

Category errors as a structural principle of philosophy

Abstract

This paper identifies and analyzes systematic category mistakes that pervade classical and contemporary philosophical debates from antiquity to the present, structuring discussions in ontology, epistemology, philosophy of mind, and ethics. Six fundamental types of category errors are distinguished: ambiguity of central concepts; conflation of descriptive levels; substantive reification of processes; confusion of syntax with semantics; ungrounded metaphysical assumptions; and ontologization of normative values. Through classical and modern examples, it shows how unmarked shifts between logical levels generate theoretical confusion, misleading metaphysical claims, and conceptual puzzles. The diagnosis reveals that many current scientific and philosophical theories revive old category errors in new forms under the guise of exact sciences, particularly in cognitive science, artificial intelligence, and neuroscience. The paper argues for establishing "category hygiene" as a methodological principle that clarifies conceptual distinctions, avoids illegitimate ontological claims, and grounds philosophy more firmly in critical reflection and empirical engagement. This approach aims to revitalize philosophy's critical role by dispelling persistent confusions rather than generating novel metaphysical systems.

Introduction

The errors identified here permeate classical philosophical debates from antiquity to the present and also structure contemporary discussions in ontology, epistemology, philosophy of mind and ethics. They emerge from various systematic sources: the unmarked ambiguity of central concepts that play different logical roles in different contexts; the systematic confusion of levels of description, in which epistemic structures of our cognition are treated as ontological properties of the world; the linguistically motivated substantiation of flowing processes, which transforms processes into things; the equation of syntactic forms with semantic content, which identifies formal structures with meanings; metaphysical positions without sufficient derivation, which turn methodological principles into ontological facts; and finally the ontologization of moral norms, which treats historically created values as characteristics of the world.

The diagnosis of categorical confusion is by no means new, but its systematic implementation and application to contemporary theories is still pending. Ryle (1949) coined the term category error to criticize traditional body-soul metaphysics. Ryle's central insight was that mental terms do not denote entities in a spiritual realm, but dispositions to describe behaviors.

Wittgenstein (1953) showed in his later works that many philosophical sentences are based on a false picture of how our language works. Wittgenstein's famous metaphor of language as a "toolbox" was intended to illustrate that philosophical problems often arise when words are removed from their usual context of use and used in a foreign, usually metaphysical context.

Logical positivism, especially in the works of Carnap (1934), tried to base philosophy on logical syntax and to solve philosophical problems through language reform, but in doing so it often confused form with content and overlooked the fact that syntactic correctness does not automatically guarantee semantic clarity. But even critique has reached its limits when it in turn leads to unmarked changes of level, reifications and unfounded metaphysical assumptions.

In contemporary philosophy, the old patterns are repeated under new, often scientific-sounding names: information-theoretical ontologies transform Shannon's mathematical information theory into a metaphysics of the universe; neurocognitive theories of consciousness identify mental phenomena with brain states without taking into account the categorical differences between different levels of description; naturalistic or anti-naturalistic justifications of morality treat normative validity as an empirical fact or as a metaphysical property. What's more, in contemporary cognitive science, artificial intelligence and neuroscience, new variants of old category errors are constantly emerging, which are all the more seductive because they adorn themselves with the prestige of exact science.

In order to convincingly substantiate this far-reaching thesis, a systematic analysis is required, which first precisely determines and distinguishes the different types of errors from each other, plays through paradigmatic examples from different philosophical epochs and disciplines, and shows how critics have already named and worked on these errors. In the following, a distinction is made between six basic types of errors, each of which is developed using classical and modern examples. The goal is to establish a kind of "category hygiene" that exposes historical misunderstandings and shows how the same confusions occur in modern philosophical and scientific theories in a new form.

1. Ambiguity of categories

The first and perhaps most basic type of category error is the unmarked ambiguity of central philosophical terms. The ambiguity seems to give philosophical arguments an impressive breadth and theoretical depth that they do not possess, because their supposed stringency only comes about through the unnoticed change of the categorical level. What appears to be a unified theoretical movement turns out to be a leap between different logical areas on closer analysis.

Frege (1892) had already uncovered the logical structure of this problem. Frege's famous Morgenstern-Abendstern example is far more than a logical gimmick. It illustrates a fundamental problem that arises when no distinction is made between the meaning of an expression and its meaning. The morning star and the evening star have the same meaning, as they both denote the planet Venus, but different senses, as they express different ways of the given of this planet. Without the sharp distinction between meaning and meaning, systematic fallacies arise that could be avoided by conceptual clarification. On closer inspection, the supposed ontological depth of such sentences turns out to be a linguistic artifact that results from the confusion of different semantic levels. This passage from Frege's work has often been received too superficially, so that its actual philosophical punch line is easily overlooked. The example of the morning star and the evening star in particular clearly shows that without this categorical distinction, systematically wrong conclusions are drawn. A person who believes that the morning star is a planet, but the evening star is not, does not have contradictory beliefs about one and the same object, but moves on the level of different senses of the same object. The category error lies precisely in equating the level of meaning with that of meaning and overlooking the fact that identity of meaning does not imply identity of meaning. This has far-reaching consequences for philosophical theories, which otherwise construct sham debates about identity and difference, where it is only about different levels of linguistic expression.

Heidegger (1927), on the other hand, takes ambiguity in his main work so systematically that the central expression "being" functions at the same time as an ordinary grammatical auxiliary word, as a fundamental metaphysical basic category and as an existential-analytical guiding concept of the analysis of Dasein. For Heidegger, this simultaneity of different functions is a rhetorical device or stylistic idiosyncrasy and a deliberate philosophical method, since it enables him to switch between different levels of meaning without explicitly marking or justifying this change. From an initially hermeneutical question about the understanding of being, a comprehensive ontology of existence is thus developed step by step. The reader gets the impression of continuous theoretical progress and an increasing deepening

of the analysis, while a complex shadow casting of language emerges, which systematically blurs the categorical boundaries and allows the terms used to slide between different logical levels. Heidegger's use of the term "being" is an idiosyncratic linguistic peculiarity and methodologically highly significant for his entire philosophical project. In this one multi-layered expression, he combines the everyday of our ordinary use of language, the logical-formal of traditional metaphysics and the transcendental of a fundamental ontological analysis. This connection is extraordinarily suggestive to the reader, because it gives the impression that there is a single great and unified question of "being," ranging from everyday talk about what is to the highest metaphysical speculation. but it is a matter of several systematically different questions of different categorical order: the grammatical function of the copula, the logical structure of the statement of existence, the ontological question of the reason for existence, and the existential analysis of existence are categorically different problem areas.

