VIRTUAL OBJECTS: BECOMING REAL*

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From an ontological point of view, virtuality is generally considered a simulation: i.e. not a case of true being, and never more than an illusory copy, referring in each instance to its real original. It is treated as something imagined — and, phenomenologically speaking, as an intentional object. It is also often characterized as fictive. On the other hand, the virtual world itself is extremely rich, and thanks to new technologies is growing with unbelievable speed, so that it now influences the real world in quite unexpected ways. Thus, it is also sometimes considered real. In this paper, against those who would regard virtuality as fictional *or* as real, I claim that the virtual world straddles the boundary between these two ways of existence: that it *becomes* real. I appeal to Roman Ingarden's existential ontology to show that virtual objects become existentially autonomous, and so can be attributed a form of actuality and causal efficaciousness. I conclude that the existential autonomy and actuality of virtual objects makes them count as real objects, but also means that they undergo a change in their mode of existence.

Key words: virtual object, real object, intentional object, becoming real, existential autonomy, actuality, existential ontology, Roman Ingarden, efficacy.

ВИРТУАЛЬНЫЕ ОБЪЕКТЫ: НА ПУТИ К РЕАЛЬНОСТИ

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С онтологической точки зрения виртуальность обычно расценивается как симуляция, то есть не в качестве одной из вариаций подлинного бытия, а в качестве иллюзорной копии, в каждом случае отсылающей к её действительному оригиналу. Виртуальное рассматривается как нечто представленное — и, выражаясь феноменологическим языком, как интенциональный объект. Зачастую оно может быть охарактеризовано как фиктивное. С другой стороны, виртуальный мир сам по себе очень богат, и с помощью современных технологий развивается с невероятной скоростью, в связи с чем может влиять на реальный мир весьма непредсказуемым образом. Поэтому он тоже иногда рассматривается как реальный. В этой статье, — в противовес тем, кто склонен рассматривать виртуальность *либо* как нечто фиктивное, *либо* как реальное, — я утверждаю, что виртуальный мир колеблется между этими двумя способами существования: он *становится* реальным. Я обращаюсь к экзистенциальной онтологии Романа Ингардена, чтобы показать, что виртуальные объекты становятся экзистенциально автономными и потому могут быть отнесены к форме актуальности и каузальной эффективности. Я заключаю, что экзистенциальная автономия и актуальность виртуальных объектов позволяет считать их реальными, одновременно указывая на то, что они претерпевают изменения в модусе существования.

Ключевые слова: виртуальный объект, реальный объект, интенциональный объект, становление реальным, экзистенциальная автономия, актуальность, экзистенциальная онтология, Роман Ингарден, эффективность.

1. INTRODUCTION

Virtuality tends to be considered a simulation of sorts (Steuer, 1992; Heim, 1993), in the sense of something that does not really exist, that can at most be an illusory copy referring somehow to its model or original in the real world. Moreover, William Gibson has gone so far as to claim that by virtue of its referring to cyberspace it is a form of "consensual hallucination" (quoted from Chalmers, 2017, 309). It is treated as something invented by human beings, just like the ships one sees when one gazes up at certain cloud-formations in the sky. It is supposed to be a fiction, and to exist only in an "as-if" sense. Meanwhile, the world of virtual objects, which is already extremely rich, is growing before our eyes with incredible speed, and thus often unexpectedly influences the real world. Hence, Chalmers (2017) feels perfectly entitled to claim that virtual objects are, in fact, real. In the present article, I myself shall argue, however, that virtual objects are neither fictional nor real. My intention is to furnish

readers with some ontological arguments in support of the thesis that virtuality—contrary to the thought that it must be once and for all either fictional or real—is created in a similar way to intentional objects, but then becomes real, and only then counts as part of the real world. It is therefore not merely a putative copy or simulation of reality, or just intertwined with reality; yet neither is it simply real. Matters are, indeed, otherwise, in that virtuality, being intentional in what is initially a pure and then a derived sense, passes through a process of existential autonomization, so that it *becomes real*.

The realm of virtual objects is so rich that it is probably not a single world. Ingarden would say that it is not *an existential domain*. Certainly, many fields of virtuality can be distinguished within it. It is not possible to define virtuality, inasmuch as this does not constitute a separate realm of existence. Therefore, instead of giving a definition of virtual objects to show what I mean by this term, I shall offer some concrete examples: a website, an electronic text document, a Windows or Android operating system, applications used when operating smartphones such as Google Maps or Google Photos, a Pokémon Go game, the Google search engine, virtual assistants like Alexa, YouTube, and Facebook, Wikipedia, the Stanford Encyclopedia of Philosophy, Gmail, and other electronic mail systems, Dropbox, WhatsApp, Bitcoin, the Second Life platform, Minecraft and other video games, and augmented reality. Holograms created by machines using the image from semi-transparent glasses such as HoloLens can also be considered a kind of virtual object. Regardless of whether it is possible to identify one single and essential aspect or feature in all of these as being sufficient to distinguish virtuality as such, I am prepared to regard them all as virtual.

