely, or mostly, unconscious or implicit (Augusto, 2010; 2013; 2016; 2018). As cognitive agents, humans typically

share *implicit* conceptual distinctions such as whole vs. part, animate vs. inanimate, physical vs. abstract, duration vs. location, essential vs. accessory, universal vs. particular, etc. For instance, a flat is seen as a part of a building and this in turn as a part of a city; animals and plants are conceived as animate organisms whereas rocks are seen as inanimate material formations; a sphere is abstract, a geometrical object, but a billiard ball is a physical object; a week vacation in a seaside resort comprises a duration and a location; every living human has a head, a part of which–the scalp–may, wholly or partly, or not at all, be covered with hair; Plato and Hypatia are two individual humans. Deficits in these implicit shared distinctions generate communication problems and cause thought processes in general to be disrupted (Augusto & Badie, forthcoming; Badie & Augusto, forthcoming). These distinctions, in turn, require coarser-grained shared concepts such as substance, property, state, process, quality, quantity, etc., to make sense, even if their meaning is not conscious or explicit. For example, anyone seeing a red rose is usually capable of, if asked to, separating the flower itself from its color and seeing it mentally as, say, a white rose, or even a black rose, though black roses do not occur as natural phenomena; and anyone is usually capable of distinguishing a book from the process of reading it. These shared conceptualizations can be seen as the implicit formative action of two main factors that I call the *Volksgeist* and the *Zeitgeist* to express respectively the collective action of a largely linguistically and geographically localized community at a specific point in, or period of, time. The interaction of these conceptualizations with language (*signs*) and the objects in the real world (*things*), whose relation–*reference*–is basically removed from the influence of these two collective forces for the reason that it is essentially conventional and arbitrary (cf. Saussure, 1916), is what is often called the semiotic triangle (Fig. 1).

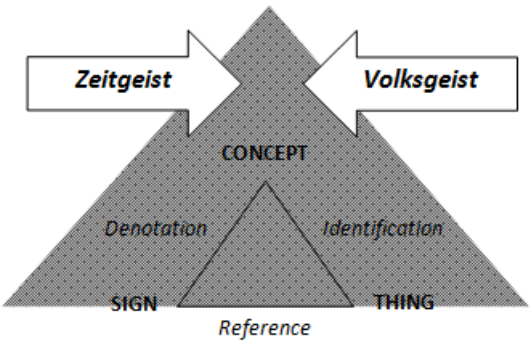

Figure 1: The semiotic triangle. (Source: Augusto, 2021.)

When these implicitly shared conceptualizations become *explicit* we speak of *ontology (doing)* and the resulting distinctions are now often called *ontological categories* (e.g., Cumpa & Tegtmeier, 2011; Galton & Mizoguchi, 2010; Westerhoff, 2005), even if for brevity sake the simple term *categories* is more often than not to be found. This explicitness is achieved by means of a sharing process that is to be distinguished from the one schematized in the semiotic triangle in the sense that the *Zeitgeist* and

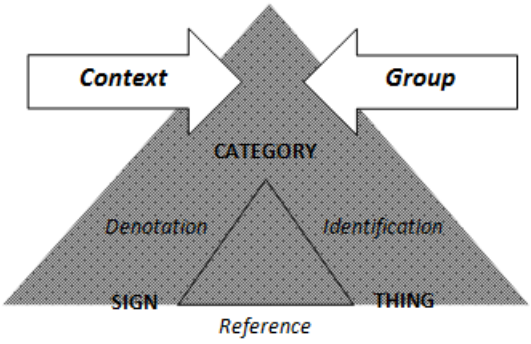

Figure 2: The semiotic triangle adapted for ontology doing.

the *Volksgeist* are strategically replaced by a specific context (e.g., medical science in the 21st century, or, more circumscribed, phenotypic abnormalities found in human disease) and a group of experts in that context (e.g., experts in human phenotypes). Importantly, in this adapted semiotic triangle the concepts give place to the (ontological) categories (Fig. 2). The context and the group's action can be extended so as to capture (partly) the reference relation, because often new signs are strategically created to designate (newly discovered or created) things in the world. However, this is not essentially the case in ontology doing, which is focused on the categories as a very specific type of concepts, namely the concepts from which the whole of the referred-to things can be derived.[1]

Given the importance mentioned above of categories for human shared cognition, their formalization is today central in many areas, from the natural sciences to the humanities and the arts. In effect, there are already formalizations of, or there are projects for formalizing, shared conceptualizations for such diverse domains as human psychology (e.g., Hay et al., 2017), human precision medicine (e.g., He et al., 2014; Köhler et al., 2021; see Haendel et al., 2018, for further examples), geography (e.g., Smith & Mark, 1998; 2001), agriculture (e.g., Arnaud et al., 2020), the performing arts (e.g., Estermann & Schneeberger, 2017), etc. By "formalization" it is meant here that the shared categories are expressed in a formal language, typically a first-order predicate language, so as to allow for automated deduction in computational applications; then, "ontologies" just are the formal structures that provide these computational capabilities (e.g., Borst, 1997; Studer et al., 1998). These formal structures can be so specialized as to try to capture such restricted domains as, say, urban information systems (Fonseca et al., 2000).

2.2 Ontological Categories and Foundational Ontologies

It is largely agreed that the ontological categories, taken in the sense of the most basic categories from which the whole of reality can be derived (e.g., Chisholm, 1992), (i)

[1]But see in Augusto (2021) the case of the quintessence(s), an ontological category that tries to capture an exceedingly vague but apparently useful ontological conceptualization in the natural sciences, namely in physics.

should be understood as the most general kinds of things and (ii) are organized in a non-overlapping finite hierarchy. This establishes *generality* and *well-foundedness* as two of the main requirements of a categorial ontological account that aims at being a foundational ontology (see, e.g., Tegtmeier, 2011; Westerhoff, 2005). In the current context of upper-ontology engineering, we are often confronted with projects that are seen as foundational ontologies when in fact they do not satisfy these conditions. For instance:

- GFO (General Formal Ontology) is claimed to be a foundational ontology, but (cf. Herre, 2010): Its multi-categorial approach envisages universals, concepts, and symbol structures and their interrelations, of which only universals, and perhaps concepts, can be said to be basic categories; it includes objects (3D entities) and processes (4D entities) and levels of reality, which might satisfy both conditions (i) and (ii), but is designed for applications, which throws doubt on this supposed satisfaction. All in all, in the summary presentation of this project (Herre, 2010, p. 298) nowhere are to be found ur-elements such as substances, properties, qualities, etc., or ur-distinctions such as part vs. whole, essential vs. accessory, etc. (see Introduction).

- More flagrantly, UFO-B is presented as a foundational ontology for events (Guizzardi et al., 2013), which appears to obliterate *tout court* condition (i).

- BORO (Business Objects Reference Ontology) is claimed to have a foundational ontology, namely based on ontological realism (e.g., de Cesare & Partridge, 2016), which envisages an ontological category, object, that branches into three top-level categories: elements, types, and tuples. In BORO, elements are objects whose identity is given by their spatiotemporal extension, but spacetime is missing as a category in the top-level; thus, types, which are collections of any of the three kinds of objects, and tuples, relationships between objects, also fail to be ontologically well-founded.

These examples show how difficult it is to get the right conception of foundational ontology, as based on ontological categories, in the field of ontology engineering. But the concept of ontological categories poses problems also in the context of current philosophical investigations. Here, they can be wholly or partly rejected: For instance, Bueno et al. (2015) argue that there are no categories of being whatsoever, proposing instead concepts in the attempt to provide a non-deflationary understanding of any–perhaps not basic–categorization. Paul (2017), in the quest for elegance and sparseness, conceives one basic ontological category–qualities, or intrinsic characters, synonymous with properties–as sufficient to support the ontological structure of the world; composition (of qualities) is then the only relation, an ontological view that he calls "mereological bundle theory" (see also Paul, 2012). Lowe (2005) recognizes two fundamental categorial distinctions (universal vs. particular and substantial vs. non-substantial) that, when combined, generate four fundamental ontological categories: objects (substantial particulars), modes (non-substantial particulars), kinds (substantial universals), and attributes (non-substantial universals).

2.3 The Aristotelian Categories

As seen above, it is not easy to identify the ontological categories that work as the ur-elements of a foundational ontology. Aristotle, to whom we owe the coinage of these ur-elements as *categories*, cannot be said to have gotten it right, either; not completely, at least. The status and worth of these constructs have since their first diffusion been highly controversial, as Kant put it summarily in his own elaboration on the categories:

> Aristotle's search for these fundamental concepts was an effort worthy of an acute man. But since he had no principle, he rounded them up as he stumbled on them, and first got up a list of ten of them, which he called categories (predicaments). Subsequently he believed that he had found five more of them, which he added under the name of post-predicaments. But his table still had holes. (*Critique of Pure Reason*, A 81/ B 107; Kant, 1781/1998)

There is indeed a plethora of open problems posed by Aristotle's original text on the categories, starting by their disputed authorship, which have to do with many and diverse problematics. Some of these open questions are, for instance:

- Are these linguistic or ontological categories (e.g., Boys-Stones, 2017, Ch. 15; Stough, 1972)? In the original Greek text (Aristotle, sd/1831), Aristotle introduces the ten categories via an ubiquitous use of the verbs *legesthai*, to be said, to be spoken of, and *katêgoresthai*, to be predicated (of something).

- How many categories are there really? For instance, Aristotle's can be seen as a two-category ontology, a ur-distinction between substances and accidents (Paul, 2017). But concerning the latter, Aristotle's treatment at length of quantity, quality, and relation contrasts with the all too summary one given to the remaining six accidents, which are not the object of any finer granulation (see Fig. 4 below).

- Is Aristotle's really a foundational ontology, i.e. is his list of categories exhaustive in the sense that one can derive the whole of reality from them, and are they really basic? For instance, given the issue immediately above, one may argue that Aristotle's only truly basic categories are substance, quantity, quality, and relation.

Despite these and (many) other problems, Aristotle's categories were central in many periods of Western philosophy, in particular in the long period of what is called medieval philosophy (e.g., Thom, 2011), during which they were known as the *praedicamenta* in an obvious allusion to *praedicari* (*to be predicated* or *said of*, in English), and they might in fact become center-stage again in contemporary ontological investigations (e.g., Tahko, 2012). I briefly discuss here the ten categories, the *praedicamenta* proper, and even more briefly the pre-predicaments, leaving the post-predicaments entirely out of this summary discussion.[2]

[2]See, e.g., Studtmann (2012) for a more comprehensive discussion of Aristotle's categories.

In Aristotle's *Categories* (1b25), we can read:[3]

> Of the things that are spoken of without any combination, each one signifies a substance, a quantity, a quality, a relation, a place, a time, a position, a state, an action, or a passion.

By "things that are spoken of without any combination" Aristotle means isolated nouns (e.g., "man") and verbs (e.g., "runs"), by opposition to which we have the grammatical structure noun + verb (e.g., "man runs"). If we consider the former, that I shall abbreviate *ad-hocly* as "α things," then we have what appears to be an exclusive disjunction corresponding to a ur-partition of the things that compose reality. (See Figure 3.)

Importantly, before this ur-segregation Aristotle had summarily elaborated on the difference between *being said of a subject* and *being in a subject*, proposing a fourfold ur-distinction of entities–known as *the ontological square*–into those that (a) are said of a subject but are not in any subject, (b) are in a subject but are not said of any subject, (c) are both in a subject and said of a subject, and (d) are neither in a subject nor said of a subject (*Categories*, 1a20). For instance, "man" is an a-entity, as it is said of a subject (the individual man) but is not in any subject, whereas the individual white is in, but not said of, a subject (a b-entity); "knowledge" is a c-entity, being both in a subject (the soul) and said of a subject (e.g., knowledge of grammar); the individual man is a d-entity, neither in nor said of any subject. Aristotle briefly explains that by "in a subject" he means *not* parthood but ontological dependency, i.e. what is in a subject "cannot exist separately from what it is in" (*ibid.*).

The question arises: What is *in a subject*–in the sense of being intrinsic to it–that makes it so that other entities are in it and cannot exist separately from it? This, which I shall call *subjecthood*, is a metaphysical question that is not answered in the *Categories*; in this text, all we are told is that *substance* is that which is neither said of a subject nor in a subject (cf. *Categories*, 2a11); so, substance is a d-entity. It can actually be also distinguished into first and second substances, as shown in Figure 4.

To retain from this distinction is that the second substances are a-entities.[4] Aristotle then goes on to distinguish this from the case of the things that are in a subject, *but* in which in most cases neither the name nor the definition is predicated of the subject; for example "white," whose definition cannot be predicated of a body (*Categories*, 2a19). Finally, Aristotle tells us that "all other things are either said of the primary substances as subjects or in them as subjects" (*ibid.*, 2a34), so this gives us a notion of subjecthood in the *Categories*, albeit an all too vague one.[5] These "all other things," or c-entities, are what ended up being called *accidents* in the sense that they "happen to" the substance. Briefly, what we end up with at the end of Chapter 9 of *Categories*, and by "updating" this with the distinction made by Aristotle between substance and

[3]All translations of passages of the *Categories* from the Greek (Aristotle, sd/1831) into English are mine. Just as in my translation of the *De origine*, my objective is a compromise between classical and philosophical scholarship and contemporary work in ontology, which includes current ontology engineering for computational ends. See Ackrill's for a standard translation in Aristotle (sd/1963). It must be remarked that the *Categories* is not an exclusive Aristotelian source for the categories, with his *Topics* also being relevant. This said, I shall focus solely on the *Categories*. Additionally, the medieval philosophers used Latin translations of the original Greek text, and I use the Latin terms whenever this practice is relevant.

[4]Omitting many details, such as Aristotle's discussion of the *genera*, *species*, and *differentiae*.

[5]See Shatalov (2020) for a discussion of subjecthood and substancehood in Aristotle.

α Things
- **Substance**
  - Man
  - Horse
  - ⋮
- **Quantity**
  - Four-foot
  - Five-foot
  - ⋮
- **Quality**
  - White
  - Grammatical
  - ⋮
- **Relation**
  - Double
  - Half
  - Larger
  - ⋮
- **Place**
  - In the Lyceum
  - In the market-place
  - ⋮
- **Time**
  - Yesterday
  - Last year
  - ⋮
- **Position**
  - Lying
  - Sitting
  - ⋮
- **State**
  - With shoes on
  - Armored
  - ⋮
- **Action**
  - To cut
  - To burn
  - ⋮
- **Passion**
  - To be cut
  - To be burnt
  - ⋮

Figure 3: Initial ur-partition of the Aristotelian categories.

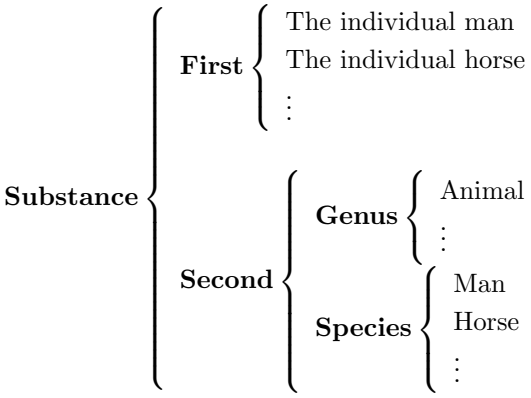

Figure 4: Aristotle's two substances.

accident in his *Metaphysics* VII, 1, 1028a10-31–the latter does not subsist by itself and hence cannot be separated from the substance; it *happens* (*symbaínei*, in Greek; *accidet*, in Latin)[6] to the substance–is the ontological ur-partition in Figure 5 that can be seen as his foundational ontology.[7]

If one compares Figure 5–which one may call an ontological diagram to distinguish this from the usual graph-based representations–with upper ontologies such as BFO, DOLCE, SUMO, OCHRE, etc., after restructuring them in this format,[8] one will certainly notice the explicit or implicit presence of (fragments of) Aristotle's foundational ontology. However, this is more often than not–there are exceptions (e.g., Arp et al., 2015)–not acknowledged in the standard literature on these ontologies, in which such crucial aspects as their respective ontological commitments are often discussed at length.

[6]Reason why the Greek term for the Latin *accidens* is *symbebekós*.

[7]Note the distinction between time and place taken as quantities (*khrónos* and *tópos*, respectively, in Greek) and taken as accidents, in which case they are referred to as *at a certain moment*, or just as *when* (*poté*, in Greek) and *in a certain place*, or just *where* (*poú*). As for the qualities, Aristotle concedes that his list might not be complete. Additionally, while some qualities admit of relations such as more or less (for instance, a man might be called healthier–a condition–than another), qualities and relations are indeed partition classes if taken in the strictest sense of distinct categories. Beginning in *Categories*, 11a20, Aristotle elaborates on this sub-partition, but concedes that these two classes may overlap. This goes against condition (ii) above, so that Aristotle's might not be considered a foundational ontology in today's perspective. In Figure 5, I reduce Aristotle's relations to relatives and correlatives; Table 1 in Section 4.2.4 below provides a more comprehensive identification of these entities, namely as seen by Dietrich of Freiberg.

[8]I do this for some of these upper ontologies in Augusto (2021), which also provides the relevant literature.