The fundamental error lies in linking these categorically different questions together by the same ambiguous expression in such a way that they appear like aspects of a single, unified ontological fundamental question, while they are located on different logical levels. The central term "awareness" here systematically oscillates between at least four different meanings: access awareness, which refers to the availability of information for reporting, planning, and control; phenomenal experience, which denotes the qualitative dimension of subjective experience; self-awareness, which includes the ability for self-referentiality and self-reflection; and waking consciousness, which describes the neurological state of wakefulness and attention.

The systematic confusion of these categorically different senses creates debates that end up talking past each other without the participants being aware of it. For example, when the reportability of a visual stimulus is tested in experimental paradigms, it is clearly an investigation of access awareness, i.e. the question of the conditions under which information becomes available for cognitive processes.

However, this often leads to a far-reaching thesis about phenomenal experience, as if accessibility and qualitative experience were identical or necessarily linked. The Global Neural Workspace Hypothesis by Dehaene (2014) initially claims nothing more than that mental content can then be consciously reported, planned and integrated into actions when it reaches a certain neuronal availability in a global workspace. This is a precise and testable hypothesis about the neural conditions of access consciousness. But Dehaene tacitly identifies this functional accessibility condition with consciousness in general when he formulates that a conscious thought is, by definition, one that has entered the global neural workspace, where it

can be used by many specialized cortical processors. In this way, a purely functional concept of cognitive availability is impermissibly extended to a phenomenal category of experience. The category error lies precisely in this unmarked shift between different meanings of "consciousness" belonging to different logical categories.

This category error is by no means harmless or only of academic interest. He suggests that consciousness as a philosophical problem is essentially solved, or at least solvable, if its neuronal conditions of access have been empirically described. Critics such as Block (1995) have therefore theoretically clarified the systematic distinction between "access consciousness" and "phenomenal consciousness" and empirically shown that the experimental operationalization of one is not automatically suitable for explaining the other. The consequence of the categorical confusion is a theoretical pseudo-coherence, which is created by the unnoticed reversal of levels and which, if it is not explicitly addressed and criticized, leads to a systematic theoretical self-deception: that which is philosophically questionable is presented as empirically solved with the help of a conceptual shift.

Thus, the dispute between different theories of consciousness remains productive and theory-heavy, but replaces the necessary conceptual differentiation work with semantic elasticity and conceptual fuzziness. Sentences such as "The homunculus in the brain is tired" seem paradoxical or contradictory at first glance, because in them the assertion of existence, predication and definite identification categorically coincide without this entanglement being consciously reflected. The classical analysis of definite description (Russell 1905) shows that the apparent contradiction actually stems from a mixture of different logical categories, which is obscured by the surface grammar. Formally disassembled, the sentence asserts three things: (1) the existence of a "homunculus" in the brain, (2) the uniqueness of this homunculus, and (3) the attribution of the property "tired" to it. Since (1) already fails, the overall statement – read under the internal negation – is false or (in Strawson's presupposition model) untruthful; the external negation ("It is not the case that ..."), on the other hand, is unproblematically true. Didactically, this example is fruitful because it makes visible the homunculus error that is widespread in the philosophy of mind: a metaphorical internal figure is ontologized and then assigned psychological predicates. This is exactly what leads to hidden dualisms and regresses, while adequate modeling – as in your approach – explains phenomenal states without internal agents from large-scale integration (collapse of previously separate functional islands) in real biological systems.

Tarski demonstrates that semantic paradoxes such as the liar's paradox only arise when different linguistic levels are inadmissibly mixed. Only through the clear

marking of the differences between object and meta language do seemingly profound logical contradictions disappear and turn out to be products of categorical confusion. What initially appears to be a fundamental problem of the theory of truth resolves itself through categorical differentiation into a technical problem of correct level marking. Modern variants of the same categorical confusions are found throughout the contemporary philosophy of mind, when central concepts such as "self", "ego" and "self-model" are treated alternately as an empirical object of neuroscientific research, as a formal relation of logical analysis or as a functional mechanism of cognitive science theories, without these categorical differences being marked.

Metzinger (2003), for example, in his theory of the phenomenal self-model, uses the term "self" both as an empirical explanandum (that which is to be explained) and as a theoretical explanan (that with which is explained), without reflecting on this categorical dual role. Without a precise fixation of the respective logical role, the argument systematically slips between different levels of abstraction and creates ontological illusions that arise from conceptual confusion but are passed off as substantial discoveries about the nature of consciousness.

2. Swapping of description levels

The second fundamental type of error is the systematic exchange of different levels of description, which occurs when epistemic structures that make our cognition possible in the first place are treated unreflectively as ontological properties of the recognized world, or, conversely, when ontological assertions are passed off as epistemic necessities. Kant (1781/1787) defined space and time in the "Critique of Pure Reason" as pure forms of sensual intuition and the categories as pure concepts of the understanding, which underlie every possible experience as its conditions. In the famous formulation from transcendental logic, it says: "Thoughts without content are empty, perceptions without concepts are blind." Kant's formulation has rightly become famous, but its precise theoretical content is often inadmissibly abbreviated or misunderstood in reception. With this definition, Kant wants to point out that pure thinking alone, without reference to sensual perception, remains empty because it lacks the concrete material of experience in which it could prove itself. Conversely, sensuous intuition is blind without the ordering concepts of the understanding, because without conceptual form it has no recognizable structure. This is a methodical determination of the transcendental conditions of possible experience, not a statement about the metaphysical nature of things in themselves. However, anyone who reads these transcendental conditions as ontological properties of things themselves commits the fundamental mistake of reinterpreting an epistemic principle into a metaphysical one. It is precisely this systematic

misinterpretation that has shaped large parts of post-Kantian philosophy and led to the speculative systems of German idealism, which developed far-reaching metaphysical theories about absolute reality from Kant's critical insights into the conditions of knowledge. What was conceived by Kant as a condition of the possibility of experience is hypostasized by his successors to the structure of reality itself.