All of these existences are in one way or another related to the development of computer science. Hence, I shall assume that these are "computer-based virtual objects" (CVOs), meaning they are computationally grounded—i.e. based on specific models of computation both in Turing's sense and that associated with other models of computation (see Stacewicz & Skowron, unpublished). When listing them just now, I referred to them as virtual objects, even though it is by no means clear whether they are all objects in the narrow sense of exhibiting the structure of a subject (i.e. a bearer) of properties. The thought that virtual objects might be processes or states of affairs, or even ideas, cannot be ruled out as obviously incorrect. Perhaps they are objects without essences, possessing a vaguer mode of existence, such that it is simply not possible to effectively define or classify them. Thus, when I speak of a "virtual object" I am using the word "object" in the broadest sense, as designating anything and everything that can be referred to as "items" of one sort or another, whose precise structure remains undefined, but which can be discerned in acts of consciousness, much as we might (albeit in certain rather specific contexts) wish to talk of "a some-

thing". Following the scholastic model, the meaning of the term might be glossed as follows: "Everything which is not nothing, but which in some sense is 'something,' is an object" (Twardowski, 1977, 35). To use Ingardenian language for a moment, in the present article I make no assumptions about the *formal* construction of virtuality, choosing instead to leave the issue of virtuality's form open-ended.

In effect, then, my intention is to omit any formal-ontological characterization of virtuality, in order to focus instead on its existential-ontological features. For the purposes of the present paper, I shall assume that virtuality is a specific *mode of being* (sometimes referred to also as a *mode of existence*). I assume, following Ingarden (2013, §10), that the mode of being is, alongside *matter* and *form*, a certain trait of the object—one that can be discerned in it, and one that is, in general, analysable. Then, still adhering to the terms of Ingarden's ontology as a precedent, I shall assume that within some such way of existence it is possible to distinguish, in more or less abstract terms, *moments* of existence, in the sense of elements that do not exist on their own, and which are inseparable "components" of this or that mode of existence. Among the many modes of being (i.e. compatible fusions of existential moments) pointed to by Ingarden, "intentional-being," "real-being," "possible-being," "ideal-being" and "absolute-being" can be treated as the principal ones.

What is important to note here is that for Ingarden, objects have their modes of being assigned to them rigidly, so that a change in an object's mode of existence would be tantamount to its losing its identity. Thus he writes: "one and the same [entity] cannot first exist in one mode of being and then in another; the disparity [*Verschiedenheit*] in mode of being excludes the identity of the object" (Ingarden, 2013, 104). The mode of being therefore divides everything that is, into inseparably distinct existential domains. Modes of existence may come to be interwoven, but they cannot interfere with each other. This ontological principle also applies, so to speak, "internally"; that is, if an object exists in a certain mode, then all its parts also exist in just that same way:

> when it comes to a mode of being such as, say, the being-real or the being-ideal of something, then it is impossible for something which is real to have some parts or properties that would exist in it in the mode of ideality. If something is real, then *everything* in it is real. (Ingarden, 2013, 105)

Modes of being are therefore highly important ontological components of all beings, in that they affect both the identity of an entity and its internal existential structure. What is more, the sheer fact of existence is itself an extremely important trait of an object: "Existence permeates, as it were, everything in the object, but it itself

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is nothing new—no part, property, or formal moment of the object" (Ingarden, 2013, 103, n.222).

My own goal, then, is to undertake an analysis of virtuality in the spirit of Ingarden's existential-ontological approach to analysis. Thus, in order to examine the mode in which such virtual objects exist, I start by considering whether the relevant moments of being, and in particular the moment of such objects' existential autonomy, can be discerned within them. More specifically, Ingarden (2013, 109) distinguished the following pairs of existential moments: 1. existential autonomy—existential heteronomy; 2. self-sufficiency—non-self-sufficiency; 3. originality—derivativeness; 4. independence—dependence. He also considered these existential moments: fissuration (in Polish: *szczelinowość*), fragility, activeness, durability and empirical possibility. Then, with the help of these moments, he defined various modes of being. Painting with a broad brush, one can say that absolute supratemporal being "is characterized by the following existential moments: originality, autonomy, activeness, nonfissuration, durability, selfsufficiency and independence" (Ingarden, 2013, 290), while ideal-being consists of autonomy, originality, non-activeness and selfsufficiency. Temporally determined real-being, in its present form, consists of autonomy, derivativeness, activeness, fissuration and fragility, while in its past form, it consists of autonomy, derivativeness, post-activeness and retroactive derivativeness, and in its future form of heteronomy, derivativeness and empirical possibility. Finally, intentional existence is characterized by heteronomy, derivativeness and non-activeness.

My argument that virtual objects become real is structured as follows: at the moment of creation, they are intentional objects in Ingarden's sense (i.e. they are certainly not real, because they are existentially heteronomous and non-active); in the course of their development, they begin to become existentially autonomous; they also begin to become actual and temporal and, what is more, they begin to enter into causal relationships. They therefore undergo an ontological process of becoming real. Since real objects, in Ingarden's ontology, are existentially autonomous, they enter into relations of cause-and-effect and pass through the phases of pre-actuality, actuality and post-actuality that make them temporal beings.

The paper is structured as follows. I start in the next (i.e. the second) section by giving reasons why the Ingarden ontology should be used to study virtual objects. The third part is an analysis of the existential autonomy of virtuality, in that such autonomy seems at first glance to constitute the principle moment differentiating reality and virtuality from one another. Subsequently, in the fourth part, I present Ingarden's account of intentional objects and analyse the relationship between intentional and virtual beings. Then, in the fifth section, I examine the temporality of virtuality, look-

ing to uncover similarities to and differences from the temporality of real objects. In the sixth, I seek to justify my own understanding of the ontological process of becoming real as this relates to virtuality. Finally, in the seventh section, I set out my general conclusions.

