On (How to Make Sense of) Virtualects[☺]

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Introduction

In the summer of 2016, one could regularly observe people—children and adults alike, alone or in groups—walking around outside, staring at their (smart-)phones' screens, and behaving in a somewhat odd manner, i.e., as if they were looking for or chasing something in their actual surroundings that, for those not looking at a screen, was just nowhere to be seen. Additionally, these oddly behaving people said things like

(1) `I see a jigglypuff!`

What I'm describing here, as observed from an external perspective, is, of course, how people played the mobile Augmented Reality (AR) game *Pokémon GO* (PG) which, while no longer the global phenomenon it used to be, is still incredibly popular.

In PG, a player's phone's rear-facing camera captures her real surroundings, which are displayed on her phone's screen. Additionally, however, the screen displays 3D rendered wire frame models of *Pokémon*, i.e., fantasy creatures of myriad shapes, colours and sizes.[1] These models are displayed in such a way as to appear as if these creatures were part of the real surroundings as captured by the camera. Moreover, to reinforce this effect, the phone's motion sensors allow for the player to move her phone while the Pokémon retains its position, i.e, the position in the real world where it's represented as being. So for example, my phone's screen might display one of these creatures as sitting on my real desk, next to my real coffee mug; and when I move my smartphone slightly to the left, the 3D model is being displayed further one the left side of the screen as well, appearing as if it retains its position next to my real mug. While playing PG, the player's real position is located via her phone's integrated GPS module, and placed on a virtual map as provided by Google Maps. Certain locations on this map are flagged as being occupied by Pokémon. So when players reach

[1](According to the Pokémon games:) 807 Pokémon species are currently known to inhabit the world of Pokémon (see Bulbapedia, 2017b, where it is stated that "it is implied that there are more waiting to be discovered").

such a location, their respective phones' screens display what appears to be the same Pokémon. This is, then, the sense in which *reality*, i.e., the player's real surroundings, is being *augmented* by PG (see Kleinz and Beuth, 2016, for some of the technical details of PG).

Now, while PG players know exactly what they're doing in playing PG, PG non-players might have a hard time understanding PG players' behaviour. In particular, they might have a hard time making sense of what PG are *saying*. In in this paper, I want to focus on this latter, linguistic aspect of the PG experience.

Consider the following scenario: Two currently active PG players, Anne and Ben, stroll around a park, when Anne, looking at a bush through her phone's screen, as captured by the rear-facing camera, suddenly utters (1), followed by Ben's looking at that same bush through his phone's screen, calling "I see it, too!", and their subsequent running towards the bush. In the vicinity, a currently non-active PG player, Chris, and someone not knowing about PG, Dave, overhear Anne's uttering (1), and look in the direction of the indicated bush—unmediated by a screen, however. Given this scenario, the questions I want to ask in this paper are: (i) In uttering (1), what is Anne *saying*? And (ii) in listening to Anne's uttering (1), what are Ben, Chris, and Dave *hearing*, respectively? In other words, (i) what is the *content* of (1) (as uttered by Anne)? And (ii) what is it that Ben, Chris and Dan, respectively, regard as the *content* of (1) (as uttered by Anne)?

The above scenario involves two crucial distinctions: first, that of knowing or not knowing PG; and second, that of taking up an internal or an external perspective towards PG. *Knowing PG*, here, involves having some sense of what PG is essentially about; that is, knowing PG involves knowing, at least, that PG is an AR game and that playing PG involves catching and training certain creatures within the game. *Taking up an internal perspective towards PG* involves engaging in a pretence or game of make-believe whose rules and principles of generation (of fictional truths) are provided, at least in part, by PG *qua* AR game (see Walton, 1990, for the operative notion of *game of make-believe*). Finally, *taking up an external perspective towards PG* involves knowing PG, but not taking up an internal perspective towards it, although an internal perspective might have been taken up towards PG at some point. So while Anne and Ben know and take up an internal perspective towards PG, Chris knows but takes up an external perspective towards PG, and Dave doesn't even know PG. More specifically, then, the above questions can put thus: (i) given that Anne knows and takes up an internal perspective towards PG, what is the *content* of (1) (as uttered by Anne)? And (ii) given that they have different epistemic and imaginative perspectives towards PG, what is it that Ben, Chris and Dave, respectively, take to be the *content* of (1) (as uttered by Anne)?