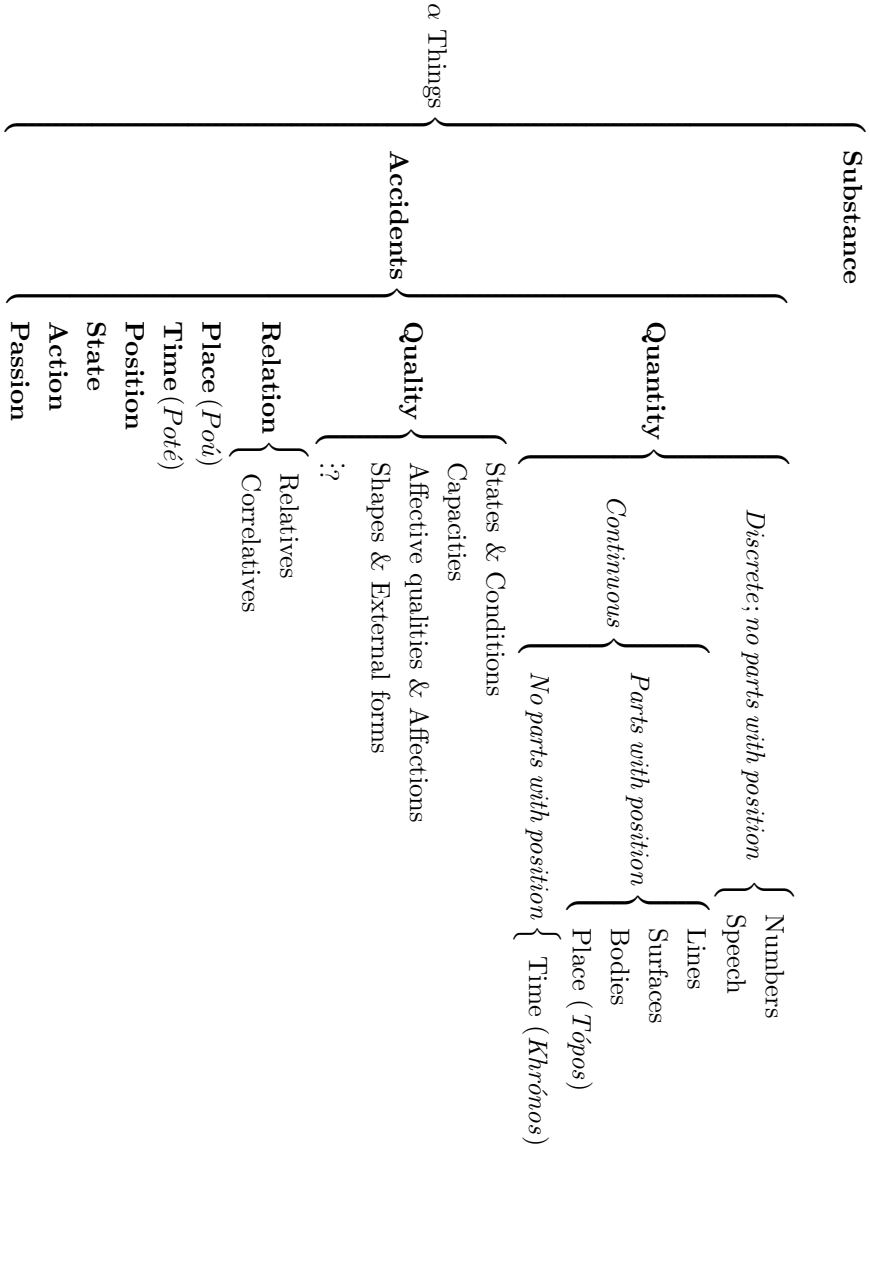

Figure 5: Aristotle's foundational ontology based on *Categories*, 1-9.

3 A Tutorial on Ontological Categories

3.1 Ontological Categories and Their Causes: A First Ur-Partition

In part I of his *Treatise on the origin of the categories* (*Tractatus de origine rerum praedicamentalium*), abbreviated as *De origine* and possibly written around 1286, a date proposed in Flasch (2007), the late medieval German philosopher Dietrich of Freiberg carried out a ur-segregation of entities that constitutes the top level of a causality-based upper ontology that is in fact a foundational ontology, i.e. it considers mostly the Aristotelian categories but it also introduces a new category, which is said to have the manner of accidents, to wit, the properties. This consideration falls on entities with respect to their causal origin, that which makes it so that an entity depends directly on its cause to *begin* being as such. It is important here to paste his definition of *entity*: "that which is in itself, and which is complete in terms of the act that belongs to it according to its own genus; ... also ... that which has the nature and the character of an entity in its essence" (*De origine* I, 1; Augusto, 2021).[9] This ur-category, *entity* or *being* (*ens*, in Latin), is ur-partitioned into *substance* and *accident*, the former defined as that which is a complete entity per se both formally and in terms of its final cause, "not because it is something of some thing, or from some thing, in terms of the form" (*ibid.*, 23), and the latter contrasted with this as that which is in, or belongs to, a substance (cf. *ibid.*, 25). This is by and large Aristotle's own ur-segregation of entities (cf. Section 2.3 above). However, Dietrich sees the entities other than the substance as substances, too, by analogy (*ibid.*, 25).

In order to further partition this ur-segregation Dietrich conceives a tripartition of causes into those that are *intrinsic* to an entity, those that are *extrinsic* to it, and those that are *both intrinsic and extrinsic* to it. The first, corresponding to the Aristotelian formal and material causes, are for him *principles*; the second, which correspond to the Aristotelian final and efficient causes, are *causes* proper; he speaks of the third as *extrinsic principles*. These are then the three ways in which an entity depends directly on something as on a causal origin. Because his terminology is often equivocal, I call these causal origins **IN-causes**, **OUT-causes**, and **OUTIN-causes**, respectively.

The OUTIN-causes are largely novel in this causal tripartition; even if Averroes speaks of causes that are both intrinsic and extrinsic (cf. *De origine* I, 4), this appears not to be what Dietrich conceives as OUTIN-causes. In *De origine* I, 25, Dietrich writes about these OUTIN-causes:

> This way is that in which something is a principle [an **IN-cause**] for another [**B**] in such a way that by virtue of this very principle existing outside the essence [an **OUT-cause**] of that whose [**B**'s] principle it is, by virtue of that same principle does it [**B**], whose principle it is, nevertheless subsist formally, inasmuch as it [**B**] takes from that same existing principle the notion of its [**B**'s] entitihood or quiddity from our conception of it.[10]

[9] Augusto (2021) provides the translation of *De origine* I from the Latin into English.

[10] I shall *ad-hocly* translate *entitas* as *entitihood*, an usual translation, for the sake of consistency with respect to *substancehood* and *subjecthood*, two concepts that also play a central role in my analysis of *De origine* II.

$$\mathscr{P}\,(Categories)_{\text{Dietrich}} = \underbrace{\{\text{substance}\} \cup \left\{ \begin{array}{c} \text{quantity} \\ \text{quality} \end{array} \right\}}_{\substack{\textbf{IN} - \textbf{Causes} \\ \textbf{OUT} - \textbf{Causes}}} \cup \underbrace{\left\{ \begin{array}{c} \text{relation} \\ \text{place} \\ \text{time} \\ \text{position} \\ \text{state} \\ \text{action} \\ \text{passion} \end{array} \right\}}_{\textbf{OUTIN} - \textbf{Causes}}$$

Figure 6: Dietrich's causal ur-partition of the Aristotelian categories in *De origine* I.

The **B**s are mine, and are added as "annotations" to reduce the high complexity of this passage that is central in the first part of the *De origine*. They shall be used to denote the entities that belong to substances, for which I shall use **A**s. Importantly, in the cited passage the **B**-entity is not destitute of its own essence, even if its causal origin is a principle that is extrinsic to it (in my coinage, an OUTIN-cause). We can therefore conclude that **B** "is in itself, and ... is complete in terms of the act that belongs to it according to its own genus" (*De origine* I, 1), which is Dietrich's definition of entity. These causes then act upon **B** not in the sense that they cause **B** *ab nihilo*, from nothingness, but in the sense that they provide it with *formal subsistence*, which according to Dietrich is the very first way by means of which an entity differs *formally* from nothingness or non-being (cf. *ibid.*, 25). But Dietrich's originality does not end here; he applies this tripartition of causes to the well-known list of the ten Aristotelian categories to come up with the ur-partition in Figure 6.[11]

Later on in part I of the *De origine*, Dietrich makes a correspondence between the three kinds of causes and a ur-segregation of causes into natural acts and mental acts (see Fig. 7)

$$\text{Cause} \left\{ \begin{array}{l} \text{Natural Act} \left\{ \begin{array}{l} \text{OUT-Cause} \left\{ \begin{array}{l} \text{Efficient} \\ \text{Final} \end{array} \right. \\ \text{IN-Cause} \left\{ \begin{array}{l} \text{Form} \\ \text{Matter} \end{array} \right. \end{array} \right. \\ \\ \text{Mental Act} \left\{ \text{OUTIN-Cause} \left\{ \text{Formal subsistence} \right. \right. \end{array} \right.$$

Figure 7: Dietrich's ur-segregation of causes. (Source: Augusto, 2021.)

[11]This originality needs to be mitigated: Avicenna had already by and large proposed the tripartition in Figure 6, which was taken up by Albertus Magnus. In particular, *reductions* among categories, an important aspect of Dietrich's foundational ontology (see below), were already common: For instance, William Ockham actually considered only substance and quality, the remaining eight categories being reducible to these, and John Buridan reduced all the categories to substance, quantity, and quality.

To this ur-segregation, he further applies the distinction between first and second intentions, central in late medieval philosophy, and after what can be considered a rather intricate elaboration the top level of an upper ontology can be extracted as shown in Figure 8. I refer the reader to Augusto (2021) for the details of this extraction from the viewpoint of formal ontology and as an attempt to bridge this and philosophical–or mainstream–ontology. In Augusto (2021), this top level is left open, because of both difficulties posed by the analysis of the original text of the *De origine* I, and the fact that Dietrich announces he has yet to address the topic of the entities caused by a mental act and how they are to be distinguished from mere things of second intention, being actually things of first intention, a distinction that is addressed in Section 4.1 below.

This summary of *De origine* I provides the main elements to facilitate the reading of *De origine* II, whose translation from the Latin into English now follows.[12]

3.2 *Treatise on the Origin of the Categories*: Translation of Part 2

On the origin of those entities that are in substances and generally on all the genera other than the substance

(1) But these entities in this third manner are divided into four different kinds in degree and order, according to what the degree and the order is in the manner in which they formally take their entitihood from something else.[13] Given that common to all of them is the fact that they all belong to an entity, this can be in four ways.[14]

(2) In one way such that something belongs to an entity according to the formal and definitive notion of that to which it belongs, namely in terms of its quiddity.[15]

[12]Just as in the translation of Part I in Augusto (2021), I give the references in Dietrich's text of ancient and medieval texts exactly as they are given by L. Sturlese in Dietrich of Freiberg (sd/1983). I refer the reader to this text for the complete bibliographical references. Those added by me are given in the References.

[13]Dietrich announces that he is going to elaborate on the entities that take their entitihood from another entity. Generally taken, they are "those entities that are in substances." It is important now to disambiguate between what in part 1 of *De origine* Dietrich meant by the third kind of entities–they all have their causal origin in OUTIN-causes–and this more encompassing meaning, which can be partitioned into four kinds in degree and order. (See Section 4.2.1 for an analysis of this partition in degree and order.) The key passage here is "the manner in which they formally take their entitihood from something else" and within this the keyword is "formally." Dietrich is in fact expanding the notion of formal subsistence to *all* the entities that belong to other entities (both properties and accidents proper; see Fig. 8).

[14]This is a central notion in Dietrich's analysis of these entities: They all belong to an **A**-entity, being thus classable as **B**-entities. Dietrich will now specify the notion of *belonging* at play here: The **B**-entities are all in a substance–an **A**-entity–in the sense that they are attributed to it as a subject (cf. (7) below). Importantly, this notion of *subjecthood* is quite diverse and Dietrich specifies four ways of belonging based on it that I shall see as *Types* 1 through 4. See Section 4.2 below for a discussion of this typology and its import for Dietrich's foundational ontology.

[15]**Type 1** of entities that belong to other entities. This type is that of those **B**-entities that belong to an **A**-entity according to the latter's own quiddity, a core ontological notion (*quiditas*, in Latin) expressing what–*quid*–an entity is, its complete definition: If one knows the quiddity of an entity, then one knows what this entity is. This accounts for my choosing "definitive" instead of "defining": The former conveys the meaning of both *definition* and *completeness*, as the quiddity of an entity

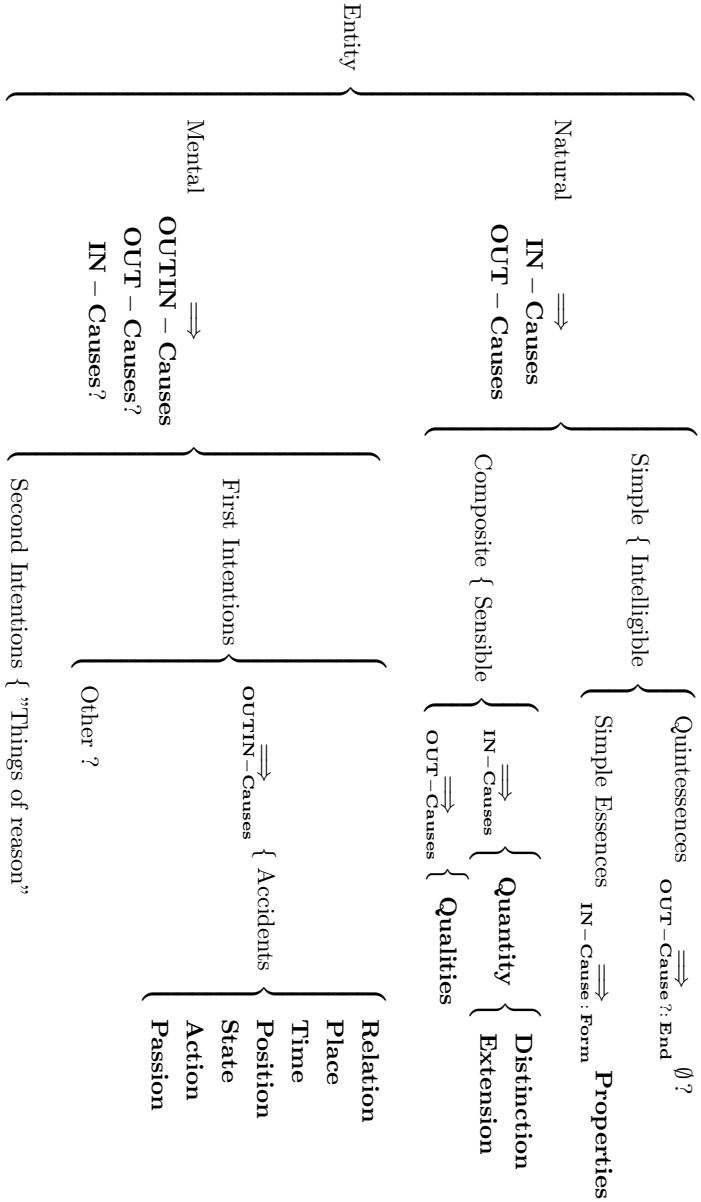

Figure 8: Dietrich's causality-based upper ontology: The top level. (Source: Augusto, 2021.)

(3) In a second way such that it is something of an entity according to that very same entity as a subject.[16]

(4) In a third way according to the very same subject-entity and according to something else that is in that same subject.[17]

(5) In a fourth way according to these entities just mentioned and in terms of something else that is in another subject.[18]

(6) The sufficiency is evident: An entity that depends on another according to this manner does not take its entitihood formally from it except in one of these four ways. Examples of particular cases will be given in the appropriate places.[19]

(7) The entities of this third kind are those that are taken in terms of an analogy by means of which they are attributed to some subject. Which attribution belongs to them in themselves and in terms of their essence, hence by virtue of the essence and not according to the sole designation does the notion of an entity in this way belong to the attributes. Not, however, as those that are said by attribution to something as to an end, as urine, diet, and physical exercise are said healthy with respect to the health of the animal, which is the end, or by attribution to something efficient, as a diet or a herb is said medicinal by attribution to the medical or to the art of medicine, which properly is the efficient in this kind: This is thus accidental to the attributes, whence they are indeed not by essence that which is predicated of them according to this attribution. And these three manners of the analogy are distinguished in the commentary on the beginning of Book IV of the *Metaphysics*.[20]

(8) Therefore, because they are certain manners of an entity in terms of its quiddity, that is, of the definitive notion stating the cause or the reason why (*propter quid*) of such entities, those that belong to the first kind have the nature and the character of properties, and they are not accidents proper except in the broad sense of the term, inasmuch as the

does not change. Dietrich does not see this first type as having to do directly with the notion of subjecthood with respect to **A**, reason why I shall call this **Subjecthood^{-}.**

[16]**Type 2**: The distinguishing aspect here is that these **B**-entities belong to an **A**-entity inasmuch as this acts as a subject *for them*. It is crucial here to bear in mind that the Latin word *subiectum*, from which the English noun *subject* originates, is a translation of the Greek present participle *hypokeímenon*, literally translatable as "(is) lying under." This Type 2 might be said to rest upon **Subjecthood^{0}**, Dietrich's most basic notion of subjecthood.