2. WHY INGARDEN'S ONTOLOGY?

There are four reasons to think that Ingarden furnishes us with the best available ontological model for studying virtuality. First of all, while there is no complete ontology of virtuality, Ingarden's ontology is so rich and subtle that it seems to lend itself to being deployed here. The subtlety of an approach to ontological considerations can surely be gauged from the number of differentiations it makes possible within the subject under analysis. In this regard it will suffice to point to the very large number of inconsistent combinations of existential moments Ingarden picks out and refers to as "modes of being"[1]. Secondly, in the context of his ontological investigations, this philosopher examines the contents of certain ideas, such as that of *ways of existence*, and in so doing breaks away from an exclusive focus on objects that are currently and actually existent[2]. Thirdly, Ingarden offers us an open-ended ontology, if only in the sense that further ontological research conducted in that spirit may lead to the discovery of new existential moments not already analysed by Ingarden himself. The properties of being a simulation or affording a strong sense of subjective immersion, often attributed to virtual objects, could well turn out to constitute new existential moments if and when they are properly studied by phenomenologists. Fourthly, Ingarden, in examining not just imaginary objects, cultural objects, objects presented in a work of art, and intentional objects more generally, but also such logical objects as the meanings of sentences and names, or the structure of judgments (see Skowron, 2014), has developed a myriad collection of ontological tools—ones that allow for the study of chimeras, fictions, and objects with a low "intensity of existence."

Since virtual objects are considered by realists to be unrealistic, or to be some kind of fake objects that are not real and sometimes even harmful or frightening as

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[1] Just look closely at (Ingarden, 2013, §33).

[2] As a Platonist, I myself believe that the proper object of ontological research is furnished by the combinations of ideally concretized ideal qualities in the contents of ideas, not that which can be grasped in our very hands and locked into a piece of real space. Furthermore, ontological research, thanks to its focus on the content of *ideas*, as distinct from that which exists in reality or at the present time, is — at least in terms of its declared aims — independent of metaphysical research. And even if these are not entirely independent, the ontological attitude can at least be said to allow for a broader view, allowing the class of what is to be studied to be significantly expanded.

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simulacra, taking this realistic and common attitude seriously and getting down to ontological work requires one to have the right tools at one's disposal for studying such potentially problematic objects. The bold assertion that they are not real, or that they do not exist, does not really address matters until one has explained what reality or existence as such amounts to. Existential monism, unfortunately, seems to have nothing helpful to offer here. To put it another way, any withholding of the "dignity" of existence from some mode or other surely ought to be preceded by a plausible analysis of the content of the very idea of existence itself.

Ingarden conducted his reflections in a specific and vivid way—one that can seem somewhat alien to the spirit and style of contemporary academic (and especially analytical) philosophy, in that he focused more on the subject itself than on achieving systematically reliable results. Many of the difficulties he highlighted were ones he sought to convey without taking up a position on them himself—albeit that in fact a good many of the issues he considered were clearly brought by him to a successful resolution.

In this article, I do not mean to conduct my own deliberations in accordance with the exact letter of the *Controversy over the Existence of the World*, or in full accordance with its author's intentions. Rather, I shall use some of Ingarden's insights, but will also on occasion depart from his findings in order to better understand the virtual sphere of being as such. For me, the prime concern is not to arrive at an optimal understanding of Ingarden's own conclusions, and I certainly would not consider it a virtue to be slavishly deferential to these. Thus, I am inclined rather to treat his findings as a desirable point of departure than of arrival[3].

3. THE EXISTENTIAL AUTONOMY OF VIRTUAL OBJECTS

Ingarden calls beings that are determined exactly by what they contain in themselves, by what they perfectly are, "existentially autonomous." As he puts it in his own words:

> An entity […] exists autonomously (is existentially autonomous) if it has its existential foundation within itself. And it has it within itself if it is something that is immanently determined within itself. On the other hand, an entity is existentially heteronomous (exists heteronomously) if it has its existential foundation "outside of itself." (Ingarden, 2013, 109–110)

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[3] For a review of Ingarden's achievements, see (Płotka, 2017; Thomasson, 2017) and the literature quoted there.

Autonomous beings owe what they are to themselves, not to other objects. Nothing is attributed to them, and their basic qualifications are not imparted or allotted to them. We may contrast that with, for instance, Mario, an Italian plumber who is currently one of the most popular virtual characters, and who owes his short build and pudginess to his creator, Shigeru Miyamoto, and the co-creators of his successive virtual incarnations. The pudginess of Mario is ascribed to him: he has acquired this property from his creator. It is not present in Mario himself, but was given to him by that creator, so that "it lives by the grace of the conscious act producing it, and it cannot make itself 'self-willed' [*eigenwillig*], 'independent,' 'sovereign [*selbstherrlich*]'" (Ingarden, 2013, 116). In this sense, Mario has no existential foundation in himself, but has been created by the activity of a consciousness, as someone conceived and preserved in the works of some culture. There is no authentic essence here in the sense of a true set of qualifications embodied in him: his qualitative make-up has no basis *in him*, but only in something external to him. He has also been assigned a mode of existence: in video games, he appears as an inhabitant of the fictitious Mushroom Kingdom who has the task of saving Princess Peach from King Koopa. Mario is not autonomous in the existential sense, and as such may be contrasted with real objects, with ideal qualities such as pure yellow, and with ideas—all of which are so. These beings have their existential foundation in themselves: the sources of their descriptions are contained within them, so that no person or thing can be said to have granted them anything.