I shall answer these questions by looking at both the internal and the external perspective that can be taken up towards PG, starting with the internal. I will develop the position that in the described situation, Anne and Ben fluently speak a common language, namely what I call the *Pokémon GO Virtualect*. Chris knows this language, too, but, first, might not be as fluent with it as Anne and Ben, and, second, given that a Virtualect is a foreign language for every real-world speaker, is currently not engaged in the right language mode. Yet he can still extract a semantic content from Anne's utterance, as interpreted according to his base language, i.e., ordinary English. This requires making sense of the Virtualect in question (the Fregean pun is fully intended). Finally, the ignorant bystander, Dave, can't extract any semantic content from Anne's utterance, for he doesn't speak the Virtualect at all. That is, he lacks *linguistic knowledge*.

The Internal Perspective

I shall assume that, in playing PG, PG players engage in a kind of pretence or game of make-believe (in the sense of Walton, 1990). In doing so, PG players make-believedly presuppose that certain non-linguistic facts obtain, such as the fact that certain creatures, called "`Pokémon`",[2] exist; that these creatures inhabit the players' surroundings; and that these creatures can be caught and trained. Given these make-believe presuppositions, players can make as if to look for, catch, and train these creatures. Moreover, in engaging in this kind of make-believe, PG players say things like

(1) `I see a jigglypuff!`

So what is the content of (1) *as* uttered by an active PG player, i.e., as uttered by someone engaging in the game of make-believe as grounded by PG (MB_{PG}, for short)? Specifying and grasping the content of a sentence $\mathcal{S}$ involves specifying and grasping a condition that $\mathcal{S}$ imposes on the world such that $\mathcal{S}$ is true just in case the world plays along with this condition. Such a condition is called $\mathcal{S}$'s *truth condition*. So specifying and grasping the content of a sentence $\mathcal{S}$ ultimately involves laying out what $\mathcal{S}$ demands of non-linguistic reality in order for $\mathcal{S}$ to be true. More generally, this picture is concerned with explicating how language relates to the *things that make up non-linguistic reality*, i.e., the things being *talked about*. As Dowty et al. put it, "truth-conditional semantics [...] is based squarely on the assumption that the proper business of semantics is [...] to explicate the inherent 'aboutness' of language" (1981, 5). So in order to specify the truth-condition of a sentence $\mathcal{S}$, it's generally presupposed that $\mathcal{S}$ says something *about* the things that belong to non-linguistic

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[2]Here are my notational conventions: object language expressions are written in typewriter font, with additional quotation marks in the running text (e.g., "`jigglypuff`"); and variables ranging over object language expressions are written in calligraphic font (e.g., "$\mathcal{S}$").

reality, and thus that the constituents of $\mathcal{S}$ stand for these things. I shall call this the *Presupposition of Aboutness* of (the truth-conditional interpretation of) language. In connection with his doctrine of Sense and Reference, and, in particular, his adherence to the position that "[a] proper name (word, sign, string of signs, expression) expresses its Sense but Refers to, or designates, its Reference" (1952, 31), Frege says:

> Perhaps an idealist or sceptic would have objected long ago: "You are speaking without further ado of the moon as an object; but how do you know that the name 'the moon' has a Reference at all? How do you know that anything has a Reference?" I reply that it is not our intention to speak about our idea of the moon, and that we do not content ourselves with the Sense, when we say "the moon", but *we presuppose a Reference*. [...] Now, we might of course be mistaken in that presupposition, and such mistakes have occurred. However, the question whether we are perhaps always mistaken in this may be left unanswered here; in order to justify speaking about the Reference of a sign, it suffices for now to point to our intention in speaking or thinking, even if with the proviso: in case there is such a Reference. (1952, 31-2; emphasis mine)

This encapsulates the Presupposition of Aboutness, which underlies every exercise of endowing a sentence with a truth-condition.