Husserl (1901/1913) described the intentionality of consciousness as a methodological prerequisite for phenomenological analysis with the famous formula: "Every consciousness is consciousness of something." However, this formula is often misunderstood as describing an ontological property of consciousness itself, a kind of psychic radiance or mental directionality that belongs to consciousness as an empirical phenomenon. but Husserl's principle of intentionality does not designate an ontological property of consciousness, but a methodological insight into the analytical structure of intentional experiences. This methodological intentionality states that consciousness cannot be considered phenomenologically in isolation, but must always be analyzed only in its structural reference to intentional objects. Husserl's famous formula is therefore by no means an empirical statement about the factual being of consciousness, but a methodological rule for phenomenological analysis. It is intended to make it clear that consciousness cannot be analyzed as an isolated psychic substance in a vacuum, but always becomes thematic in its structural relation to something. Here, intentionality is a methodological structural moment of phenomenological analysis: it marks the analytical insight that an intentional experience can only be adequately described phenomenologically if its constitutive reference to the object is methodologically considered.

This is systematically misunderstood when intentionality is read as a real property of consciousness itself, as if it possessed a natural radiance or directedness that is directed towards objects on its own. Rather, the principle of intentionality is intended to encourage the analyst to reflect on his own analytical procedure and to keep an eye on the constitutive correlation of noetic and noematic moments. The category error arises precisely when one interprets the methodological principle of phenomenological analysis as an ontological fact about the nature of consciousness. This creates a false ontology of the mental, which turns a method of description into a metaphysical predicate of being. What was intended as a methodological rule for the analysis of intentional structures is repurposed into an empirical assertion about the nature of consciousness.

This confusion has far-reaching consequences for the later development of phenomenology and its reception in other philosophical traditions. Quine (1951)

develops a fundamental critique of logical empiricism by showing that the seemingly clear distinction between analytic and synthetic truths is a theoretical illusion. Quine's famous thesis is: "Any statement can be held true come what may, if we make drastic enough adjustments elsewhere in the system." He thus exposes that the supposedly sharp boundary between conceptual truths and empirical facts has no absolute epistemic basis, but depends on pragmatic decisions made within a holistic system of theory. Here, too, it is an example of how systematically philosophers switch between different levels of description without explicitly identifying or justifying this change. Sellars shows that every perceptual judgment, even the seemingly most immediate, is already situated in the "space of reasons" and receives its epistemic justification only through its role in a system of justification relations. What appears to be an immediate given is always already conceptually structured and normatively impregnated. Anyone who fails to recognize this and treats immediate reality as an epistemic basis categorically confuses different levels of description: the causal level of the emergence of beliefs and the normative level of their justification.

The Free Energy Principle by Friston (2010) illustrates this systematic confusion of levels of description in contemporary theoretical neuroscience with particular clarity. Originally, "free energy" is a precisely defined mathematical quantity that serves as an upper bound for the surprise or uncertainty of a system in statistical physics and information theory. Friston now applies this mathematical quantity to biological systems, claiming that all self-organizing biological systems must necessarily minimize free energy to maintain their structural integrity. Especially with the Free Energy Principle, the category error is instructive and far-reaching. The mathematical concept of free energy is originally a heuristic tool of modeling to describe and handle model uncertainties in complex systems. If it is applied to biological systems, then initially only as a theoretical approximation and explanatory hypothesis for certain adaptive processes. But Friston systematically goes beyond this, treating the minimization of free energy no longer as a useful modeling assumption, but as a real biological purpose of organisms, as a universal principle of life that explains the evolution and behavior of all living systems. This is a classic level confusion: what counts as mathematical identity within a specific theoretical model is passed off as an ontological property of the modeled world.

The critique of Colombo and Wright (2021) makes it clear that this level confusion leads to a problematic tautology, because in principle any behavior can be explained retrospectively as minimizing free energy. The actual empirical explanatory power is thus lost, because the principle becomes too general to enable specific predictions or to generate falsifiable hypotheses. Here, different levels of description are

systematically inadmissibly mixed: the physical level, on which free energy is defined as a thermodynamic quantity; the mathematical level, where free energy acts as an information-theoretic measure of uncertainty; the semantic level, where uncertainty is understood as an epistemic concept; and the biological level, where adaptive processes are analyzed as a functional organization. The fundamental confusion lies in deducing the causal or teleological structure of the modeled biological processes from the mathematical identity of different quantities within the model. Strictly speaking, the minimization theorem only applies within the mathematical model; it does not logically follow from it that organisms minimize in empirical reality, and even less that they pursue this as a conscious or unconscious teleological purpose. If the categorical boundary between the theoretical model and empirical reality is systematically missed, an explanatory theory tautology emerges: In principle, every behavior becomes explainable, because every observable behavior can subsequently be relabeled as a specific form of minimization.