Are virtual objects (or at least some of them) existentially autonomous? At first sight, they are not. Consider, for instance, any website. Is it autonomous? It does not seem to be. It is merely as its creators devised it. It is they who are the source of its qualifications; they decided that it should have this and not some other look, that it has the form of an open blog, that it is available at this and not some other address on the World Wide Web, and so on. It is they who are the source of its way of functioning in relation to reality. The website is just what they themselves have thought up, created and managed to preserve. It would not have been created without their activities, and would not be what it is were it not for them.

Heteronomous beings should not be included in causal relationships. Strictly speaking, they should not be taken to cause anything in the real world. Nevertheless, the actual delay to an airplane resulting from an overload to the network responsible for operating flights is a good example of how disturbances to the functioning of a virtual object may engender real effects. Alternatively, let us just try for a moment to imagine the real world without Facebook! Then, on the occasion of a lecture on phenomenological ontology open to the public, surely nobody would come except the

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organizers and the speaker, as it is not clear from where potential participants would get information about the event. Although promoting such a meeting on Facebook is something initiated by its organizer, this is already destined to be carried out independently of him or her, by promotional algorithms that function without any role for human awareness.

At this point, one may well start to wonder whether Facebook is just some kind of communication tool—merely a medium, with no real effects[4]. Nevertheless, just being a medium of communication is itself a very important—might we say real?—effect. Virtual communication on Facebook is primarily one-to-many: i.e. a Facebook user posts content, photos, videos on their virtual timeline. Other users, observing this person's activity in a kind of Facebook auditorium, can simultaneously browse this data. The ease of sharing information, the low cost of the process, and the opportunity to gain a wide audience on Facebook is what makes us choose this medium of communication. In December 2018, Facebook was employed by over two billion active users. Nevertheless, this type of communication resembles a monologue rather than any sort of dialogue. What is more, the way of communicating that social media sites such as Facebook exemplify has been shown to lead to an increase in egocentric behaviour patterns: one-to-many communication does somehow reinforce behaviour directed at promoting oneself and one's own interests. (Wen-Bin Chiou, Szu-Wei Chen and Da-Chi Liao (2014) have experimentally demonstrated that using Facebook inhibits altruistic and pro-social behaviour.) In this way, then, real human behaviour is changed, and social relationships remodelled. Therefore, it is difficult to maintain that Facebook is only a virtual communication tool. Unlike Mario, it causes real effects, and this fact would seem to make it real to some degree, or in some fashion, *itself*.

Moreover, in this regard, it may also be worth noting the existence of Alexa-type virtual assistants. These are devices that recognize the voices and wishes of users, and so enter into interactions similar to those occurring between humans. They also manage smart devices at home, thus entering into causal relationships (e.g., turning on lights, heating up the oven, increasing the volume of music that is playing) and producing real effects (the light is on, the oven preheated, the music louder than before). The intelligence of these devices is not comparable to human intelligence—that much is clear. Yet, smart devices both cause and detect change, and are capable of "making decisions" themselves. In short: they *become* real. Why is that? Because it is

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[4]   My thanks go to Paweł Stacewicz for drawing my attention to his response as a relevant possibility here.

a characteristic of real objects that they enter into relations of cause-and-effect. What is more, the source of their action is in themselves; hence, they *de facto* become existentially autonomous. This existential autonomy brings them closer to real objects as construed in Ingarden's ontology.

Another argument in favour of their becoming existentially autonomous is that one can attribute essences to virtual objects, whereas heteronomous objects are beings without any essence of their own. Existentially heteronomous beings are beings to which everything has been allotted in advance, rather than being present in them *as such*. The essence of a given object, by contrast, is actually embodied in *that* object. Nevertheless, it does seem that Facebook is an object of sorts (at least in my broad construal of this term's meaning, outlined earlier), with an essence. We can easily distinguish it from other objects, including other virtual objects such as Twitter. We are able to do this because there are moments in Facebook itself that set the boundaries of its immutability. Those boundaries determine its essence. The essence of an object is what remains constant in the object, even if the object goes through a series of changes. The number of current users is not important for Facebook: it could be different, yet Facebook would remain what it is. However, if we were to replace the Facebook timeline with ads for the sale of old computers, then I think we would all say that it is no longer Facebook.

It seems that it is possible to alight upon a set of qualifications and necessary co-occurrences of moments immanent to Facebook, and with this also the form, matter, and mode of existence of Facebook, which together would constitute its essence. Were this to be the case, it would be an example of a virtual being having an essence, so it could be assumed that this virtual being would not be heteronomous. It would also then be an object that, while initially existentially heteronomous, had nevertheless *become* an autonomous being.

4. INGARDEN'S ACCOUNT OF INTENTIONAL OBJECTS

If one asks an Ingardenian ontologist what virtual objects really amount to, he or she will immediately answer that within the terms of Ingardenian ontology they count as intentional objects. This answer is natural. Virtual objects are clearly products of human creative activity, they do not make decisions about themselves in an ontological sense, and they form part of modern culture, just like money or laws. In this section, I shall be taking a closer look at the claim that virtual objects are intentional objects.

Where existentially heteronomous objects are concerned, probably the most important group for Ingarden was that of intentional objects. These also played an

important role in the dispute between realists and idealists over the existence of the world. To be more specific, it was important in the context of that debate to distinguish between real objects and objects derived from consciousness, and it turned out that the concept of an intentional object served to meet this demand. Examples of intentional objects include literary characters, works of music and of architecture, money, scientific theories and—as it seems[5]—virtual objects. Of course, the examples given differ from each other: they do not all have an identical ontological structure. Ingarden was aware of this and distinguished many types of such object. But let us first start with the issue of how intentional objects are brought into play.