Now, *within* MB_{PG}, and given a context of utterance $C = \langle \ldots, \mathrm{Anne}, \ldots \rangle$ in which Anne is the speaker, (1) presumably imposes the following truth condition on the world: (1) is true (in MB_{PG}) just in case there's an object o such that "jigglypuff" applies to o and Anne sees o (in MB_{PG}).[3] Since Anne apparently sees many things (e.g., a bush, her phone, a 3D rendered pink and ball-shaped wire frame model, and so on), within MB_{PG}, and given C, (1) is true (in MB_{PG}) just in case "jigglypuff" applies to one of the things Anne sees (in MB_{PG}). But this condition doesn't yet tell us exactly what the world must be like (in MB_{PG}) such that, given C, (1) is true (in MB_{PG}), for it still contains a metalinguistic component, i.e., the requirement that the *predicate* "jigglypuff" *applies* to something (in MB_{PG}). To see, then, what the world must be like non-linguistically (in MB_{PG}) so that, given C, (1) is true (in MB_{PG}), we need to specify the MB_{PG}-internal application condition of "jigglypuff".

So what kind of predicate is "jigglypuff"? Well, *within* MB_{PG}, "jigglypuff" seems to be a *species predicate*, and thus a *natural kind predicate*;[4] for in the Pokémon games, the different Pokémon species are supposed to be just that: *biological species*, and thus natural kinds (see, e.g., Bulbapedia, 2017b).[5] So "jigglypuff", at least within MB_{PG}, seems to be the same kind

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[3]I'm assuming here that "sees", within MB_{PG}, just expresses the ordinary relation of *seeing*.

[4]Sometimes individual Pokémon are given proper names that are homophones of the species predicates that apply to them, respectively. For example, in the Pokémon anime series, Ash Ketchum's pikachu is also *called* "Pikachu". I shall capitalize Pokémon species predicates that are used as proper names for individual Pokémon.

[5]NB: Pokémon can, according to the Pokémon games, be stored and transmitted as computer data in the Pokémon Storage System (see Bulbapedia, 2017c). I shall put this complication to one side, however.

of predicate as, e.g., "tiger" is outside of MB_{PG}. So to specify the application conditions of "jigglypuff" within MB_{PG}, we need an account of how species predicates function generally, semantically speaking. In what follows, I shall follow the account of Nimtz (2017).

According to Nimtz, (vernacular[6]) natural kind predicates, and thus species predicates, fall into the broader semantic category of so-called *paradigm predicates*. This proposal is supposed to be in the spirit of Putnam (1975) and Kripke (1980), who offer what is currently the orthodox semantic treatment of vernacular natural kind predicates. Generally, a paradigm predicate, according to Nimtz, has application conditions that are *relationally determined*, *object-involving* and *actuality-dependent*. That is, given a paradigm predicate $\mathcal{F}$, $\mathcal{F}$'s application condition is determined by an associated *value structure* $\langle R, O, @ \rangle$, where R is an equivalence relation, O is a set of objects ($\mathcal{F}$'s *paradigm set*) and @ is the actual world (2017, 125). To see how the application condition of a species predicate *qua* paradigm predicate depends on its associated value structure, consider the species predicate "tiger". "tiger" has the value structure $\langle$*belonging-to-the-same-species-as*, $\{🐱_1, 🐱_2, \ldots\}, @\rangle$, where the $🐱_1, 🐱_2, \ldots$ are *real, flesh-and-blood tigers* that serve as the predicate's paradigms. So the application condition of "tiger" doesn't involve any surface characteristics by way of which we might correctly *identify* a given individual as a tiger (e.g., *having-dark-stripes-on-gold-red-brownish-fur*, and so on), but involves real, flesh-and-blood specimens of the species themselves, so that, for "tiger" to apply to some object o, o must belong to the same kind as *these*. Additionally, these real, flesh-and-blood tigers serving as the paradigms of "tiger" must be located in our *actual surroundings*, i.e., @.[7] And so on for other species predicates.