Colombo and Wright (2021) therefore rightly criticize that the Free Energy Principle in its universal application explains "everything and nothing" and is difficult to falsify empirically because it inadmissibly mixes different logical levels of explanation and thus loses its scientific precision. The category error is clearly evident in the systematic teleological charging of mathematical minimization. A formal property of the theoretical model is reinterpreted as a normative or purposeful property of the biological system. Thus, the originally methodological question of how certain models work and what aspects of reality they can capture shifts imperceptibly into the ontological assertion of how the biological world must be structured for the model to be applicable. The systematic exchange of levels of description includes the theoretically consequential transition from transcendental conditions of knowledge to ontological properties of the recognized world and the constant and mostly unreflected switching back and forth between different levels of explanation within the empirical sciences themselves. Marr (1982) has shown this exemplarily using visual perception by systematically distinguishing between three different levels of analysis: the computational level of the task (which problem needs to be solved?), the algorithmic level of information processing (how is the problem solved?) and the implementation level of neural hardware (how is the problem solved?). Marr's distinction is taxonomically useful and theoretically fundamental because it shows that explanations at different levels are not logically translatable into each other. However, many philosophical and scientific-theoretical interpretations of neuroscientific findings ignore such systematic stratifications and, for example, invoke a specific property from the neuronal implementation level as a direct argument against a functional theory at the algorithmic level, or vice versa.

A classic example is the assumption that the discovery of specific neuronal correlates of a cognitive process automatically shows that functional or computational descriptions of this process are superfluous or incorrect. Sellars' influential critique of the "myth of the given" also marks a fundamental categorical level boundary between the causal order of nature and the normative "space of reasons". What appears to empiricist philosophers as an immediately given sensory basis of knowledge is, on closer analysis, already situated in the space of reasons and receives its epistemic justification only through its systematic role in a network of justification relationships. Anyone who interprets the immediate givenness of sensory impressions ontologically and treats it as an epistemic foundation systematically overlooks the normative level of justification and confuses causal origin with logical validity.

Finally, it is worth taking a systematic look at the theoretically complex relationship between the scientific model and empirical reality in the modern natural sciences. Giere (2006) and Craver (2007) have shown in their work on the philosophy of science that scientific explanation takes place on different systematic levels and that mechanistic, functional and constitutional forms of analysis are intertwined without logically merging into each other or replacing each other. A scientific theory is inadmissibly absolutized epistemologically if it confuses its specific model-like scope with universal ontology and claims to grasp certain aspects of reality under certain conditions and to describe reality as such exhaustively.

A particularly instructive category error is also evident in the "extended mind" approach (Clark & Chalmers 1998), which systematically extends mental phenomena such as consciousness and intentionality to external artifacts and environmental conditions. The theoretical point of this approach is that those conditions that enable and coordinate consciousness (e.g. notebook, digital media, tools) are themselves declared to be a constitutive component of consciousness. In this way, the determinant (the explanatory medium) is entangled with the determinatum (the mental phenomenon to be explained). The categorical error consists in no longer treating the functional, historically contingent aids and environmental factors as prerequisites of the mental, but identifying them with consciousness itself. This mixing of levels and roles leads to a systematic blurring of the boundary between the subjective and its constitutive conditions. A consistent description requires a clear distinction between the means and conditions of possibility and the actual intentional or subjective phenomenon.

The autopoiesis concept of Maturana and Varela (1972) focuses on the dynamic, holistic organization of organisms with its system-theoretical description of the self-organizing and self-sustaining nature of living systems. At the same time, the

concept remains comparatively open in its operationalization, which leaves room for numerous later interpretations, especially in 4E cognitive research. These newer approaches often transfer systemic principles to cognitive phenomena without sufficiently marking the categorical differences between biological systems, cognitive processes and their environmental conditions. This gives rise to classically categorical errors, such as the confusion of constitutive presuppositions and constitutive content, which dilutes the original systemic sharpness of the autopoiesis concept and raises new ontological and epistemological problems (Clark 1997).

The philosophical gain therefore lies in the strict methodological marking of the change of level and in the theoretical refusal to make ontology directly out of methodological or empirical success. Without this categorical discipline, any successful theory becomes systematically susceptible to the category change that seems to promise it more than it can scientifically achieve.

3. Substantiation of processes

The third fundamental type of error is the linguistically motivated and mostly unreflected transformation of procedures, processes and relations into seemingly independent things or substances. Nominalizations such as "consciousness", "information", "will", "the self" or "rationality" systematically make the processual and relational appear as stable substances that can then be treated as metaphysical carriers of properties, leading to fundamental categorical confusions and ontological pseudo-problems. This tendency towards reification is pronounced in the German language because the grammar of German systematically favors the substantiation of verbs, adjectives and relational expressions. Ryle (1949) criticized this systematic error as the "myth of the ghost in the machine" and showed that the Cartesian body-soul metaphysics is based on a fundamental categorical confusion. Ryle's central insight was that mental terms such as "spirit", "soul", "intelligence" or "will" do not denote mysterious entities in an immaterial inner kingdom, but systematically denote dispositions to describe observable behaviors in specific contexts. When we say someone is "intelligent", we are not referring to a mysterious thing called intelligence that is somewhere in the person's head, but we are characterizing a complex set of skills, reactions, and contextual performances that that person exhibits in different situations. It is therefore a systematic category error to infer from the grammatical form "intelligence" or "the mind" the real existence of corresponding mental substances.

Anyone who does not reflect on this methodically believes that the noun expression refers to a really existing thing, while in truth it is only a grammatically conditioned

bundling of different descriptions and attributions. Ryle's analysis shows that many traditional philosophical problems about the nature of mind disappear if one takes the dispositional logic of mental concepts seriously and stops looking for the mysterious entities that supposedly correspond to these concepts.