[17]**Type 3:** These **B**-entities are those that are in an **A**-entity in a double sense, according both to **A** as subject and to something else (**C**) that is to be found in **A**. I call this **Subjecthood^{+}.**

[18]**Type 4:** These are those **B**-entities that are in an **A**-entity in virtue of something else (an entity **D**) that is in another subject (**C**). I propose we call this **Subjecthood^{++}**.

[19]So, this fourfold typology–which corresponds in fact to an ontological ur-partition–is exhaustive in the sense that it covers all the **B**-entities, and apparently also exclusive, as it implicates only these entities.

[20]Averroes, *In Aristotelis Met.* IV, comm. 2, Venetiis 1562, 65rF-vI. Dietrich clarifies here the *ontological* (vs. merely linguistic or logical) sense in which these entities of the third kind are to be considered attributes of an **A**-entity "in themselves and in terms of their essence," and not accidentally as OUT-causes. Importantly, this third kind of entities comprises more entities now than in part 1 of *De origine*, in which the third kind was constituted by entities caused by an OUTIN-cause (see Fig. 6); now the entities of the third kind are all those entities that belong to another entity, called here **B**-entities for the sake of clarity, regardless in principle of their causal origins. This said, it will be shown that in fact they all have their causal origin in an OUTIN-cause.

character of a subject is attributed to that whose properties they are, and to the formal notion, which is the definitive notion, the character of cause is attributed. Thus, according to this, these are understood as having the manner of accidents, which are in a subject thanks to a cause.[21]

(9) These entities, however, are of two kinds. Some are in a thing in terms of its essence in itself and absolutely, and all these entail a deprivation in that thing; of them all the first kinds are the one and the many. I mean to say that such entities are really privative.[22] Indeed, an entity cannot by virtue of its essence be in an absolute way to itself the cause of some positive[23] information.[24] The relation of an entity to such a manner is like that of a subject to a form, under whose act a subject cannot make itself. Nonetheless, an entity can, by virtue of its essence, be the cause of the removal of extraneous determinations, which is but to be the cause of some privative manners in relation to itself. Although such entities really entail a deprivation, sometimes reason dresses them with certain positive manners so that they can be thought of as being certain manners of an entity in terms of properties; and this happens when such entities are defined from the subject genus;[25] by means of which they are already something of an entity, i.e., of a subject genus according to its formal notion. And thus they take their quiddity and their entitihood formally from the subject genus, as for example even and odd from the number, equal and unequal from one in quantity, similar and dissimilar from one in quality, and similarly for the others.[26]

(10) But there are other entities that are in a thing in terms of its essence but in relation to some other thing, and these can entail something positively in their subject in the manner of a property. The reason for this is that they are not taken from the notion of the thing that is the subject in itself and absolutely, as the above mentioned, but are conceived in a thing from a relation to some positive entity, as are the cause and the caused, the active potency and the passive potency, and certain relative determinations and the like, if such are things which such manners and

[21] Type-1 entities, or **properties**. They are not accidents proper, though they can be understood as having the manner of accidents, inasmuch as they can be attributed to a subject **A** in terms of its quiddity taken as a cause, namely an IN-cause. This very broad notion of accident entails, in turn, a minimal notion of subjecthood, here referred to as **Subjecthood**$^{-}$, where the superscript "–" denotes this minimality. The rationale seems to be here that the subject in this type is ultimately that without which a property would not subsist (formally).

[22] Or *depriving*, a more common adjective. But *privative* is more directly opposed to *positive*, the latter meaning that something is posited.

[23] The opposite of privative.

[24] Read "*in*-form-*ation*," the action of *in*serting a form.

[25] *Genus subiectum*, to be distinguished from the *genus praedicabile*, or logical genus. This distinction was particularly important for the definition and the autonomy of the diverse sciences, and it actually originates in Aristotle. Dietrich, however, employs it here in a strictly ontological setting, in which "subject genus" can be rephrased as "the genus (of the thing) that is considered as subject."

[26] This is **Type 1.1**: These entities are in a subject according to its formal notion, from which they take their own quiddity; more precisely, they take their quiddity and their entitihood from the subject genus. (See footnote 25 for the meaning of this concept.) For example, even and odd belong to a number according to its formal notion. Their absence may cause a deprivation in an entity: A number without the property of being even or odd lacks–is deprived of–this essential feature of its. Type-1.1 are thus *properties proper*.

similar ones might befit by essence. These manners take the notion of their entitihood from the formal notion of the subject genus, but in relation to some other thing, and from this they have the character of properties, just like the above mentioned. And since in this manner they are something belonging to an entity, this is their essence, which according to the said manner they formally take from some other thing by virtue of the notion that nevertheless determines and makes this, which notion according to this manner determines and makes them be proper determinations of entities.[27] They are not from a natural act.[28]

(11) Which is firstly evident from the end, because, as it was said, those entities that are from a natural act are the principle of some natural operation. But these are not like that.[29]

(12) It is also evident from the nature of the thing from whose formal notion they are taken. Although a thing can, by its essence, be the principle and the cause of the removal from itself of extraneous determinations, it cannot actualize itself according to some naturally real form, unless such a thing be distinct in its parts in such a way, so as to have in itself the principle of its motion and to be moved by itself, as it is the case with the animated entities. But we do not talk here of such determinations that in the animated entities are acquired from themselves: Indeed, all such forms, as well as other natural forms, respect some real transmutation.[30]

(13) It is also evident in the third place from the proper character and nature of these entities, because, as it was said, they are actually but either a deprivation, which formally is a non-entity, or, if they establish something positive in relation to some other thing, then they are in such a way that, whether that thing exists or not, really or mentally, they in-exist or do not in-exist without any natural transmutation, which is not possible in forms that entail some natural thing.[31]

(14) Therefore, one ought to accept their principle and cause in the

[27]**Type 1.2**: These **B**-entities are in an **A**-entity according to its essence, but in relation to something else. Examples are the cause in relation to the caused and the active potency in relation to the passive potency. These entities, whose presence in a subject entails something positively–i.e. that is posited–in it, are said to have the manner of properties, reason why I shall call them *quasi-properties*. "Relation" is a key word in this passage, as below in this text Dietrich will reduce some of the relations to these properties.

[28]Dietrich means not only the Type-1.2 entities, but also the Type-1.1 ones, as it will be evident below. This is a wholly new perspective, as in *De origine* I the properties appeared to be attributed to IN-causes, namely the formal cause alone, and the IN-causes seemed to be associated with a natural act (see Fig. 8).

[29]First reason why the (quasi-)properties are not caused by a natural act: They are not the principle (an IN-cause?) of a natural operation.

[30]Second reason why the (quasi-)properties are not caused by a natural act: Now the onus falls on the nature of the things to which the (quasi-)properties belong, as it is the case that they cannot actualize themselves according to some naturally real form. There is indeed the case when a thing, namely an animated entity, has in itself the IN-cause for its ability to move, but this is an instance of a real transmutation, something that has nothing to do with quasi-properties, Dietrich appears to argue.

[31]Third reason why the (quasi-)properties are not caused by a natural act: This seems to be a rehash of the second reason, with the additional information that when existing in a thing as a positive determination they do not entail any natural transmutation; indeed, this thing may be purely mental, or imaginary. (If they are a deprivation in a thing, then they simply are non-entities.)

intellect as effective,[32] in the substance or the essence of a thing as subjective,[33] and in the notion of a thing as originating and informative.[34] In fact, the subject or whatever form in a subject cannot be the efficient cause of some thing according to nature except with respect to another subject. Concerning the notion of the cause and of the caused, just as they differ in the concept, so, too, in the subject they are distinct. And because nature does not distinguish between the thing-subject and the notion of the thing-subject, the principle of this distinction being the intellect–or rather the intellect is the constituent of the notion of a thing as such, as it will be shown below–, those entities that are brought out from the formal notion of a thing are therefore produced by the intellect.[35]

(15) Therefore, firstly and originally our agent intellect thanks to its universal and exceedingly formal faculty, and next the possible intellect actualized with respect to the apprehension of a thing as regards its quiddity and formal notion, in this way, I say, actualized according to a determinate form from the quiddity of a thing, brings out such entities and actualizes the entitihood in them, so that this is the first formal notion of their entitihood, because they are entities according to the aforementioned manner.[36] According to this, a natural entity belongs thanks to the intellect to their quiddity and falls in their definition, and this is the first root and origin of all those entities that are by an act of the intellect as far as what they are is concerned and that are things of first intention, and to which origin it is necessary to reduce the entitihood of all such entities as being the first principle of such a kind of entities that is from an operation of the intellect.[37]

(16) Even though such entities according to the aforementioned manner acquire a certain entitihood, nevertheless they still do not completely

[32]That produces an effect.

[33]That acts as a subject.

[34]The notion of the thing that acts as a subject is the causal origin of these **B**-entities by providing them with form, i.e. by *in-forming* them.

[35]Dietrich now talks of three causal origins: efficient cause (an OUT-cause), subjecthood (an OUTIN-cause; see Section 4.2.1), and formal cause (an IN-cause). The two last ones are to be found in the substance to which the (quasi-)properties belong, but they are so thanks to the intellect, as nature cannot distinguish the thing-subject and the notion of the thing-subject; the first one is more directly attributed to the human intellect, which acts as the efficient cause of these entities. So, we do indeed have here what can be called OUTIN-causes for these **B**-entities, and the role of the human mind as a causal origin in relation to them is now made explicit: The intellect not only acts as an efficient cause, but it is also related to the formal cause, as it is the constituent of a thing's notion, as well as to the subjecthood of a thing, because nature does not distinguish between the thing-subject (i.e. a thing that acts as a subject) and its notion as such. Summing up, Dietrich appears to argue that (quasi-)properties have their causal origin entirely in the human mind, but this entails that Subjecthood$^-$ and the corresponding **A**-entity considered under this concept also have their causal origin in the intellect.

[36]See Section 4.1.2 below for the contextualization of this distinction between the agent and possible intellects and its meaning for Dietrich.

[37]See Figure 10 below for the relation between first intentions and natural entities in late medieval ontology. Dietrich not only claims that the (quasi-)properties have their causal origin in the human mind, but also sees them as things of first intention, which have a superior ontological status with relation to the things of second intention. This is what in Augusto (2021) I call Dietrich's "second bomb."

have the character of an entity nor are they in any of the ten genera but as properties of the same genera. However, they completely have the character of an entity inasmuch as it suffices to constitute some genus of category if they, from whose formal notion these are taken, are natural determinations of some entity, as shall be discussed below.[38]

(17) Thus, these are the entities of the first kind of those that according to the third manner proposed in the beginning take their entitihood formally from another entity and universally belong to entities in themselves and are proper affections, and such entities are found in general in all kinds of entities, of substances as much as of accidents.[39] And because of this, it is the very first kind.

(18) But the second kind of entities that takes the notion of its entitihood formally from another entity is that which belongs to an entity solely in terms of a subject as subject. And thus among the nine genera of accidents, which this kind firstly and essentially befits, are the real quantities and qualities, which entail some natural thing with respect to a substance.[40]

(19) But something can have the character of a subject in two ways. In one way, inasmuch as something is subjected to something else formally inhering in itself, so that out of it some single entity becomes as from a subject and a form. In another way, or in another notion according to which some entity, in subsisting, sustains some nature or determination adhering to itself.[41]

(20) I therefore say that these entities of this second kind take their entitihood inasmuch as entities formally from another entity in terms of subject, not in the manner of the substanding or according to that notion that substands some form, either substantial or accidental–in fact, this manner is that of some existing entity in potency and having the character of matter, hence such entities, which according to this manner only inexist, would not take the notion of their entitihood formally from it, but only according to their being reduced to their causes, that is, inasmuch as

[38]The (quasi-)properties, taken as a product of a mental act, have an "incomplete" entitihood and can be considered as merely properties of the ten categories, not constituting thus a distinct category; but they do indeed constitute a genus of category if they are taken from the formal notion of an entity that is a natural determination, namely quality or quantity. It appears that in this case the quasi-properties are properties simpliciter.

[39]Summing up: The (quasi-)properties, which have their causal origin in the human mind and are things of first intention, belong not only to substances, but also to the accidents.

[40]Dietrich will now address the Type-2 **B-**entities, to recall, those that belong to an entity in terms of a subject as subject, what I call Subjecthood^0. We are told straightaway that these are among the nine genera of accidents, being first and foremost the quantity and the quality, the two accidents that entail some natural thing with respect to a substance. In *Origine* I, Dietrich appeared to attribute to quantity an IN-cause and an OUT-cause to the qualities (see Fig. 6); in any case, these two categories have natural causes, what Dietrich expresses also by means of the adjective "real."

[41]An entity can act as a subject in two ways: As being subjected to something else that *inheres* to it, or as sustaining something else that *adheres* to it. In the first case, there is a single entity composed as from a subject and a form; in the second, both the subject and that which adheres to it are separated/separable. We can see these as **Types 2.1** and **2.2** of Subjecthood^0, respectively, and I shall call the corresponding **B**-entities *inherents* and *adherents*. As the qualities and the quantities are of Type 2.2, we may tentatively conclude that the remaining seven Aristotelian accidents fall in Type 2.1. (See Figure 13 below.)

an agent cause makes such entities in a subject in relation to some end–, but I say that these entities belong to an entity in terms of subject in the manner of the subsisting in itself and essentially; however, they become and are in it as in a manner of adherence, as its natural determinations, but outside its nature, determining it by adhering.[42] What makes it so that, given that such an entity is an entity simpliciter in terms of its absolute subsistence, and thus in an exceedingly formal way, those entities that are in the aforementioned way take the notion of their entitihood from it and are formally entities, because they are determinations of such an entity. And this is their essence.[43]

(21) And because by the term determination or adherence something of accidentality appears to be entailed, one must take this accidentality on the side of the subject to which it happens to be thus determined; but, on the other hand, to be determinations of such a subject is the essence of such entities, according to which their analogy to a substance in terms of the notion of entity is considered, and this is common to all the nine genera, as is shown in Book IV of the *Metaphysics*.[44]

(22) What properly characterizes these entities of this second kind is that, in respect to what they are, they are not brought out from the definitive notion of a subject, as the aforementioned, but have their cause in nature, thanks to which they happen in a subject in relation to some end.[45]

(23) They only take the character of an entity inasmuch as entities from a subject according to the aforementioned manner. Hence, this certain order is considered: First an entity having a cause is constituted in being by its causes; next, its formal entitihood is considered in it in terms of the quiddity and of the form; then, from this formal notion in it its natural property, inasmuch as it is an entity, is considered.[46]

[42]From this paragraph on, Dietrich largely restricts the **B**-entities of Type 2–what he refers to as "the second kind"–to the adherents (Type 2.2). He will retake the inherents only as **B**-entities of Type 4, but will then reduce these to Type 3, which is in turn reducible to Types 2 and 1. See Section 4.2.5 below for the final result of this complex ontological reductionism.

[43]This whole paragraph makes for another knotty passage, in which, however, the key words are *determination* and *adherence*: By being (natural) determinations of–which they are by adhering to–an entity that is per se in terms of its absolute subsistence (and hence subsisting formally per se) these two accidents, the quantity and the qualities, so to say "participate" of this superior ontological status. This is Type 2.2. Importantly, here subjecthood is not to be understood in the sense of that which substands, or acts as a substratum or support, to an accident (Type 2.1); this latter type of subjecthood can only be found in material things and in their being in potency, and it requires both OUT-causes, the final and efficient causes.

[44]Aristotle, *Met.* IV, 2, 1003b5-6. Interestingly, the accidentality of the quantity and the quality does not fall into the essence or definition of these accidents, but rather on that of the subject, to which it happens to be determined by them; this notwithstanding, being determinations of a substance is their own essence, and by an analogy with it they are also substances, just like all the other accidents.

[45]The verb *happen* translates here the Latin verb form *fiunt*; this could also be translated as *become* or *be made*, but *happen* is more immediately associated with accidentality. Dietrich is now addressing all the entities of Type 2, regardless of the distinction between its subtypes. He will readdress the distinction from paragraph (25) onward.

[46]Dietrich proposes the following causality-based hierarchy for a **B**-entity that takes its entitihood from a subject according to Subjecthood^0: (I) The **B**-entity is originated thanks to OUT-causes; (II)

(24) Although in the first manner an entity takes its origin essentially,[47] the notion of an entity in the second manner is more essential and more formal and proper;[48] the third of the aforementioned manners,[49] that is, its natural property inasmuch as it is an entity, is derived from the second. Concerning the first manner, these entities of which we talk are made by an agent in a subject and have the character of natural entities, as was said above of the substances; regarding the second manner, in each one of them the notion of entity inasmuch as an entity is considered; from which in the third place is derived their natural property, which is to be in a subject, according to Avicenna.[50]

(25) One must also consider that the notion and the manner of these entities vary in relation to the subject according to the way the notion of the subject varies.