As Nimtz points out, this understanding of species predicates is perfectly in line with the Kripkean orthodoxy (2017, 127). Talking about singular terms for natural substances, Kripke claims that, "in general, terms for natural kinds (e.g. animal, vegetable, and chemical kinds) get their reference fixed in this way; the substance is defined as the kind instantiated by (almost all of) a given sample" (Kripke, 1980, 135-6; quoted by Nimtz (2017)). And explicitly talking about species *predicates*, Kripke says:

> [A] natural kind [predicate] in ordinary discourse has some function like that of a proper name—that it refers to the things of the same substance or species of whatever is in question, as 'the kind of animal given by this original sample.' One may have certain surface characteristics which one will believe that, in the absence of further investigation, will identify further instances of the kind. However, (a) one may turn out to be wrong about which surface characteristics are really relevant. [. . .] (b) Any animals which aren't of the same kind—that is, don't resemble, say, in internal structure, the things in this original sample—are not tigers no matter how much they resemble tigers, and not matter how difficult it was,

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[6]*Vernacular* natural kind predicates are predicates like "water", "gold" and "tiger"; on the other hand, *scientific* natural kind predicates are terms like "$_{79}AU$" and "H_2O" (Nimtz, 2017, 126).

[7]@ is home to past, present and, perhaps, future tigers. So the paradigm set might include tigers long dead.

when one originally saw tigers, to distinguish them from these other animals. It is true that we wouldn't
know what the internal structure was; so we can't say that the [predicate] 'tiger' *means* 'having such
and such a biological structure on the inside,' because we don't know it. That is a matter of biological
investigation. But we can say that to be a tiger you have to be the same kind of animal as this. That is
briefly and very roughly stated. (Kripke, 2013, 45-6)

So a species predicate $\mathcal{F}'s$ denotation is ultimately fixed in virtue of each member's belonging
to the same species as some actual individual that serves as a paradigm of $\mathcal{F}$. Nimtz himself is
neutral as regards the question of whether, for some species predicate $\mathcal{F}$, $\mathcal{F}$'s associated value
structure belongs to the *semantics* or the *metasemantics* of $\mathcal{F}$; that is, Nimtz remains neutral on
the question of whether the *semantic content* of $\mathcal{F}$ essentially involves $\mathcal{F}$'s associated value struc-
ture, or whether $\mathcal{F}$'s associated value structure just *fixes the denotation*, as it were, of $\mathcal{F}$, in that it
"merely depicts ephemeral factors that figured in our introduction of the [predicate]" (Nimtz, 2017,
125, footnote 3), which is in line with Kripke's (1980) causal-historic view of the metasemantics
of denoting expressions. Yet presumably, if a species predicate $\mathcal{F}$'s semantic content involves its
associated value structure, the latter's "ephemerality"—which seems to hinge on the fact that the
choice of paradigms is somewhat arbitrary and contingent—goes away only if it is considered as
somehow inherently (and perhaps metaphysically) indeterminate or descriptively specified what its
paradigms are (perhaps by taking the two-dimensionalist's route, as Nimtz suggests).[8]

Now, as "jigglypuff" is a species predicate within MB_{PG}, "jigglypuff", like "tiger"
outside of MB_{PG}, has a value structure $\langle R, O, @ \rangle$, determining its application condition (and thus,
if it *has* a (non-gappy) application condition, its denotation). Now, given that R is just *belonging-
to-the-same-species-as*, the problem is, of course, to fill up O, as there are no actual jigglypuffs
that could serve as paradigms to ground the applicability of "jigglypuff". That is, there are no
actual individuals that have originally been called "jigglypuff". And so *qua* species predicate,
which is essentially object-involving in that at least *one* paradigm instance must ground its being
associated with a (non-gappy) application condition at all, "jigglypuff" isn't associated with
any (non-gappy) application condition within MB_{PG}. Within MB_{PG}, then, "jigglypuff" has
no denotation, not even the empty set.

Compare the situation of using "tiger" as part of a sentence uttered by a PG player. Let's say
that Anne is in the zoo, playing PG, and, looking into the tiger cage through her phone's screen,
says:

(2)   I see a jigglypuff right beside a tiger!

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[8]The *semantics vs. metasemantics* question will become relevant again later, in connection with our predicate of
interest, "jigglypuff", to which I shall now return.