Schopenhauer (1819) offers an instructive classical example of this reification tendency. In Schopenhauer's work, the will appears as a psychological impulse or striving of the individual human being and is systematically hypostasized into a universal metaphysical force of nature, which underlies both the conscious action of man and the unconscious movement of plants and the physical attraction of the stars. At first glance, this theoretical movement seems quite plausible, because Schopenhauer shows systematic analogies between different manifestations of striving and thus seems to offer a uniform explanation of disparate phenomena. The categorical error, however, becomes apparent when one recognizes that Schopenhauer works with a systematic linguistic trick: an originally psychological concept is stretched by analogical expansion until it acquires a universal ontological function and can function as a world ground. The reader then has the theoretically satisfactory impression of having received a unified metaphysical explanation of the world, where in reality only a linguistic shift and conceptual expansion has taken place. What appears to be a substantial philosophical discovery turns out on closer analysis to be a systematic reification of a relational concept. A grammatically correct negation, which initially only expresses the absence or negation of something, is understood by Sartre as a really effective metaphysical force that unfolds its own causal effectiveness. This systematic reification of nothingness exemplifies how grammar can mutate into a far-reaching metaphysical ontology if one considers grammatical possibilities to be ontological facts. This shows with particular clarity how strongly the grammatical structure of our language shapes and shapes our ontological intuitions. Schopenhauer elevates volition, an initially psychological impulse and activity, to a universal cosmic force that underlies all events. Both thinkers have systematic reification in common: an independent metaphysical entity is constructed from a linguistic expression that originally denotes an activity, relation or form.

This often happens completely unconsciously, because nominalizations in German, as in other European languages, grammatically suggest the existence of corresponding things and steer our ontological intuitions in this direction. The systematic category error lies in the fact that one considers grammatical possibilities of language to be direct representations of ontological facts and overlooks the fact that the substantiation of originally relational or processual expressions is a linguistic procedure that does not automatically entail ontological

commitments. Thus, the theoretical discourse shifts imperceptibly from the analysis of complex processes, relations and activities to the assertion of independent substances that can function as carriers of properties and as subjects of change. The substantiation of processes systematically follows the grammatical structure of German and many other European languages, in which nominalizations create a material stability in thought and intuition that conceals the originally processual or relational character of what is signified.

Whitehead (1929) criticized this systematic tendency as the "fallacy of misplaced concreteness" and showed that we regularly treat theoretical abstractions that have arisen as heuristic auxiliary constructions as if they were concrete, independently existing things in empirical reality. Socio-theoretical phrases such as "the market wants", "the state decides", "science has found out" or "society is developing" are everyday examples of the same systematic logic of reification. They bundle heterogeneous processes, different actors with different interests, complex institutional rules and historically grown practices into a seemingly unified acting entity that can be treated as the subject of decisions and developments. What at first appears to be a harmless linguistic abbreviation can become theoretically problematic if one forgets that it is an abstraction and instead asks about the real characteristics and intentions of these constructed collective subjects. In the contemporary philosophy of mind, systematic reification is clearly evident in central expressions such as "self," "I," "consciousness," and "mind" when these are treated not as theoretical models or heuristic constructions, but as empirical carriers of metaphysical properties. Metzinger analyzes the self as a neural model that the brain creates of itself in order to represent and control its own states. This analysis is initially theoretically fruitful and empirically plausible. It becomes problematic when the "self-model" is treated as a discoverable neuroscientific entity whose neuronal correlates can be searched for. Even in newer ontologies inspired by information theory, an originally relational concept such as "information" is regularly transformed into a metaphysical basic substance that is supposed to underlie all physical and psychological reality. However, this precise technical definition is often reified in ontological theories of information and hypostasized into a universal world substance from which both matter and consciousness are supposed to emerge.

Methodologically, this systematic tendency towards reification can only be countered if one consistently records the original functional or relational character of the terms used and regularly checks whether one has not imperceptibly moved from the analysis of processes and relationships to the assertion of corresponding substances. Reifications are seductive because they bring conceptual order into

empirical multiplicity and seem to lead complex relationships back to simple basic principles. They are epistemologically dangerous because they level out the concrete multiplicity of phenomena and curtail the specific explanatory powers of the concrete and contextual. Confusion of syntax and semantics

4. Syntax and Semantics

The fourth fundamental type of error is the systematic confusion of syntactic and semantic structures, which occurs when formal structures, algorithmic arithmetic rules or quantitative metrics are equated with meanings, normative reasons or claims to justice without reflecting the categorical difference between form and content. This confusion is widespread in contemporary philosophy and science, because the successes of formal methods lead to the identification of formal correctness with adequacy of content. In the tradition of logical empiricism, especially Carnap (1934), it was believed that traditional philosophical problems could be definitively solved by a systematic reform of language.

Carnap developed the idea of an exact theory of the formal properties of scientific languages, which would make it possible to expose metaphysical pseudo-problems as syntactic confusions and finally to put philosophy on a scientific basis. Carnap's project was theoretically challenging and systematic, but the fundamental belief that logical syntax already represents the ontological structure of the world, or that syntactic correctness automatically guarantees semantic truth, led to an inadmissible identification of linguistic form and conceptual content. What Carnap intended as a methodological specification and scientific foundation of philosophy was partly turned into a new form of dogmatism that equated formal elegance with substantive truth and overlooked the fact that the choice of a certain logical syntax already implies theoretical preliminary decisions about the structure of reality, which in turn cannot be justified purely syntactically.

Shannon (1948) defined information exclusively as a statistical measure of uncertainty reduction in the transmission of signals through a communication channel. This definition has been extraordinarily fruitful for the specific technical tasks of communications engineering and has enabled the development of modern information technology. Shannon's concept of information, however, is strictly syntactically defined and says nothing about what a transmitted message means in terms of content, what truth value it has or what practical consequences it has for the recipients. Nevertheless, in contemporary information-theoretical ontologies and in influential areas of the philosophy of mind, Shannonian measures of information are regularly treated as measures of meaning and made the basis of theories about intentionality, consciousness, and rationality. Information in

Shannon's sense and meaning in the philosophical sense belong to different logical categories and cannot be easily translated into each other.