(26) For if a subject is considered in terms of that which substands, in this way an accidental entity is constituted from the subject and from them, of which accidental entity the same subject is a part in terms of matter and of that existing in potency, but those entities that exist in it have the character of the form and of that existing in act. And according to this they are seen to have both the name and the character of accidents, and are distinct from the substance, according to what is said a substance from that which substands.[51]

(27) But according to what is said a substance from that which subsists, which is a notion of substance more formal than the one previously mentioned, according to this these entities are distinct according to their own notions and the name of each of the genera, under the name of, to wit, quantity, quality, and similarly for the others, because according to this manner their own notion, thanks to which they are entities, and which they take from a more formal entity that is the substance, is considered. And thus, with respect to the fact that in them that which they are accidentally is considered, they are more formal than the substances; but with respect to the fact that in them that which they are essentially is considered, and this is their essence according to the notion thanks to which they are entities, the subject is more formal than them.[52]

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the IN-causes then provide it with its quiddity and form; (III) this formal notion gives it its property of being a natural entity.

[47]Dietrich refers here to I (see footnote above).

[48]II.

[49]III.

[50]Avicenna, *Logica* I, Venetiis, 1508, 9va, l. 54-60; Averroes, *In Aristotelis Metaph.* V, comm. 14, ed. Ponzalli, 130.

[51]While accidentally constituting a single entity as from a subject (an **A**-entity) and a form, the Type-2.1 **B**-entities have a full-fledged entitihood, existing in act independently of the subject that substands with respect to them.

[52]Summing up (26)-(27): There are thus two notions of *substancehood*, to wit, something is a *substance* in the sense that it substands (literally: *stands under* or *underlies*) or in the sense that it *subsists*. The latter notion is more formal than the former. If we consider substancehood in terms of the former notion, then the subject (the substance), merely in potency, "contributes" with the matter, and the in-existing entities–*accidents* proper–do so with the form and their being in act, or *entelechy* (see paragraph immediately above). But if we consider substancehood from the viewpoint of that which subsists, then the in-existing entities are in fact *principles*, or IN-causes, of the natural

(28) Thus the entities of this second kind are those that entail in the substances certain natures that are principles of their natural operations or changes. Which can be in two ways, as was mentioned above.

(29) In such a way that they are principles of such changes essentially and primarily. And these are real qualities, according to which things either act or are acted upon, or are determined in terms of some perfection appropriate to themselves according to nature. Hence the Philosopher in Book V of the *Metaphysics*[53] determines the notion of quality in relation to change.

(30) In another way they are certain principles of such operations or changes, or even perfections, indeed essentially, but not primarily. And these are those that are, as it were, indispensable to that end, as the quantity and the local change, as was said above.[54]

(31) But this raises a question. Given that nature determines for different things, determinate according to the species, different and determinate quantities and changes, but to each its own quality according to the specific being that each one has, the second manner, in which it was said that certain entities take their entitihood formally from some other entity in terms of subject, does not appear to differ from the first, where it was said that certain entities take their entitihood from another entity according to its formal and specific notion.[55]

(32) But we must consider that it is for one reason that something takes its entitihood from some other entity by virtue of the notion of its quiddity from its formal notion as in an eliciting way,[56] but for another reason if it takes its entitihood from another entity according to its specific nature as in a subjective way. The first of these befits the first manner mentioned above, namely inasmuch as reason distinguishes between a subject or a thing and its formal notion and from this it brings out such entities actualizing in them the entitihood. The second of these befits this second manner, inasmuch as nature, which cannot distinguish between a thing and its formal notion, determines different formal natures of determinate species with respect to different things according to their determinate specific natures, not from their specific nature or formal notion, but rather according to itself, as was said.[57]

operations or changes of the subject. These **B**-entities exhibit the interesting property that they are more formal than the substance if they are seen from the viewpoint of their being accidents, but the substance is more formal than them if they are considered from the perspective of their own essence, as this is that they are entities that belong to another entity.

[53]Aristotle, *Met.* V, 14, 1020b8-25.

[54]Summing up (28)-(30): A new distinction, now with respect to a subject's natural operations or changes; those entities that are "principles" of such changes essentially and primarily are the *qualities*, those that are so essentially but not primarily are the *quantities*. (Dietrich's own lexical distinctions are not always respected by him; in this case, "principles" appears to be used to mean both IN-causes and OUT-causes.)

[55]Question: It appears that these Type-2.2 entities are not really different from the Type-1 entities, the (quasi-)properties, a problem that is posed by the supposed causal role of nature.

[56]*Elicitive*, in the Latin text. In other passages I consistently translate the verb *elicere* as *to bring out*, inasmuch as Dietrich of Freiberg uses this verb to convey the idea that the **B**-entities are *brought out* from the **A**-entities by means of an operation. Importantly, this is a mental operation.

[57]Another distinction: An entity can take its entitihood from some other entity in an *eliciting* or

(33) From these two manners or kinds of entities the following other two originate.

(34) The third kind of entities is the one that has its entitihood formally and in terms of subject from another entity, and this in a completing way, but originally from another entity that is considered in that subject.[58] And such entities are those that are classed in themselves according to their own notions in one of the ten genera in such a way that they do not entail any nature or any naturally real determination regarding a substance with respect to that which formally and primarily is signified by the term, but have on account of their notion some nature that it is necessary to consider in that subject. Such entities are those that belong to the genus of relation, as well as certain others.[59]

(35) I say "those that belong to the genus of relation," but not all relative determinations belong to this manner nor to the kind of category that is a relation to something, for example if some are relations according solely to reason and not in reality. Which indeed happens when the subjects of such relations are not entities but according to reason, or if their extremes are not distinct but according to reason, as when, for example, the same thing is related to itself under the same relation.[60] But the real relations by means of which some entities are related by their essence and not by some nature found in the subject do not belong properly to this manner nor to the kind of category that is a relation to something; they belong to the first manner, as it was said there. The reason why they are removed from this categorial genus will be seen below.[61]

(36) The Philosopher distinguishes in Book V of the *Metaphysics*[62] two general manners of all relative entities, to wit, that some are relative essentially, some are so accidentally. These two manners are found in the relatives in a twofold way.[63]

(37) In one way, in the simply correlatives when such relatives or the

in a *subjective* way. The former is Type 1, the latter is Type 2.2. The first is attributed to reason, the second to nature. This attribution can be taken as eliminating the natural causes with respect to the Type-1 entities.

[58]Subjecthood$^+$, or Type-3 **B**-entities.

[59]The Aristotelian category of relation includes some of the **B**-entities of this third type, which are characterized by having their own entitihood formally and in terms of subject from another entity (**A**) in a completing way, i.e. in a manner that entails completion or accomplishment (*completive*), but originally from another entity (**C**) that is also considered in **A**. Importantly, these **B**-entities do not entail any nature or any naturally real determination with respect to the **A**-entities. Dietrich further informs the reader that, besides relations, this Type 3 comprises *certain other* entities, but he does not specify what (accidents?) they are.

[60]Relations solely according to reason are in fact not Type-3 **B**-entities. Dietrich specifies that a relation is solely according to reason when the subjects are really not entities, being merely beings of reason, or when the correlatives are one and the same entity, constituting what we know today as a reflexive relation.

[61]On the other hand, real relations according to which some entities are related by their own essence and not by some nature in the subject are not relations proper, being rather properties, or Type-1 **B**-entities. We have already some of the Type-3 **B**-entities that are not relations, as announced in paragraph (34).

[62]Aristotle, *Met.* V, 15, 1021b3-11.

[63]Dietrich is now going to elaborate on his interpretation of the relations for Aristotle, namely in his Book V of *Metaphysics*.

very relations need not be specific to a genus of category, as, for instance, if some relatives are related to each other by their essence, like the cause and the caused, each one of the correlatives is related by itself and not by a relation that is in a genus. But if some entities are related to each other by their essence, like the measure and the measured, which kind of relation is considered between a first entity and other substances of things, then in fact one entity is understood to be related by itself, but the other is so accidentally, as the Philosopher says in Book V.[64]

(38) In another way, it is found both by itself and accidentally in the correlatives by means of a relation specific to a proper genus; these are in that categorial genus that is a relation to something, and they belong to this third manner already mentioned. The active and the passive not by their essence, but by some accidental nature found in a substance, in the same way as those correlatives whose relation is founded on some numerical proportion, like the equal and the unequal and their species, essentially are relatives regarding each of the extremes and are classed in a determinate genus, which is the relation to something.[65] Although knowledge and the knowable, and sense and the sensible are indeed essentially relatives with respect to one of the extremes, with respect to the other they are so accidentally, and according to this they are either essentially or accidentally specific to a genus.[66]

(39) If, however, there are entities of which one is causal or moving by its essence but the other is moved according to some accidental determination introduced in it by the moving, the very moving will indeed be a correlative essentially, but by a relation not specific to a genus; but by the relation that is in a genus that properly has the character of an accident, it is not related except by accident, but the very moved is related essentially by this kind of relation.[67] According to this distinction and difference of the relatives, it is seen among the theologians that sometimes they attribute to God an essential relation to the creatures, other times they take this manner of relation away from him, saying that he is related to a creature only accidentally or according to reason, of which manners each is true according to the aforementioned different notion of the correlatives; according to which difference it is seen among them that sometimes the relations by means of which God relates to a creature are

[64]Aristotle, *Met.* V, 15, 1021a26-30.

[65]Recall that Dietrich had considered the active and the passive, as well as the equal and the unequal, as Type-1 **B**-entities, or (quasi-)properties.

[66]See Table 1 in Section 4.2.4 for a summary of Dietrich's discussion of the Aristotelian category of relation.

[67]Dietrich considers now the relation between an entity **E** that has causal or moving powers (where by "moving power" mostly "capable of causing change"–in the sense of *metabolé*–is meant; see above) and a moved entity **F**. Two cases: (i) in a relation not specific to a genus, **E** is causal or moving by its essence but **F** is moved according to some accidental determination introduced in it by **E**; (ii) in a relation that is specific to a genus, namely a genus that properly has the character of an accident, **E** is related by accident but **F** is so essentially. These are respectively types **A.2** and **B.2** of relation in Table 1 below. Note that if we call **E** "the mover" and **F** "the moved," these two types of relation invert the positions of both correlatives, it being the case that the first correlative is essentially involved in the relation, whereas the second is so accidentally: We have (i) the mover and the moved, and (ii) the moved and the mover.

accidents, and sometimes they are not so.[68]

(40) Hence Anselm in the *Monologion*, c. 25, asking in which way God can be known as being invariable not only substantially, but also accidentally, given that he receives in himself relative accidents by means of which he relates to a creature, answers with these words: "But what is the inconsistency between the receptivity of those that are said accidents and natural immutability if from their assumption no change results in a substance?" And below: "For just as the supreme nature in its simplicity never undergoes a change by means of the efficient accidents, so it does not disdain to be expressed according to those accidents which in no way are inconsistent with the supreme immutability." And he conjectures on the different character of an accident of this kind as follows: "Just as those accidents that, by their presence or absence, cause some change are assessed by their very effect on the thing they actually change, so those that lack a similar effect are considered to be improperly called accidents." And he reaches the conclusion in the same chapter that the relative accidents cause a change in a relative way in a subject, namely because they are not as relations, but for a natural reason, which is the foundation of the relation, as are the degrees of heat and the colors and the like, as he says in the same place.[69] Augustine expresses the same opinion on the relations in the last chapter of Book V of *On the trinity.*[70]

(41) However, some authors[71] want to call the relatives by accident, of which we spoke, relatives according to reason, but the meaning is not to be made in the words, unless it correspond to the truth of things. There is an aspect regarding this that must be considered: That the concept of these manners, to wit, essential and accidental, is in such a way that these belong to the same class, so that if one of them is in reality, the other is in reality, which is evident from the nature and the notion of the origin of that which is accidentally from that which is essentially. In fact, the notion of that which is accidentally consists in a certain analogy with that which is essentially. Hence, that which is essentially falls in its very definition; this is not so with those that differ according to these differences, which are in reality and according to reason. However, that which is accidentally

[68]God is introduced as playing the role of **E**; the creatures, or the caused entities in theological jargon, are the **F**-entities. According to the theologians, both cases above appear to apply in this relation, so that God is involved in it either essentially or accidentally. (Incidentally, note that Dietrich is not including himself among the theologians.) But what if accidents and their manner (i.e. accidentality) are products of reason alone? How can one then account for the accidental relations of God to the creatures? Dietrich argues below that in fact accidentality, if taken in a certain analogy, does not differ from essentiality.

[69]"Foundation" translates here "*fundamentum*," a term that will occur frequently in Dietrich's elaboration in paragraphs (49) through (53). This Latin term is often translated as "fundament" or "ground," but my preference for "foundation" is accounted for by the fact that the main subject of this article is precisely the categories taken in a *foundational* sense (see Section 2 above). In effect, *fundamentum* was used to express the foundation of a relation with respect to a subject as that which the *subject is substantially*, i.e. that which the subject is besides being a subject to the relation. For a brief explanation of *fundamentum* in the context of the Christian doctrine of the Trinity (see next footnote), see Section 4.2.4 below.

[70]Augustine, *De Trin.* V, 16, n. 17; PL 42/922-924.

[71]Thomas Aquinas, *In I Sent.* d. XXX, q. 1, a. 1. comm.; *Summa theol.* I, q. 13, a. 7 comm.

can be said to be according to reason in a broad sense, as our venerable doctors of theology[72] often use it in this way.[73]

(42) But let us go back to the proposed in general concerning the entities of this third kind. And because the notion of such entities inasmuch as entities is taken both from the subject and from something else that is considered in the same subject, as it was said, that is why they belong to the kind of such entities that are forms happening intrinsically:[74] Although some of them require something extrinsic under the aspect of the term, they do not require it so that they take the notion of their entitihood from that, as it is evident in the case of relations.

(43) But these are originated from the two kinds named first in this manner.

(44) Firstly, these entities take their entitihood from something else according to its formal notion; and according to this they have the manner of properties of something natural and are therefore seen to belong to the first aforementioned kind.[75]

(45) However, they receive the nature and the manner of an entity classable[76] in a genus due to the fact that the thing according to whose formal and definitive reason they are taken from is a natural determination of some substance; which pertains to the aforementioned second kind.[77]

(46) From this now in the third place these are to a substance as its determinations and accidental manners, and they are entities, because they belong to an entity, namely a substance, according to the manner of the subject in which they are, not as brought out from its formal notion, but, as it was said, accidentally through that nature and with that nature from which they primarily and originally take their entitihood in that same existing subject, as it was said, for example continuous quantity, as it is a determination of a substance and truly a real accident according to nature.[78]

(47) According to this, the one, which is taken in terms of continuous quantity regarding a corporeal substance, receives the nature of an accident classable in a genus and is the principle of the number, which follows the division of the continuous, according to the Philosopher,[79] and it is an accident in the corporeal things. However, the one, immediately related

[72]Dietrich refers implicitly to Thomas Aquinas, with some of whose doctrines he notoriously disagreed. Note how this implicit reference contrasts with the explicit references to Anselm and Augustine.

[73]This short aside in paragraphs (39) through (41) appears to aim at establishing reason as a causal origin on the same footing with nature. See Section 4.2.4 below.

[74]Translating "*advenientes*" as "happening," in order to emphasize the accidental nature of these entities. See paragraph (56) below for additional remarks on this.

[75]Dietrich appears to reduce the relations to properties of natural entities (Type 1).

[76]That can be placed in a class.

[77]In fact, Dietrich reduces the relations (**B**-entities) to natural determinations (**C**-entities) of some substance **A**, i.e. Type-2 **B**-entities. But the Type-1 **B**-entities are never unequivocally reduced to these, which leaves us confronted with an ontological association between Type-1 and Type-2 **B**-entities that is unspecified.

[78]Quantity, a natural determination of a substance, can be either continuous or discrete, so that this is a real accident according to nature.

[79]Aristotle, *Met.* V, 15, 1021a12-13; ibid. V, 6, 1016b17-18; ibid. X, 1, 1052b20-24.

to a substance, all accidents having been circumscribed or removed from the substance, does not have the nature or the manner of an accident classable in a genus, but only that of a natural property of that which produces such an entity. And what was said of the one is equally true of those other entities that belong to this type.[80]

(48) Nevertheless, because these entities, as well all other entities that are in substances, have the character of an entity according to an analogy with a substance, we must consider about these entities, according to what was said above, that the entitihood of those that are constituted in some of the ten genera consists in a double analogy. Firstly, they in some way receive the character of an entity according to the formal notion of some other natural entity, as was said.[81] However, this natural entity[82] is a remoter entity, because it is an accident or a natural determination of a true entity, which is a substance.[83] And in this way the notion of this analogy may formally complete the notion of the first analogy in constituting these entities, so that they may signify a thing of first intention classable in a genus.[84]

(49) And this is what some[85] mean, to wit, that the reality of such entities is but the reality of their foundation.[86]

(50) Indeed, if they understand by the term "thing" or "reality" some nature or natural determination, then it is agreed that such a reality is solely found in the foundation of such entities.[87] Although formally and primarily they do not signify it by the term, they entail it from their concept regarding a substance, and it is almost the same as, if I understood by the term "entity" only that which subsists essentially and absolutely, I would be saying that the whole entitihood of whatever accident is but the entitihood of the foundation, which is a substance.

[80]Dietrich uses the one to exemplify the reduction of the **B**-entities of Type 3 to both Type-1 and Type-2.2 **B**-entities: If we consider the one (a **B**-entity) with respect to the continuous quantity (**C**-entity) of a corporeal substance (**A**), then the one is a Type-2.2 **B**-entity, namely a quantity; if however it is taken as immediately related to a substance simpliciter, no **C**-entity being considered, then it is a natural property, a Type-1 **B**-entity, more specifically a Type-1.1 **B**-entity.