Within MB_{PG}, and given an utterance context $C = \langle \ldots, \text{Anne}, \ldots \rangle$ in which Anne is the speaker, (2) presumably imposes the following truth condition on the world: (2) is true (in MB_{PG}) just in case there are at least two objects o_1 and o_2 such that "`jigglypuff`" applies to o_1, and "`tiger`" applies to o_2, and o_1 is beside o_2, and Anne sees o_1 and o_2 (in MB_{PG}). Now, assuming that words, *if they have an actual (non-gappy) application condition*, have the same (non-gappy) application condition within a game of make-believe, "`tiger`" applies to the animal in the zoo (in MB_{PG}) just in case it belongs to the same species as (almost) all original samples, i.e., 🐱$_1$, 🐱$_2$, ... (in MB_{PG}). So within MB_{PG}, given C, (2) is true (in MB_{PG}) just in case there are at least two objects o_1 and o_2 such that "`jigglypuff`" applies to o_1, and o_2 is tiger, and o_1 is beside o_2, and Anne sees o_1 and o_2 (in MB_{PG}).

The problem with "`jigglypuff`", as opposed to "`tiger`", thus seems to be that the former predicate doesn't have any *actual original samples* that ground some (non-gappy) application condition outside of *or* within MB_{PG}. But why can't "`jigglypuff`", retaining its *gappy* application condition,[9] as it were, as grounded in its (nonexistent[10]) actual original samples, apply to something *other* than whatever belongs to the same species as its actual original samples (i.e., in this case, to something other than *nothing*). Well, assuming for the moment that MB_{PG} is, or in some way determines, a *possible world*, $w_{MB_{PG}}$, this amounts to the thought that it might be the case that in $w_{MB_{PG}}$, there's an object o such that "`jigglypuff`" applies to o, while outside of MB_{PG}—i.e., in @—, "`jigglypuff`" applies to nothing.[11] But this can't work; for the application conditions of natural kind predicates are guided by their actual original samples *even across possible worlds*, as is supposedly shown by our intuitions (Kripke, 1980, 55-7). That is, the *intensional* application condition of "`jigglypuff`" must read: for all worlds w, and all objects o in w, "`jigglypuff`" applies to o in w just in case o belongs to the same species as whatever actual original samples have been dubbed "`jigglypuff`". So the application condition of "`jigglypuff`" is still grounded in whatever are its actual original samples, even if "`jigglypuff`" is supposed to be applied to something relative to $w_{MB_{PG}}$. But there are no actual original sample that have been called "`jigglypuff`".

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[9]If it makes sense to say that "`jigglypuff`" has an application condition outside of MB_{PG} at all, it is, supposedly, *gappy* in that it has an empty paradigm set—just as (make-believe) proper names like "`Ash Ketchum`" are supposedly empty outside of MB_{PG}.

[10]Talk of *nonexistent actual original samples* abbreviates talk of *the fact that there are no actual original samples in "`jigglypuff`"'s paradigm set*. This talk is not meant to suggest that the actual original samples are nonexistent, i.e., Meinongian, objects.

[11]That is, "`jigglypuff`" applies to nothing (outside of MB_{PG}) in the same sense in which my coffee mug applies to nothing: it's not *specifiable* what any potential applicant would have to be like for "`jigglypuff`" to apply to it.