The situation is similarly problematic with fairness metrics in the contemporary development of artificial intelligence. Terms such as "demographic parity", "equalized odds" or "counterfactual fairness" are precise technical definitions that formalize certain statistical properties of algorithmic decision-making systems and make them measurable. They quantify specific aspects of the distribution of decisions among different groups and make it possible to identify and correct systematic biases of algorithmic systems. These metrics are valuable and necessary as technical tools, but they are by no means exhaustive definitions of justice in the moral or political sense. Anyone who passes it off as such systematically confuses methodological aids for the quantitative recording of certain aspects of fairness with the normative concept of justice itself. Binns (2018) therefore rightly noted that there is no unified theory of fairness, but only various competing formalizations, each encoding certain moral intuitions and political values without exhaustively capturing or replacing them. An instructive example of the confusion of syntax and semantics is the phenomenon of "reward hacking" in the development of artificial intelligence. A learning agent who is programmed to collect as many points as possible in a simulated boat race can discover that he will receive optimally high rewards if he drives in circles and collects the same reward items over and over again instead of winning the actual race. The agent fulfills the formal reward function syntactically perfectly and maximizes the given target function mathematically correctly, but completely misses the semantic intention of the programmers. The problem is not that formalization as such has failed, but that formalization is equated with the intended meaning without reflecting the irreducible difference between syntactic correctness and semantic appropriateness.

Searle's (1980) famous thought experiment of the "Chinese Room" developed the same systematic point against the strong functionalism in AI research. Searle imagines a person sitting in a room and manipulating Chinese characters according to purely syntactic rules, without understanding the meaning of the characters or the rules. From the outside, this person could perfectly provide meaningful answers to Chinese questions and appear to understand Chinese. Syntax alone does not generate semantics, even if it can simulate semantic processes. The confusion between syntax and semantics can be demonstrated in information theory and fairness metrics, and also permeates fundamental areas of formal semantics and philosophy of language.

Tarski's (1944) semantic theory of truth has formally sharpened this systematic point by introducing the need for a metalinguistic level in order to be able to define

truth. Without the clear distinction between object and metalanguage, the distinction between syntactic and semantic properties collapses, and the classic liar paradoxes show how syntax and semantics are inextricably intertwined if the logical levels are not cleanly separated.

In Montague's (1970/1973) influential formal semantics of natural languages, however, it is not claimed that syntactic structures are identical with meanings, but that there is a systematic and well-defined mapping of syntactic structures to abstract spaces of meaning. This illustration itself is a theoretical construct and mathematical aid, but not an empirical or metaphysical fact about the nature of meaning. Rather, Montague's semantics shows how complex and mediated the relationship between syntactic form and semantic content is. The fundamental distinction also applies in applied ethics and technology ethics: a quantitative metric or algorithmic procedure is a selective instrument for capturing certain measurable aspects of a normative problem, but never the problem itself in all its normative complexity. When political or ethical concepts such as justice, autonomy or dignity are translated into algorithmic metrics, the discursive and deliberative process that is responsible for the selection, weighting, interpretation and normative justification of these metrics remains necessary. Without this accompanying normative discourse, the formal structure becomes a supposed substitute for the meaning of content, and what is up for debate ethically and politically systematically disappears from the view of the decision-makers.

5. Metaphysical Positing without Derivation

The fifth fundamental type of error includes metaphysical positing that directly derives ontological truths about the structure of reality from subjective intuitions, methodological limitations, or heuristic research principles, without justifying this derivation argumentatively or even reflecting on it as problematic. These positions are often philosophically powerful and theoretically influential, but they are not logical necessities or empirical discoveries, but fundamental decisions that define a certain metaphysical landscape and systematically exclude alternative possibilities. Plato (ca. 380 BC) elevated the idea of the good to the highest ontological reality and thus set an originally normative guiding category as a metaphysical absolute. What could initially be intended as a regulative idea for the orientation of ethical and political action is hypostasized by Plato into a transpolitical reality that is supposed to exist independently of human practice and historical contexts.

Descartes (1641) derived a metaphysical thinking substance from the methodical certainty of the cogito, thus splitting the world into two categorically different realms: *res cogitans* and *res extensa*. What initially begins as methodological doubt

and epistemological foundation intention is expanded by Descartes into a substance-dualistic ontology that creates the body-soul problem in a form that still burdens the philosophy of mind today. However, the positing of the thinking substance does not necessarily follow from the certainty of the cogito, but is an additional metaphysical decision that excludes other interpretations of self-certainty.

Spinoza (1677), on the other hand, defined substance as that which is in itself and is understood by itself, and based on it a monistic ontology in which God and nature are identical. Spinoza's geometric method gives the appearance of a compelling logical deduction, but the definition of substance is a positing that excludes other concepts of substance and determines the entire system. These positions are philosophically powerful and systematic, but they are not logical necessities, but fundamental metaphysical decisions.

Nagel (2012) has taken up the classic motif of metaphysical settings in the 21st century. Instead, according to Nagel's central thesis, there must be a teleological tendency in the cosmos itself, a kind of nature-immanent purposefulness that systematically favors these specifically human phenomena and makes their emergence probable. Nagel's argument arises from a subjective dissatisfaction with reductionist naturalistic explanations that understand consciousness and reason as contingent products of blind evolutionary processes. Leiter (2013) and other critics have pointed out that Nagel is here directly transforming a personal dissatisfaction with certain scientific explanatory approaches into an ontological assertion about the teleological structure of the universe, without arguing or even making plausible this far-reaching metaphysical thesis. What begins as a critique of scientific naturalism is expanded by Nagel into a speculative cosmology that promises more than it can deliver. The positing of a cosmic teleology does not follow from the problems of reductionist explanations, but systematically goes beyond them.

Chalmers' panpsychism or panprotopsyism is a theoretically elegant solution to the so-called "hard problem" of consciousness, but it does not necessarily follow from the existence of explanatory gaps in current neuroscientific theories. Churchland (2013) and numerous other naturalistic philosophers counter that a current explanatory gap is not proof of the need for a new fundamental property, but may only reflect the current state of empirical research. Finally, Parfit (2011) defended the existence of objective normative truths that are supposed to exist independently of human construction and cultural variation. Street (2006) and Joyce (2001), on the other hand, argue that our moral judgments and normative intuitions are evolutionarily formed and culturally shaped, and therefore can hardly be understood as reliable epistemic tracking of objective values. Parfit's objective

realism in ethics is one possible position, but it cannot be derived from the phenomenology of moral judgments or from the need for ethical orientation, but is an additional metaphysical positing. In the case of metaphysical positions, the theoretical temptation is great to draw an ontological punch line directly from methodological perplexity or from the limits of current explanatory approaches and to bridge unsolved problems through metaphysical constructions.