[81]Annotating this passage for clarity: "they [**B**-entities] in some way receive the character of an entity according to the formal notion of some other natural entity [a **C**-entity in **A**]."

[82]What is now the **C**-entity.

[83]The **A**-entity. Note how Dietrich refers to this **A**-entity as a true entity (*ens verum*) with respect to the remoter being (*ens ulterius*) that is the **C**-entity considered in it as according to Subjecthood$^+$.

[84]Dietrich appears to want it so that the ontological status of first intentions, superior to that of second intentions, be given to the relations. These were, in effect, seen as second intentions, just like all the other categories other than the substance, but the second intentions were firstly conceived as the universals, or things of reason. See Figure 10 below.

[85]E.g., Henry of Ghent, *Quodl.* V, 2, ad arg., Parisiis 1518, 155rN; ibid. IX 3 corp., 349rT-V; ibid. IX, 3 ad arg. 1, 35lrE.

[86]*Fundamentum* in Latin. (See footnote above on this central term.) According to Henry of Ghent and also Richard of Middleton, relations have no ontological content–their reality–other than that of their foundation; from the viewpoint of subjecthood, they add nothing to the subject.

[87]The Latin word "*res*" in medieval philosophical jargon was often used in the sense of *a reality*, so a countable noun, just like its most common translation, to wit, *thing*. As an example, *res primae intentionis* can be translated into English as either *(a) thing of first intention*, or *(a) reality of first intention*. Importantly in the case at hand, Dietrich writes here on the origin of the *res praedicamentales*, often translated as *categorial realities*, or less commonly, *categorial things*.

(51) If, however, they understand by the term "thing" or "reality" whatever in whatsoever manner is according to the notion of whatsoever formal act, thanks to which notion it is a thing of first intention, then their opinion is true with respect to the fact that the formal notion of these entities and of the foundation is the same: Indeed, the definitive notion stating the essence (*quid est*) of that thing that is the foundation is the same as that stating the cause or the reason why (*propter quid*) of these entities. And this is the first notion of a certain entitihood in them, thanks to the notion actualizing in them this entitihood according to the aforementioned notion. Just as these entities primarily and originally take a certain entitihood from their foundation, so they take from the same both the nature of a categorial genus and the nature of an accident with respect to a substance, namely so that they may have the nature and the manner of real accidents of a substance.

(52) But if we want to reduce such entities to their causes, then, though thanks to the notion of the foundation they have a cause in nature, thanks to the notion of what formally and primarily is signified by the term and in which the notion of its proper genus consists, they are from an operation of the intellect. Indeed nature does not bring out or produce anything from the notion of a thing, just as it does not distinguish between a thing and the notion of a thing, this being the proper job of the intellect, as it will be said below.

(53) However, if we remove from such entities the act of reason, then they are in no way entities with respect to that which is signified by the term, but there remains the sole reality and the entitihood of the foundation. And thus in the third way their opinion can be stated to be true, but less properly, because according to this reflection such entities are not classed in a proper genus except perhaps according to the sole designation, according to which the metaphysician does not distinguish these kinds of things.[88]

(54) These are then the entities of the third kind, of which it is somehow evident thanks to which notion they are entities inasmuch as entities, and to which causes they have to be reduced.

(55) The fourth kind of entities, which as much as the previous kind depends formally on another entity by essence, is that in which there is an entity that belongs to an entity in terms of subject, but according to something else that is considered in that same subject, and originally from the notion of another entity that is different from the subject. And this is in terms of the origin the first in the formal notion of this entity.[89]

(56) And on account of this each one of these entities is said to happen

[88]See Section 4.2.4 below for a short explanation of the complex content of paragraphs (49) through (53).

[89]Dietrich addresses now the Type-4 **B**-entities, which have their entitihood associated with Subjecthood^{++}. This is made clearer if we annotate Dietrich's words: "there is an entity [**B**] that belongs to an entity [**A**] in terms of subject, but according to something else [**C**] that is considered in that same subject, and originally from the notion of another entity [**D**] that is different from the subject."

extrinsically.[90] For example, the very "where," which is a thing of a specific genus, one of ten, it itself, I say, is an entity because it belongs to an entity in terms of subject–which is a substance–in that way as was said above concerning other entities. However, it is in a substance thanks to its dimensions, which nature regards before the substance itself, and thus it is in a subject according to something else that is considered in that same subject. But before anything else it is in a subject in terms of the containing place, which is something different from the subject, reason why it is said in *On the Six Principles*[91] that the "where" is the delimitation of a body proceeding from the delimitation of the place.[92] And this applies to the other entities that belong to the same manner.

(57) The formal notion of these entities has thus an extrinsic origin, but nature realizes their formality in the subject according to which they inhere[93]; in them, the character of an entity is realized by their final relation to the substance in which they exist.[94]

(58) These entities are in general in the number of the six genera of things that are said to be forms happening extrinsically. They must be reduced to the same manner and to the same causes in genus of the previous ones which belong to the third kind.[95]

(59) But one might now ask why it is that in the case of entities that are taken from the formal and definitive notion of a substance some genus of category, distinct in its own notion from the genus of the substance, is not constituted, as we see that this happens according to other genera, for example, the equal and the unequal in terms of the quantity, in terms of the quality the similar and the dissimilar, which are certain relations, just in the same way that the "where" is in terms of the notion of the place, and similarly for many others.[96]

[90]Dietrich writes of these entities that they are "*extrinsecus advenientes*." Although the adverb "extrinsically" may denote OUT-causes, namely an efficient cause (see paragraph (20) above), here it denotes more immediately something that is extrinsic to, or different from, the subject. Compare with paragraph (42) above. The distinction between "*extrinsecus advenientes*" and "*intrinsecus advenientes*" was used to qualify the relations directly, namely by Duns Scotus, who spoke of the six Aristotelian categories here under analysis as *relationes extrinsecus advenientes* in his *Quaestiones quodlibetales* (cf. q. 11, p. 34; John Duns Scotus, sd/1969).

[91]*Liber sex princ.* V, 48, ed. Minio Paluello – Dod, 45. This anonymous medieval text aimed at "remedying" Aristotle's insufficient discussion in *Categories* on the accidents other than quantity, quality, and relation. See Figure 5.

[92]Dietrich analyzes the category of place under his theory of Subjecthood^{++}; see Section 4.2.5 for a summary.

[93]Translating "*insunt*" according to my interpretation; see Section 4.2.5.

[94]There are here two aspects to consider: Firstly, but mentioned secondly in this passage, these Type-4 **B**-entities are reducible to relations, or Type-3 **B**-entities, because their entitihood is realized by the final relation to the substance to which–secondly, but mentioned firstly–they inhere, so Type-2.1 **B**-entities. In the case above of place, though it is in a substance first of all thanks to the containing place, which is extrinsic to the substance, it is its relation to the substance that provides it with its entitihood.

[95]So, the Aristotelian categories of place, time, position, state, action, and passion are reduced to relations, Dietrich's Type-3 **B**-entities.

[96]The equal and the unequal are considered under quantity, the similar and the dissimilar, which are relations, under quality, just in the same way that the "where" is considered under place, etc. So, all these **B**-entities that are taken from the formal and definitive notion of a substance are considered not directly under the genus of the substance, but rather under other genera (the quantity, the quality,

(60) But we must consider that this happens differently concerning the entities that are taken from the notion of a substance and those that are taken from the notion of the other genera. In fact, those entities that are from a substance always have the same respect and relation to the substance, namely as proper accidents and as essential affections of the substance. Inasmuch as they are taken from a substance in terms of its quiddity, they cannot respect an entity other than the substance for the reason that the substance is an entity in itself in terms of absolute subsistence, reason why they belong to the same genus of the substance as properties.[97]

(61) However, the things of the other genera can be considered in a twofold way. In one way, in terms of their nature in itself and absolutely, without the notion of the subject, and those that in this way are conceived from their own notion are considered to be proper manners of such natures and have the character of properties.[98] And according to this they cannot but have the character of a proper genus, from whose proper notion they are taken.[99]

(62) In another way are the things of the other genera considered in relation to a subject, inasmuch as they are certain determinations of a substance. And in this way some things can be taken from their notion regarding a substance as manners and determinations of the substance. And thus each of such entities has some proper character of a specific genus, inasmuch as it is taken in this way from the notion of some nature, not so that it be some manner or property of that same nature, but so that according to that very nature it be some manner and a determination of a substance.[100] A property as such is contained within the nature and the notion of the proper genus of the subject;[101] but that which is conceived in terms of some nature is conceived with respect to something else, as a form having the proper notion of something of a specific kind relative to a substance, though in its concept it entails, relative to a substance, the nature of that genus from whose notion it is taken. And these are the entities that belong to the third and fourth kinds, as was said before.[102]

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the relation, the place, etc.). Why is it that these six accidents do not constitute a specific genus, like the quantity, the quantity, and the relation, one might then wonder. (See also footnote 113.) Of course, Dietrich is here anticipating challenges to his own reduction of these six accidents to the category of relation, namely to what can be seen as relations happening extrinsically–a theoretical move in which he was not alone (cf. footnote 90).

[97]The properties are **B**-entities that take their entitihood immediately from the quiddity of a substance, reason why they are in a direct relation to it and cannot be conceived outside this relation. These are in fact Type 1.1 **B**-entities, and the proper genus to be considered here is the substance, even if taken under the genera quantity and quality. The example given above by Dietrich is that of the one: This is originally taken from the number (substance), under whose notion it can be considered from the viewpoint of (in)equality (as "one in quantity) or (dis)similarity (as "one in quality").

[98]These are the Type-1.2 **B**-entities, which are, or have the character of, properties. In effect, they are in an **A**-entity but with relation to something else.

[99]This accounts for the fact that the (quasi-)properties constitute a distinct category.

[100]These are the Type 2 **B**-entities.

[101]Cf. footnote 97.

[102]The key word here is "nature" in the sense of essence. Although the Type-3 and Type-4 **B**-

4 Dietrich's Foundational Ontology

4.1 The Intellect as an Ontological Foundation

4.1.1 Ontological Intentionality

An important aspect to bear in mind when extracting a foundational ontology from Dietrich's causal ur-segregation of the Aristotelian categories (see Fig. 6) is that the accidents are–wholly or in part–attributed to a mental act as their causal origin, more specifically to the intentions, a term (re-)introduced in late medieval philosophy via the Arab commentators of Aristotle (cf. Gyekye, 1971). In the first part of the *De origine*, Dietrich had established a ur-distinction between natural and mental causes, each associated respectively with natural and mental acts (cf. Fig. 7). The latter are associated to two kinds of *intention*, first and second, the first intentions being the concepts, or mental images/representations, of things, and the second intentions being so to say concepts of concepts (e.g., grammatical categories such as noun, verb, etc.). In any case, the term *intentio*, particularly so the *prima intentio*, conveys the conception of mental representation as an act of the mind tending towards something outside itself, a conception that was later on retaken and reintroduced in philosophy by Brentano (1874/1995). Just as Dietrich uses the *intentio* to segregate causally mental and natural entities, Brentano sees *intentionality* as that which distinguishes mental and physical phenomena. Brentano's passage on intentionality is rather well known, but I quote it here again for the convenience of the reader:

> Every mental phenomenon is characterized by what the Scholastics of the Middle Ages called the intentional (or mental) inexistence of an object, and what we might call, though not wholly unambiguously, reference to a content, direction towards an object (which is not to be understood here as meaning a thing), or immanent objectivity. Every mental phenomenon includes something as object within itself, although they do not all do so in the same way. In presentation something is presented, in judgement something is affirmed or denied, in love loved, in hate hated, in desire desired and so on. This intentional in-existence is characteristic exclusively of mental phenomena. No physical phenomenon exhibits anything like it. We could, therefore, define mental phenomena by saying that they are those phenomena which contain an object intentionally within themselves. (Brentano, 1874/1995)

The difference between Brentano and Dietrich's stances on the intentions is that the latter sees them as not only the root for the distinction between mental and physical phenomena or, in his terminology, between mental and natural acts or operations, but also as having causal powers on the existence of some of the classes of entities that compose reality, namely (some of) the Aristotelian accidents. So, we have here an ontological cause that is in fact an epistemological principle: **B**'s formal subsistence depends directly on **A** as a principle, or IN-cause that is also an OUT-cause for **B**, a

entities are related to some nature of a substance in terms of their own notion (cf. (34)), their genus is that of the **B**-entities that more immediately *determine* the substance's nature, i.e. the **B**-entities of Types 1 and 2. This accounts for their being reduced to these **B**-entities.

relation of direct or causal dependency that is actually "our conception of it," or the human cognitive ability.

This is, as I have argued for, epistemological idealism (Augusto, 2005; 2006a), and a form of idealism that actually has its roots in Aristotle rather than directly in Plato, namely inasmuch as the theory that the forms are in the human soul is to be found directly in Aristotle's *De anima*, even if it reaches the later middle ages by very winding roads (Augusto, 2006b). But Dietrich was not an idealist isolated among realists; the "school" of which he was a member, the Dominican scholastics, shared many of his ideas, even if this group was not entirely homogeneous, and he took medieval epistemological idealism to an unprecedented acumen.[103] We can see this as the semiotic triangle that acts as his ontological commitment in Figure 9, where ontological categories are circumscribed to the Aristotelian ones.

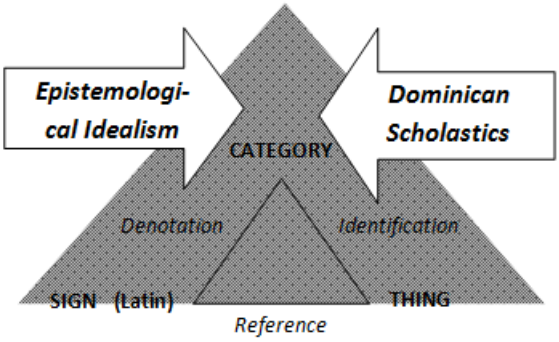

Figure 9: Semiotic triangle for the *De origine*.

The surprising *volte-face* in the very beginning of part 2 of the *De origine*, (1)-(6) is that what in part 1 had been segregated as having their formal subsistence from a mental act alone (the Aristotelian accidents minus quality and quantity; see Fig. 6) is now extended to *all* the entities that belong to another entity, including the properties, and this is specified into four types that have to do with the substance–seen as a subject–to which they belong (see below). This, then, is *now* the third kind of entities, and this includes the properties, as well as the quantity and the qualities. Importantly, they *all* take their formal subsistence from something else, so they all can be captured by label **B**. In *De origine* I, we were told that this formal subsistence is not attributable to a natural act, but rather to a mental operation, namely to a first intention, so that Dietrich's can be said to be an *intentionality-based* ontology.[104] Of course, it remains a causality-based ontology, but one in which intentionality plays a

[103]For instance, Dietrich's ideas clashed in many important points against Thomas Aquinas'. In particular, Aquinas' strict distinction between the entities as conceived by the human mind (*in anima*) and the entities as they are in the real world, i.e. outside the human mind (*extra animam*; cf. *In I Sent.* d. II, q. 1, a. 3. comm.), appears unwarranted to Dietrich.

[104]I am here borrowing Brentano's term; the usual caveats when using terms out of their historical contexts apply. The fact that for Dietrich it is a first, and not a second, intention that has this causal role is what I call in Augusto (2021) one of Dietrich's "bombs."

central role.[105]

4.1.2 Cognition, Intellects, and Intentions in Late Medieval Philosophy

What exactly the theoretical reach of Dietrich's ur-segregation between natural and mental acts in terms of causality is needs thus to be investigated from the viewpoint of this ontological intentionality–or less strongly put, intentionality-based ontology. This, in turn, needs to be briefly contextualized.

In *De origine* I, the substances (the **A**-entities) were then postulated to be caused by a natural act, while most **B**-entities–excepting here the properties and two of the accidents, to wit, quality and quantity–were said to be caused by a mental act. If put into relation with the Arabic doctrine of the intentions that was adopted and adapted by the Dominican scholastics (Augusto, 2009; Gyekye, 1971), then Dietrich would be expected to attribute to the entities caused by a mental act the ontological status of second intentions, or things of reason, by an analogy with the universals, or second substances, with respect to the first substances (see Fig. 10); but Dietrich sees them as things of first intention.

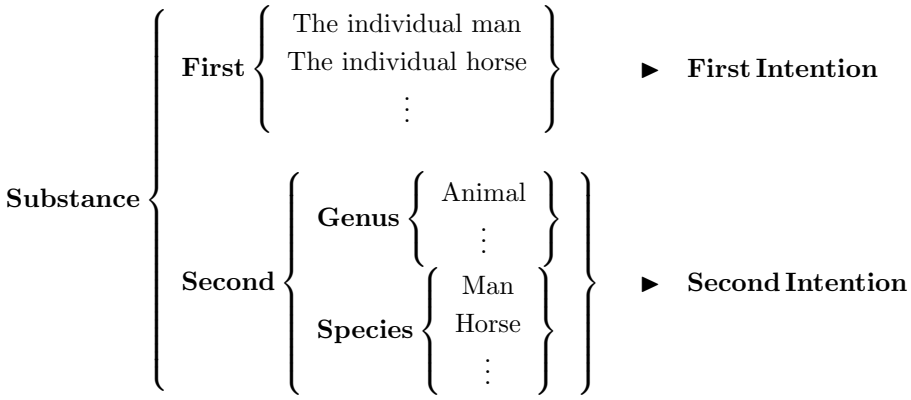

Figure 10: Aristotle's two substances and the Arabic intentions.