Yet intuitively, within MB_{PG}, "`jigglypuff`" *should* apply to something other than whatever belongs to the same species as its (nonexistent) actual original samples. But that means that within MB_{PG}, "`jigglypuff`" doesn't retain its gappy application condition as grounded in its (nonexistent) actual original samples. We might thus distinguish between *real* species predicates like "`tiger`" and *make-believe* species predicates like "`jigglypuff`". While for any *real* species predicate $\mathcal{F}$, $\mathcal{F}$'s (real) application condition is grounded in its *actual* original samples—given that $\mathcal{F}$ is not only essentially relationally determined and object-involving, but also essentially *actuality-dependent*, as is represented in $\mathcal{F}$'s value structure by its including @—, for any *make-believe* species predicate $\mathcal{F}_{MB}$, $\mathcal{F}_{MB}$'s (make-believe) application condition isn't grounded in any actual original samples; instead, given that $\mathcal{F}_{MB}$, too, is essentially relationally determined and object-involving, it must be regarded as essentially *make-believe-involving*—which is to be represented in $\mathcal{F}_{MB}$'s value structure by its including *a world of make-believe*, w_{MB}. So in the case of "`jigglypuff`", *qua* MB_{PG} species term, its (make-believe) value structure is $\langle \textit{belonging-to-the-same-species-as}, \{\odot_1, \odot_2, \ldots\}, w_{MB_{PG}} \rangle$, where $\odot_1, \odot_2, \ldots$ are the *make-believe* original samples of "`jigglypuff`". So "`jigglypuff`"'s (make-believe) application condition is grounded in its *make-believe* original samples $\odot_1, \odot_2, \ldots$. Recall that within MB_{PG}, and given the utterance context $C = \langle \ldots, \text{Anne}, \ldots \rangle$, our originally formulated truth condition for (1) ran: (1) is true (in MB_{PG}) just in case "`jigglypuff`" applies to one of the things Anne sees. And while Anne does *really* see a bush, her phone, and a 3D rendered pink and ball-shaped wire frame model, she *make-believedly* sees a *jigglypuff*—to which "`jigglypuff`", *qua* MB_{PG} species term, applies (in MB_{PG}). So within MB_{PG}, given C, (1) *has* a truth condition, given that "`jigglypuff`" is construed as a MB_{PG} species term with the (make-believe) value structure $\langle \textit{belonging-to-the-same-species-as}, \{\odot_1, \odot_2, \ldots\}, w_{MB_{PG}} \rangle$.

But what exactly *is* $w_{MB_{PG}}$, other than a fancy ingredient of a (make-believe) value structure? In discussing the benefits of doing without the notion of rigidity in introducing the notion of a paradigm term, Nimtz says:

> Reminiscent of Putnam's (1975, 233-4) idea that rigidity traces back to *indexicality*, my argument [...] trace the modal characteristics of theoretical identifications [such as '`Brontotosauruses are Apatosauruses`' and '`79AU is Gold`'] back to the fact that paradigm terms are object-involving, relationally determined, and *actuality-dependent*. But these semantic properties are arguably what underlies rigidity in the case of singular terms for which 'rigidity' is well defined. So, my account is more fundamental than any account in terms of rigidity. (2017, 137; emphasis mine)

Ultimately, I think that it's the dependence on *actuality* that makes Nimtz' tracing back of theoretical identifications' modal characteristics to paradigm terms' semantic properties "reminiscent of Putnam's idea that rigidity traces back to indexicality." So in a paradigm term $\mathcal{F}$'s value structure, the inclusion of @ seems to result from @'s being the world of the utterance context in which $\mathcal{F}$ was

originally introduced as a term applying to the original samples in *those* surroundings. So as part of the (make-believe) value structure of "jigglypuff", perhaps $w_{MB_{PG}}$ can also be so construed: as being element of the (make-believe) value structure of "jigglypuff" in virtue of being the world of the (make-believe) utterance context in which "jigglypuff" was originally introduced as a predicate applying to the original samples in *those* surroundings. What we have, then, with "jigglypuff" and its (make-believe) value structure $\langle$*belonging-to-the-same-species-as*, $\{\odot_1, \odot_2, \ldots\}, w_{MB_{PG}}\rangle$, is a genuinely *pretended* or *make-believe* species predicate in that it's only *within* the game of make-believe that "jigglypuff" has acquired a non-gappy application condition in the first place. "jigglypuff", then, falls into the *semantic category* of *make-believe species predicates*.[12]

To be clear, the proposal is *not* that "jigglypuff" is a *make-believe species predicate* in that it *really* has the value structure $\langle$*belonging-to-the-same-species-as*, $\{\odot_1, \odot_2, \ldots\}, w_{MB_{PG}}\rangle$, where $w_{MB_{PG}}$ is an element of the utterance context in which "jigglypuff" was originally introduced as a predicate applying to the original samples in *those* surroundings, i.e., to $\odot_1, \odot_2, \ldots$; for of course, there still are no such original samples *to* be included in any *real* value structure. Instead, the proposal is that "jigglypuff" is a make-believe species predicate in that it's *make-believedly a species predicate* and thus *make-believedly* such that is has the value structure $\langle$*belonging-to-the-same-species-as*, $\{\odot_1, \odot_2, \ldots\}, w_{MB_{PG}}\rangle$, where $w_{MB_{PG}}$ is an element of the utterance context in which "jigglypuff" was originally introduced as a predicate applying to the original samples in *those* surroundings, i.e., to $\odot_1, \odot_2, \ldots$. Henceforth, talk of *make-believe species predicates*, and *make-believe expressions* generally, shall be understood in this way.