Among the various acts of consciousness, there are creative acts of a kind "whose entire purpose and sense consists in 'forming' their own, 'non-actual', and yet somehow existing, objects" (Ingarden, 2016, 200). The creation of a musical work, or of an algorithm that optimizes the solution to a given problem, as well as the creation of a literary character or the writing of the lyrics for a hip-hop song, all belong to this class. These acts, according to Ingarden,

> […] always contain a distinctive intentional [act of] meaning that plays a decisive role, if not the exclusive one, in the formation of "fantasized" objects: it is this poetically animated [act of] meaning that so-to-speak magically conjures up the fantasized objects out of itself, shapes them, reshapes and transforms them […]. (Ingarden, 2016, 200)

Amongst these acts he distinguishes (Ingarden, 2016, 201) two important groups. The first consists of acts of free fantasy, which create their intentional objects and meet the criterion for this by virtue of the fact that those objects immediately pass away, just as imagined objects do. The existence of such intentional objects is therefore fleeting and elusive. The second, meanwhile, is made up of acts that create intentional objects whose existence has a more solid existential foundation, in that the latter become fixed and can exist beyond the reach of the acts themselves. Sculptures, musical works, and works of literature are just such intentional objects. Intentional objects belonging to the first group are subjective, while those belonging to the second group acquire some sort of intersubjective objectivity and thus become accessible to other subjects.

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[5]   Ingarden did not himself analyse virtual objects in the sense that figures in the present article, as there were no Facebook, Skype, Gmail, etc., in his time. Also, in his ontology, there is no virtual mode of existence. Nevertheless, his analyses of works of art, and in particular intentional objects, point to close similarities between intentional and virtual objects. It is worth mentioning at this point that Zbigniew Król (2020) recently proposed to analyse *information* as an intentional object.

Without a doubt, virtual objects are man-made objects in the sense of these two types of act mentioned above by Ingarden. Nevertheless, these virtual objects characterized by intersubjective accessibility, such as Mario or Google Maps, are anchored or "fixed" in a very solid existential basis: from a "bottom-up" ontological perspective there is the electrical-information network[6], while in "top-down" ontological terms there are the relevant models of computation, which determine in advance the ideal mathematical structures in terms of which any subsequent virtual events will take place[7]. Thus, it can be said that virtual objects are created in the above-mentioned acts, and that the more important of these objects, in the sense of those that have become a significant part of contemporary culture, are ones created by acts belonging specifically to the second group distinguished by Ingarden.

Returning to the topic of how purely intentional objects are to be characterized, here is what Ingarden has to say about this in general terms:

> By a purely intentional objectivity we understand an objectivity that is in a figurative sense "created" by an act of consciousness or by a manifold of acts or, finally, by a formation (e.g., a word meaning, a sentence) exclusively on the basis of an immanent, original, or only conferred intentionality and has, in the given objectivities, the source of its existence and its total essence. (Ingarden, 1973, 117)

Meanwhile, in the *Controversy over the Existence of the World*, he emphasizes the existential heteronomy of the intentional object, conceived as

> …an entity which draws its being and its collective stock of attributes from the enactment […] of an intentional conscious experience, which in a specific integrated fashion is endowed with a content, and […] would not exist at all without this enactment. (Ingarden, 2013, 113)

Of course, the word "intentional" is associated with the property of consciousness and, more precisely, with the fact that consciousness is directed towards something. Hence, it is just those objects currently illuminated by consciousness—those

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6   The imagery of "top-down" and "bottom-up" ontological perspectives, implying a "top" and a "bottom" in respect of how such "fixing" takes place, is intended metaphorically here. The point is that in Ingarden's ontology, modes of existence differ in their intensity. The weakest are purely intentional objects, these being shadows of the acts that belong to the first group (of acts), while the strongest are absolute objects. We must add, however, that the image of Ingarden's ontology suggested by this metaphor is inaccurate, as it is not a "ladder of being." To adopt the language of mathematics, what we are dealing with here is rather a complex partial and non-linear order — one that is probably dense.

7   I have pursued an exploration of ideal (mathematical, computational) aspects of virtuality elsewhere. (See Stacewicz & Skowron, unpublished.)

that consciousness is currently directed towards—that are called intentional objects. However, a purely intentional object is not an object that consciousness illuminates or grasps, but one created by it. Ingarden refers to objects captured by consciousness as being "*also* intentional," and to objects created by acts of consciousness as "*purely* intentional" (Ingarden, 1973, 117). For an existentially autonomous object, it is a matter of existential indifference whether or not some consciousness happens to be directed at it, but for a purely intentional object this is not a matter of indifference under any circumstances, for the simple reason that the latter creates it. Looked at from another angle, we may say that objects that are "*also* intentional" correspond to a phenomenological category, while objects that are "*purely* intentional" instantiate an existential-ontological one.

There are two types of intentional object, corresponding respectively to the two groups of acts distinguished above. The first are those which are directly produced by a certain act of the subject, and thus are accessible only to the fulfiller of the act, who is at the same time their source. (Let me remind readers that these are purely subjective.) The second are those for whom the source of their endowments comes from creations that have been given intentionality through intentional structures. Such an intentional structure may be the meaning of a sentence, or some part of it. This type of intentional object therefore gains some independence from consciousness and is intersubjective. Ingarden refers to the first type of object as "*originally* purely intentional," while calling objects of the second type "*derived* purely intentional objects" (Ingarden, 1973, 117–118; §21, 125–127).