Leibniz's (1714) system of pre-stabilized harmony, with its assumption of an infinite number of windowless monads that are in perfect agreement by divine programming, is a classic example of how a real explanatory deficit (the problem of the causal interaction between substances) is reinterpreted into an elaborate world order that creates more problems than it solves. Husserl's (1913) phenomenological reduction was misunderstood by some students and interpreters as a direct access to the "essence view" of the existing, although Husserl had explicitly conceived it as a methodological abstention with regard to all questions of being and as a means of exposing the structures of consciousness. The epoché was intended to make it possible to describe the intentional structures of consciousness in their pure givenness without interpreting them metaphysically or making ontological commitments. Popper (1972), with his influential tripartite division of worlds (World 1 of physical objects, World 2 of mental states, World 3 of objective thought contents), proposed a productive heuristic framework for the analysis of cognitive processes that makes it possible to systematically distinguish between different types of objects and their specific properties. Popper's doctrine of the Three Worlds, however, becomes a metaphysical error when "World 3" is treated as an independent ontic sphere with its own causal forces, instead of as a theoretical instrument for analyzing the objectivity of claims to knowledge. In all these paradigmatic cases, the systematic boundary line is the same: a methodological standpoint, a heuristic research principle, a regulative idea, or a subjective normative intuition is absolutized as an objective property of the world and detached from its original functional context. The better epistemological strategy is to consistently understand metaphysical principles as "regulative ideas" in the Kantian sense, which guide research and structure cognitive processes without making ontological promises about the nature of the reality being researched. In this way, the theoretical openness to empirical revisions and conceptual innovations is preserved, and metaphysics becomes the fallibilistic result of theory testing and experimental practice, not their dogmatic replacement. Regulative principles can be empirically proven or refuted, metaphysical positions, on the other hand, systematically immunize themselves against criticism and empirical correction.

6. Ontologization of morals and values

The sixth and last fundamental type of error is the systematic ontologization of morality, which occurs when norms, values, rights, and duties are treated as objective characteristics of the world that are supposed to exist independently of human practice, historical developments, and cultural negotiation processes. This ontologization is often politically powerful and practically influential, but it suggests a metaphysical universality and objectivity of moral norms that does not stem from the empirical world itself, but from specific historical decisions and cultural developments. Thomas Aquinas (1265-1273) developed his doctrine of the *lex naturalis* as the participation of the rational creature in the eternal law of God. The natural inclinations of man, in particular the inclination towards self-preservation, reproduction and community life, are developed in Thomas into the objective foundations of a universal doctrine of natural law, which is supposed to be valid regardless of positive laws and cultural variations. What begins as an analysis of basic human inclinations is developed into an objective ontology of moral facts.

Kant (1785/1788) formulated the categorical imperative as a law of freedom that follows from the rational nature of man and claims universal validity. Kant's ethics is remarkable because it attempts to combine the autonomy of the moral subject with the objectivity of moral claims. The categorical imperative is supposed to follow from the structure of practical reason itself and thus establish a form of moral objectivity that is dependent neither on empirical facts nor on divine commandments. But Kant's reasoning also presupposes that all rational beings share the same practical structure of reason and that material ethical duties can be derived from formal principles of reason. The Universal Declaration of Human Rights (1948) speaks of "inherent dignity" and "equal and inalienable rights of all members of the human family". These formulations are politically powerful and historically significant because they establish universal standards for dealing with people that claim validity across cultural and political boundaries. However, they suggest a metaphysical universality that does not stem from the empirical nature of man or from the structure of reality itself, but from specific historical experiences (especially the crimes of the 20th century) and political choices.

Joyce (2001) has systematically argued that moral judgments regularly claim an objective factual character that they cannot redeem. When we say "torture is wrong", we usually mean "I disapprove of torture" or "In our culture, torture is rejected" and we claim to be expressing an objective moral fact that is true regardless of our attitudes and cultural imprints. Joyce shows, however, that this claim to objectivity is related to what we know about the evolutionary and cultural origin of our moral dispositions. Street (2006) formulated the so-called "Darwinian

dilemma" for realistic theories of value: If our evaluative judgments and moral intuitions have been shaped by evolutionary processes, they are highly unlikely to coincide with independently existing moral truths. Either there is a causal relationship between the objective values and our evaluative attitudes, in which case values themselves must have causal powers, which is difficult to understand. Or there is no such connection, in which case it is an implausible coincidence that our evolutionary moral judgments happen to meet the objective moral facts. It does not follow that morality is arbitrary or relative, but that its validity and binding nature derives from human practice itself: from negotiation processes, discursive justifications, historical experiences and the need to coordinate human coexistence. Morality is a human project, not a cosmic fact.

In Kuhlmann's (1985) transcendental-pragmatic discourse ethics, this becomes systematically visible when the unavoidable prerequisites of argumentation -- intelligibility, truthfulness, mutual recognition -- are analyzed as performatively set conditions of every rational debate. The systematic error begins where these performative conditions of rational discourse are transformed into an objective ontology of ethics, as if "ethics" existed as a metaphysical entity in its own right. Kuhlmann himself warns against such a reification and consistently links the validity of ethical norms to the concrete practice of justification in real discourses.

The systematic ontologization of morality can be theoretically intensified with Hume's (1739-40) famous observation that there is no purely logical bridge between descriptive statements about what is and normative statements about what should be. The transition from the descriptive "actual" sentence to a normative "shall" claim requires additional normative premises, which themselves cannot be derived from empirical facts without getting into a logical circle. Hume's insight is not that morality is impossible or arbitrary, but that it represents an independent dimension of human practice that cannot be reduced to empirical facts.