Yet given this picture, two problems arise. First, (real) species predicates are ordinarily introduced by pointing at some existent and mind-independent individual or other that is perceptually salient in the context of utterance, or with which one is at least *acquainted*, and simultaneously declaring something along the following lines:

(3) "tiger" is to apply to all and only individuals belonging to the same species as *this*,

where "*this*" refers to the demonstrated individual. That is, for a case of successful dubbing *via* something like (3), the individuals that serve as the original samples that ground further applications of the species predicate are *there*, mind-independently, *to be pointed at*. They're not merely qualitatively or descriptively given, for then species names would be more akin to *descriptive names* (see

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[12]Not surprisingly, being led by these (essentially Kripkean) considerations, Kripke (2013, 29-30, 46) also toys with the idea of introducing the semantic categories of pretended names (like "Sherlock Holmes") and pretended natural kind predicates (like "unicorn" and "bandersnatch").

Evans, 1979, 1982)—which, supposedly, they are not. But in the case of the make-believe species predicate "jigglypuff", even *within* MB$_{PG}$, a successful dubbing procedure of this kind—i.e., the pointing at some existent and mind-independent individual or other that is perceptually salient in the context of utterance, and the simultaneous declaration of something along the lines of

    (4) "jigglypuff" is to apply to all and only individuals belong-
            ing to the same species as *this*,

where "*this*" refers to the demonstrated individual—, which grounds the application condition of "jigglypuff" in that *this original sample* features in the predicate's value structure, can't be presupposed; for while it's easy enough (for me) to put the $\odot_1, \odot_2, \ldots$ into the value structure, *even within MB$_{PG}$*, the $\odot_1, \odot_2, \ldots$ aren't *mind-independently* there *to be pointed at*. That is, given that MB$_{PG}$ *is*, after all, a *game of make-believe*, the jigglypuffs $\odot_1, \odot_2, \ldots$ don't, as it were, appear out of thin air, fit for being pointing at and called "jigglypuff".

It is, of course, *make-believedly true* that jigglypuffs are existent and mind-independent creatures that are perceptually salient and readily available to be pointed at. But this an *external* truth about MB$_{PG}$.[13] What I'm getting at here is that this is ultimately not part of what constitutes the *epistemic and metaphysical reality* of MB$_{PG}$ *qua* game of make-believe. That is, even within MB$_{PG}$, there simply are no jigglypuffs independently of the PG player *qua* PG player *to* gain *de re* epistemic and linguistic access to without any kind of mediation through something mind-dependent. The point might be put thus: both the metaphysical as well as the epistemic situation of Pokémon trainers *qua PG players*, i.e., *qua real-world agents engaged in MB$_{PG}$*, is different than that of Pokémon trainers who are (merely fictional) *inhabitants of the Pokémon world* (if there is such a world). For example, it's true according to the Pokémon fiction that Ash Ketchum, in being a (merely fictional) inhabitant of the Pokémon world, has *de re* epistemic access, *via* unmediated perceptual acquaintance, to existent jigglypuffs that are independent of his or any (merely fictional) Pokémon-world-inhabitant's mind. But that is an *external* truth about the Pokémon fiction. We, on the other hand, in being PG players, and thus in engaging in a game of make-believe that is ultimately grounded in the real world, have no such direct epistemic access to mind-independent Pokémon *while engaging in MB$_{PG}$*.[14]

So how are jigglypuffs epistemically accessed while engaging in MB$_{PG}$? So see this, note that while the epistemic and metaphysical situation of PG players *qua* PG players is essentially differ-

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[13]For more on external truths about MB$_{PG}$, see the following section.