In the case of virtual objects, the units of intentionality are the appropriate IT-defined units of meaning: in particular, databases with their structures and variants. The latter, of course, come in many forms: deductive, graph, relational, document-oriented, cloud, embedded, mobile, real-time, temporal, spatial, etc. They are managed and operated by means of so-called "database management systems." These databases, regardless of their enormous diversity, are all based on mathematical structures of one sort or another. For example, the graph database is based on graphs: i.e. mathematical structures composed of points (vertices or nodes) and relations between these points (called "edges" or "lines"). Thus, there can be no doubt that were virtual objects to be intentional objects, they would have to be *derived* intentional objects.

While one might well agree with the rather compelling thought that virtual objects are intentional, the previously described phenomenon of existential autonomization seems to impose significant limits on this. An intentional object can itself neither create an autonomous object nor become existentially autonomous. Hence, the solution that I propose (which is incompatible with Ingarden's ontology) is to treat virtual

objects as derived purely intentional objects, which can become existentially autono-
mous. Thus, they cease to be intentional in Ingarden's terms. The ensuing analysis of
time-related structures pertaining to virtual objects will provide additional arguments
in support of this position.

5. THE ACTUALITY OF VIRTUAL OBJECTS

In Ingarden's existential ontology one can distinguish, amongst autonomous
objects, those that have a special presence: i.e. those that are actual. In particular, real
objects pass through a phase of actuality: the autonomous vehicle is initially an idea
or a project, then it becomes possible thanks to the development of technology and
is produced, making it part of reality. Thanks to the use of self-learning algorithms
that react with the environment, such vehicles become independent in their "deci-
sions" and, in a way, individualize themselves. Being actual, they fulfil the possibility
of their existence efficaciously, entering into causal relationships. They move from
being pre-actual to being actual, and then, as a result of their transience, pass away,
moving on to the phase of post-actuality. The imperfection of the existence of real
objects manifests itself precisely in the fact that they cannot continue their existence
in the actual phase without falling into the past:

> Transience [*Vorübergehen*] as a mode of being is […] based […] on the constant trans-
> formation of the being-active of what is present into this puzzling "no-longer-being-in-
> the-present," whereby it is nonetheless somehow sustained in being in the past, as some-
> thing bygone [*Vergangenes*]. This transformation—comprising the innermost essence of
> temporality—is of course nothing accidental, but is essentially bound up with a certain
> deficiency of the entity existing in this fashion: namely, with its inability to persist in
> activeness, as it were, without succumbing to passage [*Vorübergehen*]. (Ingarden, 2013,
> 239)

This activeness, in Ingarden's view, distinguishes the present in relation to what
is past (what has passed away and is not present) and what is future (what is yet to
come). So what does this existential moment pertain to? Well, Ingarden distinguishes
several characteristics of such activeness. He points out that for a present being to be
active is for it to be somehow directly acting, and that another object can emerge as a
result of this acting, and also that it is able to enter into causal relationships:

> […] what is active is distinguished by a *capacity to exert an effect directly* [*direkte
> Wirkungsfähigkeit*], or, to put it perhaps better: by an efficaciousness [*Wirkhaftigkeit*].
> It exists, since it is efficacious, consequent to which it is in a way creative: it can enable
> some other existent to issue out of itself, although it does not always do so. Only because

actuality harbors this efficaciousness within itself can the causal relation attain its status within the framework of what is present, although […] not everything that shows up within the framework of the present can be "cause" or "effect." (Ingarden, 2013, 240)

The actuality of the object fulfils (by filling out some present) and forfeits its existence. As an actual-being it exists more intensively (Ingarden, 2013, 245) than the past (what is past) that announces it, and closes itself to the future. The present that will transpire in the future somehow fulfils what its past promises: it becomes realized, effectively reaches its fullness, the articulation of its qualitative make-up, the plenitude of its being (Ingarden, 2013, 241)—which is then lost (as past) and can no longer return. What does return, even if it resembles in its qualifications what was, is in the real world always something else. In a way, the actual phase of a certain process shines through: that is to say, it is the process itself that is taking place, as it moves from a non-actual phase to a phase that is actual. The activeness is, in some manner, striking because it is present. Ingarden uses light as a metaphor here. The actual phase makes the process "shine" until the last phase of the process is actualized, after which the process is extinguished:

> The lead phase, the active one, which "shines" as it were in virtue of its activeness, and which until then had been constantly shifting onward, loses its activeness [once the process is completed] and ceases to differentiate itself by means of activeness from the phases that had flowed by. *All* phases had then passed away, none is active anymore, and all belong to the past. (Ingarden, 2013, 247)

So can virtual objects be actual? It may not be possible to offer an analysis of this issue in general terms: instead, such objects may have to be analysed, and their efficacious presence confirmed, on a case by case basis. Nevertheless, some things can still be said on this score.

Let us consider virtual objects such as Pokémon, and let us assume that these are objects genuinely located in real space. Let us say that they occupy the space of a cube, with a side equal to one metre. Let us also say that their boundaries are defined to a margin of error of 5 centimetres. In other words, using smartphones, we could easily find them in this space. They are not visible at first glance (just like air), and other objects can be put in their place (they are permeable, which is a material moment), but their existence is nevertheless marked by some kind of action. Even though they are not fully present, they can be located by many people, they can influence their behaviour, and they can "shine" (thus determining certain temporal perspectives) in the virtual world, also illuminating and changing the real world. Such an object can be circumvented, but it cannot be touched. It can be found in space, although it cannot

be seen directly. It passes through a phase of actuality, in that it was not here a moment ago, and in a moment will not be here again. It is in a certain time and can fill both the time in which it is present and the space in which it is located—although there can be many such densely arranged objects in one real place. Now for an object to be actual, it must be existentially autonomous (Ingarden, 2013, 232), yet this relationship does not apply in the other direction. Only what the source of its determination and qualitative make-up carries within itself can be actualized—can be *in actu esse*. Thus, if virtual objects could actualize themselves, as I am claiming, they would also have to be existentially autonomous, which would again be a proof of their becoming real.