Moore (1903) criticized the "naturalistic fallacy" and thus, independently of Hume, marked the same categorical boundary line: empirical properties do not automatically mean that something is good or bad, right or wrong. Moore shows that evaluative terms form an independent logical category that cannot be completely reduced to descriptive terms. Nietzsche (1887) and Foucault (1975-84) have shown in their genealogical analyses how norms arise historically, have a cultural effect and change through power constellations. For Nietzsche and Foucault, norms and values are not timeless characteristics of the world, but the results of complex historical processes, power relations, discursive practices and institutional developments. This genealogical perspective does not show that morality is arbitrary, but that it must be understood as a historical product of

human activity that can be criticized, changed, and further developed. Rawls' (1971) famous "primordial state" with the "veil of ignorance" is precisely not a metaphysical reason or ontological fact, but a deliberately constructed heuristic procedure that is intended to procedurally generate and systematize intuitive notions of fairness. The "primordial state" is a theoretical instrument, not an empirical or metaphysical reality. Those who ignore all these methodological, genealogical, and constructivist insights and instead construct an objective ontology of morality produce a "second nature" of the social that immunizes existing norms against historical critique and political change. The only way to combat this immunization tendency is to consistently link ethical claims to validity in terms of discursive justification, practical contestability, and the lively practice of dealing with the foundations of human coexistence. Without this systematic reconnection, "values" become sacralized rhetoric that seals itself off from rational critique, instead of well-founded normative orientations that have to prove themselves in practice.

7. Regulative versus constitutive principles

Every systematic theory, whether it begins empirically or purely conceptually, comes up against methodological limits where it does not make any progress without fundamental definitions. However, these inevitable positions can occur in two systematically different forms: as methodical, regulative ideas that guide research processes without making ontological commitments, or as metaphysical, constitutive principles that are asserted as ontological facts about the nature of reality. This difference is epistemologically and philosophically decisive: regulatively established principles remain methodologically open, heuristically fruitful and empirically revisable, while metaphysically posited constitutive principles claim an apparent ultimate justification and thus develop a systematic immunizing effect against criticism and revision.

Kant (1781/1787) formulated the systematic idea that reason, by its very nature, necessarily goes out to the unconditioned and seeks complete explanations, but can only do so as a regulative idea and not as a constitutive principle of knowledge. Regulative ideas such as the idea of world unity, soul substance, or God guide empirical research by setting systematic completeness as the goal, without claiming that these ideas are themselves objects of possible experience. This describes the methodological framework: regulative ideas structure and orient research without making ontological promises about the existence of corresponding entities, while constitutive principles perform precisely this problematic step of ontological determination and immunization.

Husserl (1913) also understood phenomenological reduction explicitly not as an ontological statement about the nature of being or as access to a higher metaphysical reality, but as a methodological abstention from all natural positing of being. The epoché was intended to make it possible to describe and analyze the intentional structures of consciousness in their pure givenness, without interpreting them metaphysically or incorporating them into a speculative ontology. In this way, Husserl stands in a theoretical line with Kant: both systematically mark that there are unavoidable methodological positions, which, however, must be understood as heuristic guidelines and must not be hypostasized as discoveries of ontological facts. Anyone who starts empirical research must necessarily presuppose theoretical assumptions and conceptual frameworks that make the empirical data interpretable in the first place and place them in systematic contexts. This "theory-ladenness" of observation is inevitable, but it does not mean that the theoretical terms used express metaphysical truths about reality. Conversely, anyone who starts with conceptual analysis or rational construction must at some point include empirical tests or set basic normative or methodological principles that cannot be fully justified themselves. In both cases, it becomes apparent that a complete systematic conclusion is impossible and that every theory is dependent on positions at certain points that cannot be fully substantiated. It is therefore a question of systematic categorical hygiene to transparently identify such unavoidable positing as methodological, regulative principles and not to hypostasize them as ontological discoveries or metaphysical truths. Regulative principles can prove themselves in research practice or prove to be unfruitful; they can be replaced by better heuristic principles or corrected by empirical findings. Constitutive metaphysical principles, on the other hand, systematically immunize themselves against such revisions because they do not appear as fallible hypotheses, but as necessary truths about the structure of reality. End

Result

The systematic synopsis of the six types of errors analysed shows that ambiguity of central concepts, confusion of different levels of description, substantiation of processes and relations, equation of syntax and semantics, unfounded metaphysical positions and the ontologisation of historically developed norms form the dominant structural patterns of philosophical aberration. These category errors are not marginal phenomena or occasional negligence on the part of individual thinkers, but they systematically structure entire debates, research programs, and theoretical traditions. They permeate the history of philosophy from antiquity to the present day and appear in new variants in contemporary interdisciplinary fields of research, where they often adorn themselves with the prestige of empirical sciences.

The systematic task of a methodologically reflected and enlightened philosophy is not to invent new metaphysics or to replace the old ones with even more grandiose systems, but to make the existing category errors visible, to explicitly identify transitions between different logical levels, to consistently lead nominalizations back to the underlying processes and relations, to distinguish the fundamental difference between formal structure and significance of content, not to confuse methodological principles with ontological facts, and to acknowledge the historical conditionality of normative claims to validity without falling into relativism. Such categorical hygiene is not a theoretical end in itself or methodological formalism, but the indispensable prerequisite for philosophy to be able to fulfill its classical task of clarifying instead of obscuring it with conceptual confusion. It makes theoretical constructions empirically and rationally testable, instead of immunizing them against justified criticism through semantic elasticity and categorical vagueness. It leads philosophical discussions back to where they systematically belong: to the transparent space of reasons, methodological reflection and empirical experience, where arguments can be measured by their stringency, theories by their explanatory power and normative claims by their practical justifiability. Without this methodological discipline, philosophy becomes a game with concepts that takes its own confusions for profound insights. With it, it can become what it has always been in its best moments: an instrument of enlightenment that helps to better understand the world and ourselves.

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