This Arabic doctrine of the intentions roots directly in Aristotle's distinction between first and second substances, as shown in Figure 10, where the symbol "▶" denotes "corresponds to." But this simple mapping between the first substances and the first intentions and between the second substances and the second intentions comes

[105]In fact, Dietrich's "intentionality" is a theory only remotely to be associated with Brentano's, namely in the sense that the former is a sort of *ontological intentionality* (rather than merely an intentionality-based ontology), whereas the latter is simply a psychological theory of intentionality. If Dietrich's is indeed a theory of ontological intentionality, as I believe it is, this does not contradict my opinion that it is (also) a stance in epistemological idealism: The *strong* version of this stance, maximally exemplified in Berkeley's motto *esse est percipi* (Berkeley, 1710; 1713), argues that (for an entity) to be is to be perceived–or cognized, in today's cognitive lingo. In particular, if the range of mental acts actually includes the natural operations–an interrogation–, then we have it that the whole of nature just is what the human mind says nature is, a strong epistemological idealist stance concretized in the German *Naturphilosophie* (many sources, but see Pinkard, 2002).

with a highly complex noetics–theory of the intellect (*noûs*, in Greek)–that ended up causing trouble to many a Western philosopher in the 13th century.[106] Briefly (but see Augusto, 2009, for an elaboration), from an originally Aristotelian distinction between the agent and the possible intellects, which with Alexander of Aphrodisias had already become a tripartition, the Arab philosophers had established a hierarchy of at least five intellects. From lowest to highest, they conceived:

- The material intellect (*intellectus materialis*): The intellect in absolute potency, capable–like first matter–of receiving all the forms.
- Intellect *in habitu* or in possible potency: This intellect, which has already "received" the most basic principles of reasoning (e.g., "the whole is bigger than the part"), is in act with respect to the material intellect.
- Intellect in act (*intellectus in effectu*) or in perfecting potency:
  - *Intellectus accommodatus*: It both knows the intelligible forms and knows that it knows.
  - *Intellectus adeptus*: It thinks whatever it wants to without the effort of acquiring the intelligible forms.
- *Intellectus sanctus*: It has an almost direct contact with the agent intellect.
- The agent intellect (*intellectus agens*): The "container" of all the intelligible forms of everything.

This hierarchy is Avicenna's, a highly influential commentator of Aristotle for the late medieval Western philosophers (cf. Avicenna, sd/1968-1972). In Book III of *De anima*, where Aristotle elaborates on his distinction between the agent and the possible intellects, he makes it–arguably–clear that these are two "manners" or "modes" of the human intellect when he states that "the soul (*psychê*) is all the beings."[107] However, the strict separation between the agent intellect and the many other, lower, intellects in the hierarchy above together with the Neoplatonic-influenced Arabic doctrine of emanation motivated the belief that this was a separate intellect from which humans would–via emanation–receive the intelligible forms. Then, some philosophers started talking of *the unity of the intellect* in the sense that there was a single agent intellect, a doctrine that was eventually attributed to Averroes, a commentator of Aristotle even more influential than Avicenna.[108] The question then rose: Who, then, thinks in fact? A question with obvious issues that implicated the moral responsibility of humans, and thus had also theological implications, calling for the intervention of

[106]This "trouble" is known now as the condemnations of the then bishop of Paris Étienne Tempier in 1270 and 1277. These followed the–ineffective–condemnations of 1210 and 1215, also in Paris, in which the teaching of both Aristotle's natural philosophy (in 1210) and his physical and metaphysical writings (1215), as well as the Arab commentaries thereon, were forbidden.

[107]Cf. *De anima* III, 8, 431b21 (Aristotle, sd/2016). For the controversial character of this interpretation, see, e.g., Gerson (2004).

[108]So much so that he was known as *the Commentator*. As a matter of fact, Averroes appears to have defended the thesis that there is a single, universal capacity for knowledge, out of which individual thinking experiences are then made possible when individual humans face the particulars of which reality is constituted.

Thomas Aquinas, the utmost authority in theological issues in this period (cf. Thomas Aquinas, sd/1968).

Albertus Magnus, who was at the head of the Western reception of this hierarchy, had essentially adopted it but emphasizing the individual, human character of the agent intellect (see Augusto, 2009).[109] Partly following in his footsteps, Dietrich, who was a disciple of Albertus Magnus, appears to revert to the original Aristotelian distinction, disregarding any other of the intermediary intellects between the possible and the agent intellects. And he leaves no room for doubt, when he states clearly that this is *our* agent intellect he is talking about.[110] While this is a subject worthy of research by itself, here what is relevant is that Dietrich of Freiberg appears to want to retain Aristotle's original doctrine of the human soul as both the container of all the intelligible forms and their actualization when confronted with the particulars, but for reasons that go beyond a mere account of human cognition in the strict sense. The strictly cognitive operation of the human intellect is as follows: The agent intellect contributes with the intelligible forms that it possesses in itself, what Dietrich sees as its "universal and exceedingly formal faculty" (cf. *De origine* II, 15); the possible intellect, thus coined because it is the potency to become–the representation of–any entity in act, then becomes actualized by the form or the quiddity of every entity.[111] This is by and large Aristotle's own doctrine, but the difference between the latter and Dietrich's is that this sees this cooperation as an ontological causal origin; in effect, Dietrich sees the human intellect, taken as a cooperative duo constituted by the agent and the possible intellects, as possessing the ability to "bring out"–*elicere*, in Latin–(some) entities and to actualize in them their entitihood (*agit entitatem in eis*; cf. *ibid.*). In the specific case at hand of the categories other than the substance, Dietrich attributes this intellectual causality specifically to a first intention, thus going against the then current view that the accidents were things of second intention, or mere beings of reason, *entia rationis*, with a lesser ontological status–a view that, however, had already started to change with Ockham's semantic perspective (see Klima, 1993).

4.2 Four Types of Subjecthood: A Subjective Foundational Ontology

Dietrich's elaboration on the Aristotelian categories goes as far as it can go: It reduces the Aristotelian list to a single category, the substance, namely insofar as this is taken as a thing of first intention (see Fig. 10). This is what I call Dietrich's "third bomb." This *implicit* reduction is carried out by what he calls analogies (first and second), and is itself supported by an *explicit* inter-categorial reduction: Of the nine Aristotelian accidents, only two remain as true independent categories, to wit, the quantity and the quality, with the relation and the remaining six accidents being given a derivative ontological status.

[109] At the request of Pope Alexander IV, Albertus Magnus wrote in 1256 a treatise in which he exposed the Arabian theses of the unicity of the intellect and weighed them against his own ones. Relevant in this commissioned "pamphlet" is that Albertus Magnus "sanitizes" Averroes' role in the creation and diffusion of this then for many unpalatable doctrine.

[110] *Intellectus igitur noster agens...* (*De origine* II, 15).

[111] *Representation* is a concept that is typically avoided in studies in both classical and medieval noetics, a state of affairs I strongly disagree with; see Augusto (2006b).

But Dietrich remains faithful to the Aristotelian theory in many points, in particular in what of it roots in the notion of subject. This is so much so that the causal-dependency focus falls now largely on the substance as subject for the remaining entities, and on these as *entia entis*, or entities that belong to an entity. This belonging is the crux of any ontology rooting in Aristotle's categories, because, as seen above, this appears to be more of a linguistic, or in any case language-use, aspect than an ontological one. In *De origine* II, 7, Dietrich clarifies the sense in which the **B**-entities, which he refers to as entities of the third kind, are to be distinguished from *attributes* of a subject such as a diet, which can be said to be healthy with respect to the health of an animal (the final cause), or a herb, which can be said to be medicinal by attribution to the art of medicine (the efficient cause): A diet cannot be said to be healthy unless we have in mind an end for a subject (the subject can be healthy if following a certain diet); equally, a herb has not in itself and in terms of its essence any medicinal powers unless we consider the art of medicine with respect to a subject (the subject can be healed if drinking a herbal infusion). But the entities that are here under scrutiny are attributed to a subject "in themselves and in terms of their essence," which already gives the **B**-entities, if not the same, a very similar ontological status with respect to the substances, or **A**-entities.

In any case, for Dietrich a **B**-entity depends causally on an **A**-entity's subjecthood for its own formal subsistence, and it is the latter's type of subjecthood, rather than its substancehhod, that has now the central role in ontological causality. The question to answer then in the analysis of *De origine* II is how Dietrich (i) conciliates this subjecthood-based causality with the three different causes conceived by him in *De origine* I, to recall, the IN-causes, corresponding to Aristotle's formal and material causes, the OUT-causes, corresponding to Aristotle's final and efficient causes, and the OUTIN-causes, or extrinsic principles, and (ii) does so from the viewpoint of what I above (Section 4.1) called ontological intentionality.

4.2.1 The Substance as Subject: Substancehood and Subjecthood

If we think of an individual man, say John Doe, we necessarily think of him according to whatever can be attributed to him (e.g., height, hair color, job, ...); if nothing is attributable to John Doe, then there is only his being a substance, which amounts to John Doe's being an individual man (a first substance); this means that John Doe is a human, a member of a *species*, and hence an animal (the *genus*) (cf. Fig. 4)–and a rational one for that matter (the *differentia*). This is the same as saying that John Doe exists at a purely formal level, where all we can say about him is that he is a material substance, viz. an animate sensitive body, viz. an animal, and a rational one, and thus a human (cf. Porphyry's tree). This is John Doe's quiddity, his *definitio* or *entitas*, in the jargon of medieval ontology. The important aspect to draw from this is that, though of course we cannot really say much about John Doe, we have what it takes to be able to say something specific about him as soon as we start considering with respect to him, taken as a *substance*, the things that *happen* to him, i.e. the *accidents*. In other words, the substance is what remains–i.e., what is essential–when all the accidents are removed. This is a rough outline of the distinction between *essentiality* and *accidentality* in Aristotelian metaphysics.

As seen above (see Section 2.3), Aristotle associates with substance a notion of

subject and of what it is to say something of a substance as subject. In particular, he writes: "Whenever something is said of another thing as of a subject, everything that is said of the predicated thing will also be said of the subject" (*Categories*, 1b 10). And he gives the following example: "Man" is predicated of *the individual man* (the subject), and in turn "animal" is predicated of *man* (the subject), so that "animal" is predicated also of *the individual man*. So far, the linguistic use at play is obvious; things start to complicate when Aristotle adds that this is so because the individual man *is* indeed both a man and an animal (*ibid.*). It thus appears that Aristotle is defending the stance that our logical constructs as based on, or just expressed in, our natural language veridically reflect the ontological status of things, which, in turn, suggests a philosophical stance of metaphysical realism.

But we know that Dietrich's stance was epistemological idealism; we also know that both Aristotle and his commentators were authoritative sources for him. So, it will be interesting to see how Dietrich conciliates both aspects. Just like Aristotle, Dietrich accepts the privileged ontological status of the substance. In effect, it appears to be his very ur-element, to which all the other entities, to wit, the properties and the accidents–belong. But the very beginning of *De origine* II introduces new aspects, some of which appear to be at odds with the contents of *De origine* I with respect to the entities that belong to other entities: Dietrich now considers all the entities that belong to another entity–the properties and the nine accidents (contrast this with Fig.s 6 and 8)–from the viewpoint of the substance as subject, but in a much more complex way than Aristotle's. The next paragraphs clarify this statement.

Dietrich's general definition of substance was given in *De origine* I, 23 (see Section 3.1). More specifically now, for Dietrich an **A**-entity is a substance in two senses: The first sense is that of *subsistence* (we say simply "**A** is a substance"); the second is better conveyed by the Latin verb *substare*, lie/be under (we say "**A** is a substance *for* **B**"). We can see this as the different senses of *substancehood*, that which makes an entity be a substance as such. In the latter conception, **A** acts as a *subject* for **B**, which, if we take the original Greek and Latin senses of this word,[112] means that **A** *lies*, or *is*, *under* **B**. But in the former notion **A** can also, by simply subsisting, act as a subject for any **B**. Thus, substancehood, in turn, determines different types of *subjecthood*–the property of being a subject. This is in fact *the* central concept to grasp what Dietrich's foundational ontology is all about; in effect, if we retake the citation from paragraph (25) of *De origine* I annotated above in Section 3.1 and now further annotate it with this concept, we have the key to Dietrich causality-based ontology:

> This way is that in which something [**Subjecthood**] is a principle [an **IN-cause**] for another [**B**] in such a way that by virtue of this very principle existing outside the essence [an **OUT-cause**] of that whose [**B**'s] principle it is, by virtue of that same principle does it [**B**], whose principle it is, nevertheless subsist formally, inasmuch as it [**B**] takes from that same existing principle the notion of its [**B**'s] entitihood or quiddity from our conception of it [**Subjecthood**].

So, subjecthood, as a human concept with relation to substance, is the link between

[112] Respectively, *hypokeímenon*, present participle neutral of *hypokeímenein*, and *subiectum*, present participle neutral of *subiecere*.

Dietrich's ontology and noetics, in the sense that the human mind is endowed with ontological causal powers–an endowment that coincides with first intentions (see Section 4.1 above). In his analysis of the causal origin of the accidents and of the entities that have the manner of accidents (the properties), all called here **B**-entities for the sake of clarity, Dietrich distinguishes four types of causal dependency, which are actually ordered in degree depending on **A**'s subjecthood, or how **A** is conceived to act as a subject with relation to **B** (cf. *De origine* II, 1). Briefly, an entity **B** depends causally on another entity **A**, a substance (in principle), according to the latter's:

Subjecthood^{-}, i.e. according to **A**'s formal and definitive notion, or quiddity, rather than **A**'s subjecthood (**Type 1**);

Subjecthood^{0}, i.e. **A**'s being a subject for **B** (**Type 2**);

Subjecthood^{+}, i.e. **A**'s subjecthood^{0} and something else (**C**) in **A** as a subject (**Type 3**);

Subjecthood^{++}, i.e. **A**'s subjecthood^{+} plus something (**C**) that is in another subject (**D**) (**Type 4**).

This is thus a distinction ordered in degree from "−" through "++." The proliferation of entities in Types 3-4, in which things **C** and **D** are also considered in a substance taken as a subject, is noteworthy. As a matter of fact, Types 3-4 are originated from Types 1-2, we are told in paragraph (33), so that they can be seen as subtypes in what is in fact a phased operation

$$\{\{\text{Type 4}\} \rightrightarrows \{\text{Type 3}\}\} \rightrightarrows \{\text{Type 1, Type 2}\}$$

where the symbol "$\rightrightarrows$" denotes reduction in the sense of the arrows. This reduction entails the fact that the Type-3 and Type-4 **B**-entities do not have an own genus of category, or, to put it equivalently, they are not full-fledged categories.

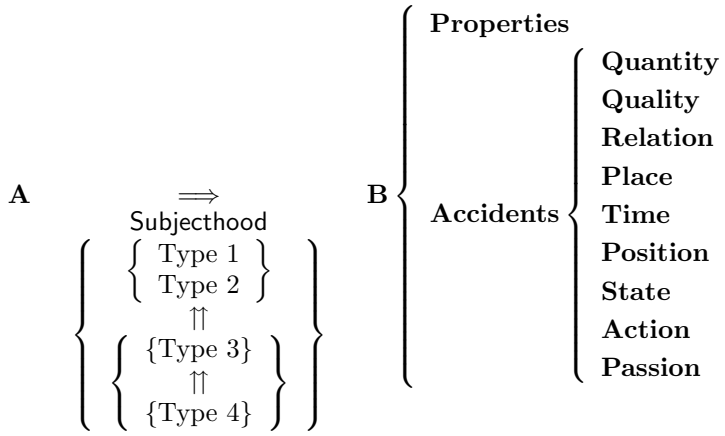

Figure 11: Dietrich's causal ur-partition of entities (**B**) that belong to another entity (**A**) by the latter's notion of subjecthood: A first sketch.

Figure 11 schematizes the state of things in the beginning of the *De origine* II as far as the causal dependency of the **B**-entities with respect to **A** is concerned. The crucial aspect in this causal ur-partition is that Dietrich displaces the focus from the causes themselves to the substances taken as subjects for the accidents and the properties. It is easy to see from this figure that subjecthood has a central ontological status in Dietrich's foundational ontology, a superior status that is conveyed by the fact that "**A** *causes* **B**"–denoted by **A**$\Longrightarrow$**B**–appears now to be equivalent to, or in any case on the same ontological level as, "**B** *belongs* to **A**." But the reader should be warned that soon enough (see next Sections) Dietrich will consider that accidents can also be considered **A**-entities.