The continuous process of moving from pre- to post-actuality is what gives objects their temporal characteristics. This passage or flow of a kind of luminescence—that is, being the actual phase still at the head of the process—is a sign of the latter's temporal essence. Ingarden (2013, 235) characterizes the process in such a way that only one phase of it can be actual, so that this phase is, as it were, "at its head." The actual phase is constantly moving into a new phase that is becoming actual. Thanks to this continuity with respect to the succession of actual phases, the process is densely filled up with actual phases, making it temporally complete. In other words, there are no gaps in this completeness, which other phases that are becoming actual could fill. Such processual time cannot just be filled up, so to speak, "in one go." So is it the same with virtual objects?

Consider any standardly developed Linux or Windows operating system. Is the temporality of this type of object (let us assume that its form is a process, not a thing or state of affairs) different from the temporality of real processes, such as, say, a triathlon? Undoubtedly, one of the differences is that virtual objects have "spots of indeterminacy" (cf. Błaszczyk, 2009), their updating (whatever it may be) not being continuous but rather occurring in leaps, from one version to the next. In addition, the actual or current version (let us say it is a phase of this object) carries the past, the present, and the future, which in a way extend the punctual structure of the present into to a more complex structure. Whatever the temporal structure of a virtual object may look like, it at least depends on its form, and one might suppose it to exhibit an algebraic structure (i.e. an algebraic lattice of sorts, possibly with additional structures). In this way, one could allow for the possibility of both discrete and continuous temporality, as well as anything that could be said to be intermediate in this respect. It is the temporal structure of virtual objects that can differ in effective terms from real objects, but—as in the case of the aforementioned spatial cube—this can also in some way mimic real temporal structure.

Gaps in a broader sense—i.e. not gaps specifically in the temporal structure of an object, but rather spots of indeterminacy in its content—were something Ingarden

sought to distinguish in relation to intentional objects (Ingarden, 1973, 246–254). Since they are not effectively defined in terms of all possible qualifications, Ingarden called these "schematic objects": i.e. those that can be filled with additional qualities. Certainly, some virtual objects have gaps in their qualitative endowments, such as personalizations of Android apps, which the user may have in their repertoire of possible additions. The fact that at least some virtual objects have these qualitative gaps indicates that they are not real—and so, some of Chalmers' arguments in favour of the reality of virtual objects fall. A real object is defined in respect of all qualifications, containing fully the basis of its qualitative makeup. Virtual objects can be "filled in," so to speak, where this brings them closer to intentional objects. Thus, indeterminacy is what prevents virtual objects—or at least some of them—from becoming fully real. Hence, virtuality is destined to straddle the divide between the real and the fictional, leaning sometimes towards the one and sometimes towards the other, depending on the number of instances of the "filling in" of undefined places by qualities: that is, depending on a specific ontological saturation.

6. THE BECOMING REAL OF VIRTUAL OBJECTS

Virtual objects, though they originally show up as just heteronomous entities, take on a real life. They become causes—sometimes only indirect ones, but causes nevertheless—of real events and processes, such as flight delays, for instance. Initially, the sources of their qualitative descriptions are diverse, but they then begin to determine themselves, adapting to users and the environment. By becoming existentially autonomous in the direction of real (and not, for example, ideal) objects, they become in some sense real, and through thus engaging in self-organized contact with the environment, just like neural networks they individualize themselves, becoming unique. Their actuality, presence and permanent updating is also tantamount to a form of existential autonomization.

Ingarden (2013, 117) claimed that heteronomous beings cannot rebel against their creator, that they must always be what they were intended to be. However, virtual objects, which are said to be heteronomous, rebel against their creators with striking frequency. Every user of a virtual text editor has probably experienced rebellion on the part of a virtual object: the automatic correcting of the text one just entered, though not the most immediately striking example, is certainly one of the more familiar instances. Wherever virtual machines autonomously optimize our actions on the basis of self-learning algorithms, there is a kind of "decision-making" autonomy, and often a rebellion against the will of both the creator and users. Also, a self-driving

car, if *it* "determines" that it should rebel against the will of its creator, will simply do so. Thanks to artificial intelligence, any autonomization (though perhaps not in the existential sense) on the part of machines of the sort we are now dealing with can give rise to a rebellion of sorts against us.

Michał Głowala (2019) defends the non-reality of virtual objects, invoking the Eleatic criterion of reality according to which it corresponds to the power to cause or receive this or that particular change: an object is real if something genuinely causes things to happen, or is the object of such causation. Seen from this perspective, virtual objects would seem to be far from causally inert. Consider the Google Maps application, which shows drivers the quickest or shortest route, often leading to the avoidance of traffic jams. Let us assume that a certain number of drivers find themselves heading for a traffic jam, and Google Maps then directs them to take an appropriate detour which will save them time. (This is usually one route, though there may be several.) However, if too many drivers choose a given road to avoid the traffic jam, then the preferred (i.e. time-saving) detour will also become gridlocked —by precisely those drivers seeking to avoid the original jam. In this case, I would definitely say that a virtual object exhibits the ability to cause, in an indirect manner (cf. Ingarden, 2013, 128–141), a traffic jam, so it has a real effect. Without the Google Maps app running, this new traffic jam would not exist at all. This app is therefore a factor that disrupts the current state of the real world (in that there was no traffic jam there before), and one that causes a new traffic jam, making it creative:

> The cause [...] "*brings forth*" the effect. In other words, it is the *effectuating* [*wirkende*] factor, which is not only, so to speak, the emanation of some force, but which, in the occurrence of an event, is rather in itself the cause, or contains within itself a moment of effectuality [*Aktivität*] when occurring as part of the evolution [*Sich-Abspielen*] of a process. (Ingarden, 2013, 137)

The possibility of causing a traffic jam is not accidental, even though from the point of view of the creators of the application it is certainly not intentional, either: rather, this is directly inscribed in its essential function of directing traffic. In principle, this situation does not differ (at least in its real consequences) from the traditional managing of traffic by a policeman, where what we encounter is a person who is authorized to direct traffic, and who in virtue of this fact has the power to do so, thus having a real impact on the state of the world. The only difference is that Google Maps directs traffic in an indirect way—not directly, like the policeman. The virtual equivalent of how the person in charge of traffic control issues commands and signals will be the appropriate algorithm in the application, which "decides on" the choice of detour, together with the application interface, whose function is to effectively pass this information on to drivers.

In the ontology of Ingarden (2013, 141), only real beings can be causes or effects. If it is the case that Google Maps is the (indirect) cause of some new traffic, then Google Maps must exist in the same way as that traffic itself: i.e. in a real way.

Virtuality, then, is a way of existence which, while previously heteronomous, becomes autonomous, and which in so doing makes itself real, where this has come to pose a substantial challenge for ontologists. My own belief is that it straddles the ontological abyss between intentional and real objects, doing so not through accidental ontological similarities such as intersubjectivity or immersion (so popular amongst ontologists working in the IT industry these days), nor even through the interweaving of existential domains, but rather through the possibility of updating and, along with this, some sort of existential autonomization.

Chalmers (2017) analyses the difference between reality and non-reality in terms of four dimensions: existence as such (without any analysis of modes of being or moments of existence), the real occurrence or non-occurrence of virtual events, the illusory or non-illusory nature of experience, and the value of the experience of virtuality (or lack thereof). Defending the validity and value of the experience of virtual objects, where this is an aspect of his position I myself would fully support, he writes:

> In virtual reality environments, users make real choices, they really do things, and they are genuine sorts of people. Even in limited existing environments such as Second Life, a user can genuinely write a novel, or make a friend, or read a book (to use Nozick's examples). They can choose whether to (virtually) attend a concert or to build a house. They can be honest or dishonest, and shy or courageous. In principle, a subject living in a long-term virtual reality could make their own life there. (Chalmers, 2017, 339)

One has to fully agree with that opinion: virtual reality surely does have undeniable value for humankind. However, I do not think that that is what reality is all about. Reality is, first and foremost, existential autonomy and the possibility of being *in actu esse* (though not only!). It is a certain mode of being which consists of such—and not other—existential moments.

Ontological differences between reality and fiction, as well as between reality and ideality, reality and absoluteness, and so on, can only be fully explored in the wake of a detailed elaboration of the distinction between these modes of being—not to mention examining the issue from the perspectives of formal ontology (e.g., in terms of the thought that the basic form of an individual object is that given by its being a subject of properties, while the form of an intentional object exhibits a specific two-subject structure) and material ontology (e.g., exploring ways in which ideal qualities may be concretized). I certainly share some of Chalmers' intuitions, such as the fact that virtual objects come close to real objects, or even that "[i]n the long term,

and in principle, virtual reality may well be on a par with physical reality" (Chalmers, 2017, 350). Nevertheless, ontological analysis of these intuitions requires the use of means that go much further than the tool of ontological structuralism employed by Chalmers. Without distinguishing moments of existence (e.g., those chiefly brought to our notice by Ingarden, such as existential autonomy and existential heteronomy, self-sufficiency and non-self-sufficiency, originality and derivativeness, independence and dependence, fissuration, and many others), and without realizing the formal differences between, for example, the (formally) double-sided character of ideas and dual subjecthood of intentional objects, it will be difficult to carry out any analysis of virtuality. For this reason—and this seems like a point well worth reiterating—Ingarden's ontology should be seen as offering a set of analytical tools very much called for in the context of contemporary philosophical disputes.

7. CONCLUSIONS

Computer-based virtual objects are man-made and, at first sight, belong to the field of intentional objects—as ones which owe their existential power to the fact that, being computationally founded, they are anchored or "fixed" in the structure of large IT-electrical networks. They are certainly not real objects, because they contain "spots of indeterminacy," but their impact on the real world is so strong that they seem to inevitably tend in the direction of reality, becoming part of it. This tendency consists primarily in their becoming autonomous and assuming certain forms of actuality (which may be specific to just them), and thus also of temporality.

On Ingarden's reading of things, the stability of an object's mode of existence is a condition of that object's identity. If the mode of being were to change at all, then after such a transformation we would definitely be faced with another object. The aforementioned phenomenon of existential autonomization, at least if I have done justice to it here, breaches this ontological principle: virtual objects, while autonomizing themselves, remain the same objects, even if they come to be much closer to what counts as real than they were at the outset of their existence. If that is so, then the fundamental laws of existential ontology need to be rethought, and the issue of virtuality, thanks to its singularly challenging character, would seem like an excellent training zone for exploring possible new foundations in respect of Ingarden-inspired ontology.

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