4.2.2 Properties

Type-1 subjecthood, or Subjecthood$^-$, with respect to an **A**-entity corresponds to the **B**-entities that Dietrich calls *properties*, a topic he elaborates on in paragraphs (8) through (17). The central aspect with respect to these **B-**entities is that they are not accidents proper, except if we consider **A**, the entity to which they belong, as a *subject* and its formal notion as a *cause*. In effect, in *De origine* I, they were seen as having solely IN-causes, namely the form of the **A**-entities to which they belong (cf. Fig. 8). This accounts for my specifying **A**'s subjecthood as Subjecthood$^-$, where the superscript "–" denotes a diminished (in any case: minimal) form of subjecthood. But, as a matter of fact, these **B-**entities are divided into two subtypes, according to the following specification:

Type **1.1:** These **B**-entities are in an **A**-entity in terms of its essence in itself and absolutely, and they may entail a deprivation in **A** if removed or absent. The one and the many, which take their entitihood from the number, are here the first kinds; then, the other **B**-entities of this type take their entitihood from the subject genus: a number can be even or odd, the equal and the unequal are taken from the one in quantity, and the similar and the dissimilar take their quiddity from the one in quality.

Type **1.2:** These **B**-entities are in an **A**-entity in terms of the latter's essence but with relation to something else. E.g., the cause and the caused; the active potency and the passive potency.

The main difference between Types 1.1 and 1.2 is that the former **B**-entities take their entitihood from the subject–for instance, even and odd take their entitihood from the number–, whereas the latter **B**-entities take their entitihood from the formal notion of the subject but with respect to something else. This difference is ontologically relevant in the sense that Type 1.2 specifies **B**-entities whose presence in an **A**-entity entails something *positively* in it, reason why Dietrich sees them as not being, but having the manner of, properties, whose absence may entail a *deprivation* in **A**. To make this distinction clearer, I propose we reserve the term *properties* for the **B**-entities of Type 1.1 and call those of Type 1.2 *quasi-properties*.

An important aspect is that in *De origine* I the properties were attributed solely to the simple essences, whereas now they appear to be attributed to natural entities without taking into consideration the ur-segregation of these entities into intelligible and sensible entities (see Fig. 8). Indeed, they are said to take their entitihood and

their quiddity from **A**-entities considered in terms of quantity and quality (see Type 1.1 above), which in *De origine* I were attributed to the sensible entities alone. Be it as it may–an important issue that cannot be discussed here–, they are said to have their causal origin solely in the human intellect. This is firstly said with respect to the Type-1.2 entities (cf. *De origine* II, 10), but in fact Dietrich generalizes this to all the Type-1 entities. Dietrich argues for an exclusive mental causality of the (quasi-)properties by appealing to (i) the final cause, (ii) the formal cause, and (iii) their proper character and nature: These **B**-entities are not the principle of a natural operation (i), they are not natural determinations of an **A**-entity (ii), and they are either a deprivation (a non-entity) or something positive for an **A**-entity, but their presence does not entail any natural transmutation–in fact, **A** may simply not exist at all, being a mere figment of human imagination (iii).

This is elaborated on in *De origine* II, 11-13; in *ibid.*, 14, Dietrich concludes that the "principle and cause"–i.e., both IN- and OUT-causes–of these Type-1.2 **B**-entities are to be attributed to the intellect *effectively*, to the substance or the essence of an **A**-thing *subjectively*, and to the notion (*ratio*) of an **A**-thing *originally and informationally*, where by "effectively" the efficient cause is meant, by "subjectively" Dietrich refers to an **A**-entity taken as subject, and by "originally and informationally" he conveys the fact that the notion or definition of an **A**-entity both gives origin to a **B**-entity and distinguishes it formally from non-being by *in-forming* it, or providing it with form.

So, it appears that Dietrich distinguishes here three causes for the **B**-entities of Type 1, to wit, the intellect, **A**'s subjecthood, and **A**'s notion. But, in fact, the two last ones are eliminated as causal origins of these **B**-entities for the reason that nature cannot distinguish between the thing-subject (*res subiecta*) and the notion of the thing-subject. As there are only two ur-causes, nature or the intellect, causality with respect to these Type-1 **B**-entities falls on the intellect. But, and importantly, if nature cannot distinguish between the thing-subject and the notion of the thing-subject, then subjecthood is a matter of the human intellect and it may be concluded that the **A**-entities of this Type 1 also have their causal origin in it, at least as far as their subjecthood is concerned (cf. Fig. 12). Figure 12 schematizes Dietrich's elaboration on the Type-1 **B**-entities. Note in this diagram the bidirectional character of causality, a crucial feature denoted by "$\Longleftrightarrow$".

$$\text{(Type 1)} \qquad \underbrace{\text{Subjecthood}^{-}\{}_{\mathbf{A}} \quad \underset{\text{FIRST INTENTION}}{\Longleftrightarrow} \quad \underbrace{\left\{\begin{array}{l}\textbf{Properties}\\ \textbf{Quasi}-\textbf{properties}\end{array}\right.}_{\mathbf{B}}$$

Figure 12: Type-1 entities and causality for Dietrich of Freiberg.

In *De origine* II, 15, Dietrich clarifies this intellectual causality by appealing to the Aristotelian distinction between the agent and the possible intellects (cf. Section 4.1.2), and ends up stating that it is a first intention that is at play in this causal-ontological relationship between both the **A**- and the **B**-entities of Type 1. On the other hand, this means that the categorial status of properties is logically indeterminate: They do not constitute a categorial genus, having an incomplete entitihood and

being solely properties of the ten categories. This logical status is related to a lesser ontological status, but if they are taken from an entity that is a natural determination of a thing, i.e. a quantity or a quality, then they have the full status of an entity, and hence constitute a categorial genus.[113]

4.2.3 Inherents and Adherents

Dietrich discusses the **B**-entities of Type 2 in paragraphs (18) through (32) of *De origine* II. They are specified according to the subjecthood of the corresponding **A**-entities, to wit, Subjecthood^0, where the superscript "0" is meant to denote the most basic full notion of subjecthood. These **A**-entities, we are straightaway told, are substances, and these **B**-entities, which are among the nine accidents, entail some natural thing with respect to them. Although we are told that the *qualities* and the *quantities* are here prominent, things are more complicated than the simple identification of these two accidents with the **B**-entities of Type 2.

In effect, Subjecthood^0 comes in a twofold way that is related to the twofold distinction of substancehood discussed briefly above in Section 4.2.1 in the following way (cf. *De origine* II, 19):

Type **2.1:** An **A**-entity acts as a subject for a **B**-entity that formally *inheres* to it, so that a single entity is constituted as from a subject (**A**) and a form (**B**).

Type **2.2:** an **A**-entity, in subsisting, sustains some nature or determination (a **B**-entity) *adhering* to itself.

I thus call these **B**-entities respectively *inherents* and *adherents*. Their relation to substancehood is as follows (cf. *De origine* II, 19-20): Type 2.1 has to do with substancehood in the sense of *substanding* (to some form), whereas *subsisting* is the notion of substancehood in Type 2.2. This distinction affects the **B**-entities in that they merely *in-exist formally* to a natural thing in the first case; they *exist simpliciter* in the second case inasmuch as they are natural determinations of a substance that, by subsisting in itself and essentially, is in an exceedingly formal way. Dietrich summarizes this distinction by saying that the **B**-entities of Type 2.1 *inhere* to a natural thing, whereas those of Type 2.2 *adhere* to it, the ontological difference being that in the first case the **B**-entities constitute a single entity with the **A**-entity to which they belong, but remain separate from the essence of the **A**-entity in the second. Interestingly, this means that the subject in Type 2.1 is in fact also something else besides being a support or substratum to the **B**-entities that in-exist formally to it, whereas the subject in Type 2.2 is wholly determined in its natural operations or changes by the **B**-entities, which work thus as its natural determinations (*dispositiones naturales*) as a substance.

Dietrich focuses largely on the adherents, which are accidents proper because they *happen* to the subject (the **A**-entity) as determinations, and because this is in fact their essence they can be considered substances by analogy and in a specific order of consideration (*ibid.*, 23-24):

[113] We had already been indirectly told about this in *De origine* II, 9: Some properties are taken from the one in either quantity (e.g., equal and unequal) or quality (e.g., similar and dissimilar).

(I) First, an entity that has an OUT-cause is constituted in being by its OUT-causes;

(II) its formal entitihood is then considered in it in terms of the quiddity and of the form (so, IN-causes);

(III) its natural property inasmuch as it is an entity is considered as a derivation from this formal notion.

The keywords here are "determination" and "natural property": In effect, Dietrich sees Subjecthood^0 as associated here with a natural cause, as these **B**-entities happen in a subject (*fiunt in subiecto*; the efficient cause) in relation to some end (the final cause) (*ibid.*, 22). Retaking the distinction in Subjecthood^0 with respect to the two abovementioned different conceptions of substancehood (in *ibid.*, 26-28), Dietrich then sees the **B**-entities of Type 2.1, or the inherents, as accidents proper and clearly distinct from the substance (the **A**-entity), and those of Type 2.2 as being even more formal than the substances if that which they are accidentally is considered, and as entailing in the substances certain natures that are "principles" of their natural operations or changes.

Although all the Aristotelian accidents firstly appear to be considered in Type 2.2, in fact this type is constituted only by the qualities and the quantities, which are now distinguished by the fact that the former are "principles" of such natural operations or changes both essentially and primarily, whereas the latter are so essentially but not primarily (cf. *ibid.*, 28-30). ("Principles," here, should be taken as denoting both IN- and OUT-causes.) This done, Dietrich raises the issue of the possible confusion of Types 1 and 2.2, but quickly dismisses it in paragraph (32) by appealing to two different reasons for which a **B**-entity takes its entitihood from an **A**-entity, to wit, by virtue of the notion of its quiddity from its formal notion as in an eliciting way (*quasi elicitive*) and according to its specific notion as in a subjective way (*quasi subiective*); in the former, human reason, which distinguishes between a subject or a thing and its formal notion, brings out (*elicit*) the **B**-entities and actualizes their entitihood, whereas in the latter it is nature, which does not have the distinguishing abilities of human reason, that determines different formal natures of determinate species with respect to different things solely according to itself, rather than from their specific nature or formal notion. These are respectively Types 1 and 2.2.

Summing up, by the end of the discussion of Type-2 entities we known that Dietrich considers the qualities and the quantities as the **B**-entities of Type 2.2, which belong to an **A**-entity that subsists by itself; they adhere to **A**, and for this reason I call them adherents. These **B**-entities are accidents, but they can also be seen as substances themselves. The **B**-entities of Type 2.1 are also–and solely–accidents but they belong to an **A**-entity that is seen as substanding with respect to them and with relation to which they inhere, reason why I call them inherents; we are not told exactly which of the Aristotelian accidents they might be. This distinction with respect to the notion of Subjecthood^0 entails, however, no distinction in causality: Both Types 2.1 and 2.2 appear to be originated exclusively from a natural act or operation. Figure 13, in which the bidirectionality of causality should be noted, summarizes the elaboration in *De origine* II, 18-32.

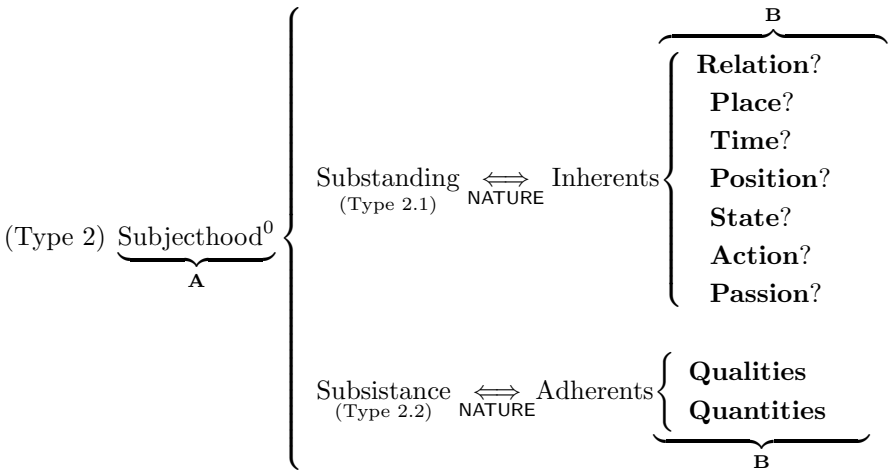

Figure 13: Type-2 entities and causality for Dietrich of Freiberg.

4.2.4 Relations

In *De origine* II, 34-54, Dietrich approaches the Type-3 **B**-entities, which are by and large–but not wholly–identified with the (Aristotelian) *relations*.[114] Figure 14 shows the general diagram for these entities whose causal origin was attributed to OUTIN-causes in *De origine* I (cf. Fig.s 6 and 8 above), an aspect that is at this stage however left open and indicated by means of an interrogation mark.

If we consider the entitihood of a **B-**entity as originating formally and in terms of subject from an **A**-entity as according to Subjecthood$^+$, then we consider some other entity (**C**) in **A**. We had already been told this, but now–in paragraph (34)–Dietrich introduces a key concept for these entities: They take their entitihood from an **A**-entity *in a completing way*. Also important is the fact that, contrarily to Type-2 **B**-entities, they do not entail any nature or any real determination in **A** taken as a substance proper, but their own notion entails some nature in **A** that it is necessary to consider.

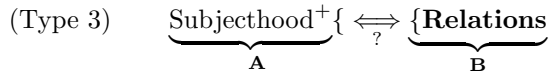

Figure 14: Type-3 entities and causality for Dietrich of Freiberg: A preliminary diagram.

Having been informed of this, we are told–in (35)–that not all the relative determinations are relations in the categorial sense here considered; more specifically, relations solely according to reason, or logical relations, are not to be taken in the categorial sense. This is the case when either the **A**-entity is a subject only accord-

[114]See Section 2.3 above.

ing to reason, or the correlatives are distinct solely according to reason, as when the same thing is related to itself under the same relation.[115] Although we are not given concrete examples, it is obvious that Dietrich is excluding reason alone as the causal origin of the **B**-entities of Type 3. On the other hand, real relations are excluded from this type if the **B**-entities are related by their own essence and not by some nature in the subject: They are in fact not relations, being rather properties, i.e. Type-1 **B**-entities.

Dietrich then analyzes the relations in the context of Aristotle's Book V of the *Metaphysics*, in which relation is distinguished according to whether the correlatives do not necessarily belong to the same genus (**Type A** of relation) or do belong to the same genus (**Type B**); these two types are further subdivided according to whether the correlatives are relatives by themselves or one of them is a relative by itself and the other one is so accidentally. Table 1 summarizes this Aristotelian distinction as seen by Dietrich and provides the examples of each subtype given by him. Subtype **A.1** had already been given as an example of a quasi-property (cf. (10)), and subtype **B.1** comprises examples of both properties and quasi-properties (cf. (9)-(10)), which might lead us to conclude that the relations that are reduced to Type-1 **B**-entities are those in which the correlatives are relatives by themselves or essentially.

Table 1: Aristotelian relation according to Dietrich of Freiberg.

RELATION

A. CORRELATIVES NOT NECESSARILY BELONGING TO THE SAME GENUS		**B.** CORRELATIVES BELONGING TO THE SAME GENUS	
A.1. The correlatives are relatives by themselves or essentially	**A.2.** One of the correlatives is a relative by itself, the other is so accidentally	**B.1.** The correlatives are relatives by themselves or essentially	**B.2.** One of the correlatives is a relative by itself, the other is so accidentally
The cause and the caused	The measure and the measured	Active and passive; Equal and unequal	Knowledge and the knowable; Sensation and the sensible

But relations are more complicated than this, in particular when one tries to distinguish relations by reason vs. in reality and their implications in the manner–essentially or accidentally–in which the correlatives take part in them, it being the case that accidentality appears to be associated with reason alone. In paragraph (39), Dietrich begins a short theological "aside" on this topic that in fact aims at confronting Thomas Aquinas, for whom the accidental relation between God and the creatures–to use causal theological jargon–is solely intellectual, or by reason alone, namely because God is not a part of the created reality. Dietrich argues that if one correlative **E** is related in reality to another correlative **F**, then so is **F** related to **E**, whether accidentally or essentially so, i.e. both correlatives belong to the same class, because in

[115]This is what today is called a reflexive relation in mathematical jargon.

fact "the notion of that which is accidentally consists in a certain analogy with that which is essentially" (*De origine* II, 41).

It is hard to say what exactly is at play in this short theological "aside" that takes only paragraphs (39) and (40), because the notion of relation was heavily implicated in the Christian doctrine of the Trinity,[116] but from the viewpoint of the ontological categories it appears that Dietrich reiterates the theory that the accidents, if considered by analogy, are also substances, so that the former have no "lesser" ontological status with respect to the latter. This, in turn, might be a "maneuver" to put reason as a causal origin on the same ontological footing with the natural causes. In effect, in paragraph (41) he implicitly targets Thomas Aquinas, for whom there is a clear distinction between the entities as conceived by the human mind (*in anima*) and in the real world, or outside the human mind (*extra animam*); and the categories, in particular the accidents, were seen typically as mere beings of reasons, or things of second intention with a *fundamentum*, or foundation, in reality (*in re*), like the universals (genus, species, etc.) and even other (logical) constructs such as propositions and syllogisms. The notion of *fundamentum* was particularly problematic in the framework of the relations, as here they are taken as that which a subject of a relation is besides being a subject to the relation, i.e. that which it is substantially. In this context, for instance, and explaining Dietrich's explicit invocation of Augustine in paragraph (40), the Christian God was seen to remain as a *fundamentum* in the trinitary relation and hence not affected–i.e. changed–by being a subject to the different "persons" in the Trinity.

And, indeed, the notion of *fundamentum* is soon enough going to feature profusely in Dietrich's elaboration. Resuming his discussion of the relations in paragraph (42), Dietrich throws new light on his conception of the Type-3 **B**-entities when he characterizes them as "forms with an intrinsic origin," meaning by this that they do not take their own entitihood from the relation in which they are with respect to **A** and, in this, **C**. So, the conclusion follows: The relations are in fact either properties of something natural, i.e. Type-1 **B**-entities, as summarily defended in (44), or they are real qualities and quantities (Type-2(.2) **B**-entities),[117] inasmuch as they are brought out according to something's form and definitive reason, it being the case that this "something" is in fact a natural determination (a **C**-entity) of a substance (**A**), as elaborated more at length in (45)-(46). In paragraph (47), Dietrich summarizes the reduction of the relations to, on the one hand, the **B**-entities of Type 1, and, on the other hand, the **B**-entities of Type 2(.2), by invoking the one as both a natural property of a substance (i.e. when the **C**-entities in **A** are not considered) and taken in terms of continuous quantity–a **C**-entity–with respect to a physical substance (**A**), respectively.

This done, Dietrich starts a short elaboration that appears to aim at establishing that the accidents are in fact things of first intention. The "trick" is to consider them by a *double analogy* with the substance, and this with respect to Subjecthood$^+$: In this, we know that a **B**-entity is originated not directly from the **A**-entity, which is a

[116]See, e.g., Thom (2011) for a brief introduction with references to sources.

[117]This roots partly in Aristotle's *Categories*, namely in the fact that for him what is distinctive of quantity is that two entities can be equal or unequal with respect to each other as far as quantity is concerned, and the same reasoning applies to quality if similarity and dissimilarity are considered (*Cat.*, 6a26 and 11a15, respectively), but, equal and unequal are relatives (cf. **B.1**-relatives in Table 1), and the same holds for similar and dissimilar.

real entity, but from (the formal notion of) a **C**-entity that is in **A** as an accident or as a natural determination (the *second analogy*). Just as in the same way that this **C**-entity is a natural entity by a *first analogy*, though a remoter one with respect to the substance (**A**), a Type-3 **B**-entity can be said also to be a natural entity.[118]

This abstruse explanation can become clearer if we invoke Aristotle's division of the substance into first and second (see Fig. 4 above): The genus (e.g., animal) and the species (e.g., man, horse) are the formal notions of a first substance (e.g., and respectively, the individual man and the individual horse), so that by analogy they are substances, too, even if perhaps in a "remoter" way with respect to the first substance. It so happened that the second substances were seen as things of second intention, or mere beings of reason (see Fig. 10), but Dietrich seems to want to reject this received interpretation of the Arabic doctrine of the intentions, and he does so in *De origine* II, (49)-(53), by appealing to the notion of foundation and by analyzing the way terms are used in philosophical discourse, a much used Scholastic method.

According to Dietrich, it can indeed be said that the reality of the relations is but the reality of their foundation, as held by, for instance, Henry of Ghent and Richard of Middleton, but one has to focus on the meaning of the terms "thing" (*res*) or "reality" (*realitas*) both taken as a countable noun and as interchangeable: If by these one means some nature or some natural determination, then the reality of these entities is but the reality of their foundation, or the substance they belong to, namely because accidents are substances by analogy, as seen above, and if by these terms one means "whatever in whatsoever manner is according to the notion of whatsoever formal act, thanks to which notion it is a thing of first intention" (*ibid.*, 51), then again the reality of the accidents as categories, or real accidents, and that of the substance from which they take their entitihood is the same; in both cases, and thanks to the notion of foundation or *fundamentum*, they have their causal origin in a natural act. *But* if one focuses on the formal meaning of these terms, by means of which an entity firstly differs from non-being or nothingness, then their cause is an intellectual operation, because only the intellect can distinguish between a thing and its notion, from which it brings out or produces the very thing itself. This shows that the likes of Henry of Ghent are not entirely correct; indeed, they are considering the accidents as categorial entities according to the sole designation.

Figure 15 shows diagramatically the end result of Dietrich's elaboration on the relations as Type-3 **B**-entities that reduces them to both the Type-1 **B**-entities and the Type-2(.2) **B**-entities (quantities and qualities). Importantly, nature as a causal origin is entirely eliminated from this causal-based schema, leaving the intellect alone, namely the first intention, as causal origin of the relations. (Compare Fig. 10 with Fig. 13.) One might thus wonder whether this quite long and tortuous elaboration aimed at the removal of nature as a cause, rather than at the reduction proper of the relations to **B**-entities of Types 1 and 2.

As shown in Figure 15, we still do not know whether the relations are also reducible to Type-2.1 **B**-entities, which, in turn, are also not yet clearly identified.

[118]See Section 4.2.3 for the first analogy. In this, the Type-2 **B-**entities are taken as natural entities, because they have their causal origin in nature (cf. Fig. 13). Even if they are "remoter" natural entities in the sense that they are accidents or natural determinations of a natural entity that is a true entity (an **A**-entity), by the first analogy with these substances they are also substances.

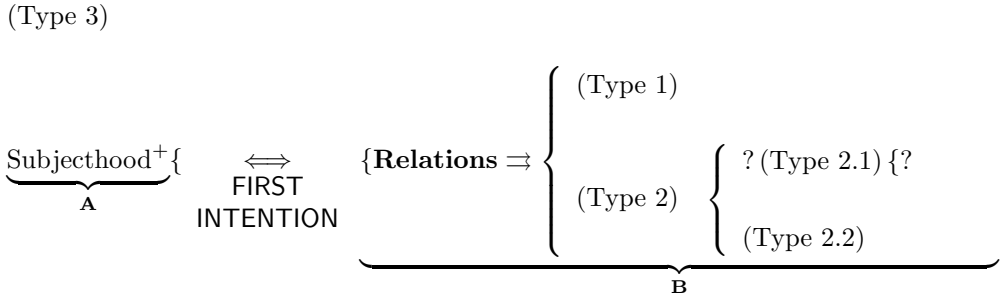

Figure 15: Type-3 entities, causality, and reduction for Dietrich of Freiberg: A provisional diagram.

4.2.5 The Remaining Aristotelian Accidents–And the Relations, Again

In what remains of *De origine* II, Dietrich addresses the **B**-entities of Type 4, characterized in terms of subject by Subjecthood^{++}, in which the double "+" denotes an additional entity to be considered as compared to Subjecthood^{+}. This is evident in Dietrich's own definition, which I annotate for the sake of analysis. This is the type in which

> there is an entity [**B**] because it belongs to an entity [**A**] in terms of subject, but according to something else [**C**] that is considered in that same subject, and originally from the notion of another entity [**D**] that is different from the subject. (*De origine* II, 55)

Dietrich illustrates this definition by appealing to place as a category: *Place*, the **B**-entity under consideration, belongs to a corporeal *substance* (the **A**-entity) in terms of subject thanks to its (**A**'s) *dimensions* (the **C**-entity); but before anything else the **B**-entity is in **A** in terms of the *containing place* (the **D**-entity), which is different from the subject (**A**). Importantly, the dimensions are by nature prior to the very substance, the same being said about the containing space that so to say delimits the substance as a body, and thus these **B**-entities have natural causes in their origin; but their formality is attained by the *relation* (a Type-3 **B**-entity) they have to the subject to which they *inhere* (a Type 2.1 **B**-entity; cf. Fig. 13). So, we have here a reduction of the Type-4 **B**-entities firstly to the Type-3 **B**-entities and secondly to the Type-2.1 **B**-entities, and we can delete the interrogation marks in Figure 13 above. Figure 16 shows the reduction of the six accidents that are the Type-4 **B**-entities to relations that in turn are reducible to Type-2.1 **B**-entities.

But this takes us to yet another revision: There are in fact two subtypes of relations, to wit, those that are reducible to properties (Type-1 **B**-entities) *and* to the Type 2.2 **B**-entities, constituted by the adherents (qualities and quantities), and those that are so to the so to Type 2.1 **B**-entities, or the inherents.[119] Figure 17 shows this subdivision of the relations for Dietrich. Because we had already been told that the

[119]This is my interpretation, which makes me translate "*insunt*" as "inhere" in these paragraphs. This interpretation is accounted for the fact that without this reduction, the set of inherents–Type-

(Type 4)

$$\underbrace{\text{Subjecthood}^{++}}_{\mathbf{A}}\{ \underset{\text{NATURE}}{\Longleftrightarrow} \underbrace{\left\{\begin{array}{l}\textbf{Place}\\ \textbf{Time}\\ \textbf{Position}\\ \textbf{State}\\ \textbf{Action}\\ \textbf{Passion}\end{array}\right\} \rightrightarrows \textbf{Relations}\left[\rightrightarrows \ \text{(Type 2.1)}\ \right]}_{\mathbf{B}}$$

Figure 16: Type-4 entities and causality for Dietrich of Freiberg.

causal origin of the relations is to be found in the intellect, namely as a first intention, natural causality is actually eliminated in this reduction.

(Type 3)

$$\underbrace{\text{Subjecthood}^{+}}_{\mathbf{A}}\{ \underset{\text{FIRST INTENTION}}{\Longleftrightarrow} \underbrace{\{\textbf{Relations}\left\{\begin{array}{l}\text{(Type 3.1)} \rightrightarrows \left\{\begin{array}{l}\text{(Type 1)}\\ \text{(Type 2.2)}\end{array}\right.\\ \\ \text{(Type 3.2)} \rightrightarrows \left\{\text{(Type 2.1)}\right.\end{array}\right.}_{\mathbf{B}}$$

Figure 17: Type-3 entities and causality for Dietrich of Freiberg.

As said above, these reductions entail the fact that the **B**-entities of Types 3 and 4 do not constitute a proper genus of category, or are not fully categories. Dietrich ends the text of *De origine* II precisely with an account of this aspect that is likely to attract criticism (cf. paragraphs (59)-(62)).

5 Summing Up and Some Final Considerations

Dietrich's foundational ontology as extracted from the analysis above of *De origine* I-II is shown in Figure 18. A central feature of this ontology is that it is based on Aris-

2.1 **B**-entities–would simply be left as an empty set, which does not agree with Dietrich's short elaboration thereon in paragraph (19); moreover, in paragraph (20) Dietrich uses "*insunt*" to characterize these **B**-entities. Additionally, in *De origine* I, 28, Dietrich anticipates this reduction when he writes (my italics): "According to this notion of inhering, out of such a form and a subject an entity is created *accidentally*, or *relatively*, whose principle, in that it is such an entity, is not only the subject but in fact the inhering form, precisely rather the very form, as it is in terms of the act the principle of such an entity." This distinguishes the inherents from the adherents (Type-2.2 **B**-entities), which are consistently characterized as being natural determinations of an **A**-entity.

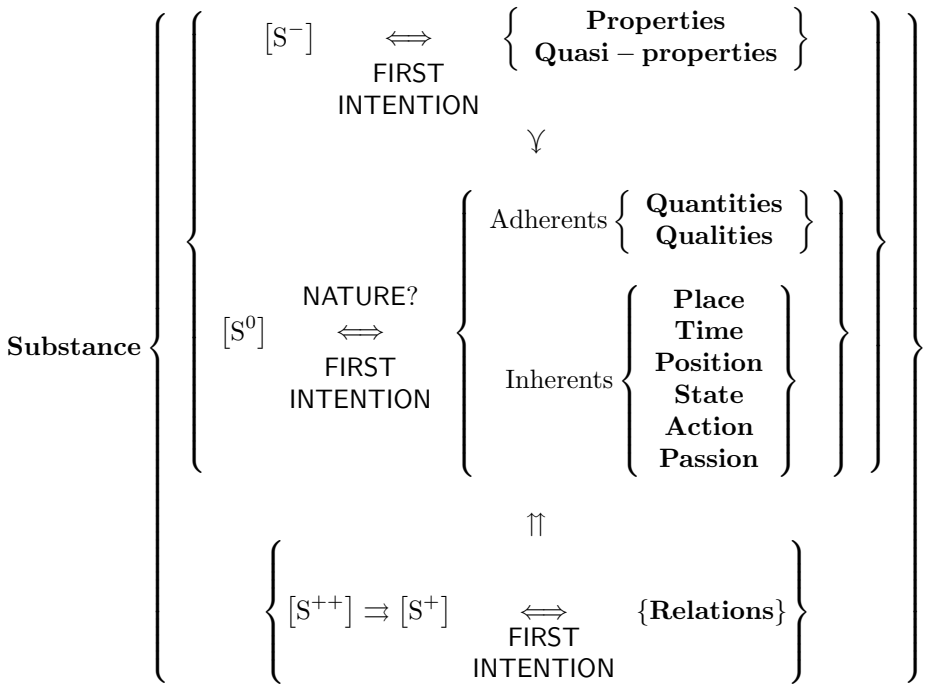

Figure 18: Dietrich's foundational ontology as extracted from *De origine* I-II. ("S" abbreviates "Subjecthood", and the symbol "⇉" denotes reduction, namely in the sense of the arrows. The symbol "⋎" denotes an ontological association that is not a reduction.)

totle's theory of the categories, which was elaborated on mainly in his *Categories* and *Metaphysics*, with a few bits in his *Topics*; hence, we can say that this is a *revisionary* foundational ontology if seen from today's ontology-engineering perspective. As R. Pinzani (2021) puts it in a commentary on Augusto (2021), "Aristotle's categories ultimately have limited or no utility, even understood as a system of grammatical classification." That much is true, the importance of Aristotle's theory of categories is not to be found on these ontological constructs per se; rather, it is the fact that Aristotle firstly saw it as the task of the philosopher to produce an inventory, both exhaustive and exclusive, of what (there) is that is of import–now also outside the restricted circle of philosophers.

Dietrich of Freiberg is a good example of the philosopher taking over this task: He did not simply adopt a theory he clearly saw as authoritative; he adapted it, and he did so in unexpected ways. To begin with, he (i) introduced a new category, to wit, the (quasi-)properties, so that his starting point is an extension of Aristotle's theory (see Fig. 19); additionally, he (ii) carried out a partition of the Aristotelian categories based on an original interpretation of subjecthood, and (iii) proceeded to consider inter-reductions between these subsets of categories. Besides these, Dietrich also considered a special ontological association between the (quasi-)properties and the adherents (and inherents?) that is not a reduction, even if he speaks of the former considered as adherents in some cases.

As seen above, this reductionism in the context of the Aristotelian categories was not new, some influential medieval philosophers having attempted to reduce them in number, but Dietrich went as far as he could in his reductionism: All the entities are substances, whether per se or by analogy; any entity either is in itself, or is *in*–or *belongs to*–another entity by analogy with which it is also per se or in itself. Thus, what we have here is a *reductionist* foundational ontology in the literal sense of the term. In effect, the ontological status of all the "entities that belong to an entity" is such that they end up being simply reduced to the very substances they are said to belong to via two analogies, first and second. In other words, all the accidents, or entities that are in substances either by adherence or inherence, and the properties are subsets of substance. These two aspects, revisionism and reductionism, agree with ontological commitments in late medieval philosophy taken in a very general perspective (see Augusto, 2021).

$$\mathscr{P}^{*}\left(Categories\right)_{\text{Dietrich}} = \underbrace{\{\text{substance}\} \cup Accidents}_{\mathscr{P}(Categories)_{\text{Aristotle}}} \cup Properties$$

Figure 19: Dietrich's categorial ur-partition in *De origine* II.

But, in fact, Dietrich had something up his sleeve ready to be exhibited only in *De origine* II: If substance is all there is, namely first substances or particulars, then all there is has its causal origin in the human mind, namely as a first intention, because substancehood is tightly connected to our own conception of subjecthood. Thus, in fact his can (also) be seen as a *descriptive* foundational ontology, particularly so when we are left undecided whether the substances, too, are not also a product of the human mind.

This, however, would require the elimination of nature as a causal origin with respect to the Type-2.2 **B**-entities, or adherents, which have consistently been causally attributed to nature, or to OUT- and IN-causes throughout parts 1 and 2 of *De origine*. The Type-1 **B**-entities, which in *De origine* I had their causal origin in nature, namely in the form or in an IN-cause alone (cf. Fig. 8), are now attributed to a mental act and seen as first intentions. This strategy is somehow more complex in the inherents, or **B**-entities of Type 2.1; they had been directly attributed to OUTIN-causes in *De origine* I, but in this second part he firstly attributes to them a natural causation to then, by reducing them to some of the relations, to wit, those **B**-entities of Type 3.1, to change this to a mental causation. The main role in this complex foundational partitioning belongs to the relations, or Type-3 **B**-entities, which find a central place in this ontology (see Fig. 18); this centrality captures the fact that all there is for Dietrich of Freiberg are substances and relations in, or among, substances, where these relations are mind-, rather than nature-made.

By comparing Figures 8 and 18, it can be easily seen that Dietrich's foundational ontology has undergone a major simplification from parts 1 through 2 of *De origine*. Interestingly, this simplification is mostly structural, as its contents are essentially the same.[120] I show the further developments in Dietrich's ontological investigations in my forthcoming analyses of *De origine* III through V.

Acknowledgments

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[120]Excluded from *De origine* II are solely the quintessences, originally called intelligences by Dietrich, which can be accounted for by the fact that they have no **B**-entities, reason why they do not act as a subject and thus are removed from a foundational ontology based on subjecthood.

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