[14]An exception to the general thesis that we have no direct epistemic access to mind-independent objects of make-believe might be Kripke's *Matilda* (2013, 20), a pretended Russellian sense datum. Yet it is not entirely clear whether Matilda is really mind-independent or pretended at all.

ent from that of (merely fictional) Pokémon-world-inhabitants, the former do have an epistemic advantage over the latter. For PG players, even while engaging in MB_{PG}, generally know that PG is a piece of *fiction*, at least "in the backs of their heads," as it were. That is, they know of the external perspective that can be taken up towards PG, and thus of how, e.g., jigglypuffs are *described* by the real world Pokémon fiction. So they know, in virtue of their acquaintance with the external perspective, exactly *what* to imagine, and can then go on to use (make-believe) species predicates as applying to (anything that is of the same species as) *these*. So what happens, essentially, is that PG players *qua* PG players gain epistemic access to jigglypuffs in virtue of knowing *externally given descriptive denotation-fixers* from their real-world acquaintance with the Pokémon fiction.[15]

So this is the content of what Anne says, in knowing PG (*qua fiction*) and taking up an internal perspective towards it, in uttering (1): *that she sees a jigglypuff*. She expresses this, within MB_{PG}, in virtue of speaking what I call a *Virtualect*: in the *Virtualect of Pokémon GO* (the *PG-Virtualect*), the predicate "jigglypuff" is a species predicate, applying to all and only jigglypuffs in virtue of their belonging to the same species as some original samples that have been dubbed "jigglypuff" in the context of utterance that is, or is determined, by MB_{PG}; to reach these samples, to which no direct epistemic access is possible for a PG player, Anne exploits her knowledge of the fact that PG is a fiction, and thus treats the externally given "jigglypuff" descriptions as denotation-fixers for these original samples. So within the PG-Virtualect, the make-believe species predicate "jigglypuff" semantically functions just as an ordinary species predicate functions in ordinary language; yet in virtue of being a *make-believe* species predicate, it's metasemantically parasitic on the "jigglypuff" descriptions that are externally specified by the Pokémon fiction itself.

But this leaves us with the question of whether "jigglypuff", as used in ordinary language, also has a semantic content, and, if so, which one? Is it determined by a gappy application condition? Or is it determined by the "jigglypuff" descriptions themselves? Or is determined by something else entirely?

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[15]Here's one (not entirely, but perhaps illuminatingly similar) analogous situation: if God, knowing everything there is (qualitatively) to know about tigers, engages in a game of make-believe in which He observes tigers in Siberia, within this game of make-believe, He has (mediated) epistemic access to tigers in virtue of knowing the externally given descriptive denotation-fixers; and within this game of make-believe, his use of the species predicate "tiger" applies to (creatures that belong to the same species as) *these*.

The External Perspective

In this section, I shall make a suggestion as to what the semantic content of "`jigglypuff`", and thus, given the utterance context $C = \langle \ldots, \text{Anne}, \ldots \rangle$ in which Anne is the speaker, of

(1) `I see a jigglypuff!`

might be outside of the PG-Virtualect, i.e., in our real-world language. One possibility is to say that "`jigglypuff`" has a gappy application condition outside of the PG-Virtualect, and thus that (1) determines a gappy content, if it determines a content at all. But then (1), given C, and, say,

(5) `I see a squirtle!`,

given C, have the *same* (i.e., no) semantic content outside of the PG-Virtualect, for "`jigglypuff`" and "`squirtle`" share a gappy application condition. I do think that this is the right account of the content of (1) [and (5)] for someone like Dave in our initial scenario, who doesn't know PG—neither internally (as determining a game of make-believe), nor externally (as constituting a fiction). That's because, in taking (1) [and (5)] *seriously*—i.e., as not involving *make-believe* species predicates, but as involving *real* species predicates—, Dave, in effect, *doesn't understand* (1) [and (5)], and thus isn't, and shouldn't be, able to distinguish (1) and (5) on *semantic* grounds. *Contra* Kripke (2013), I think that it's worthwhile to introduce the distinctive semantic categories of make-believe names and make-believe kind terms/predicates, which, within their respective Virtualects, are just ordinary names and ordinary kind terms/predicates, respectively. It is then part of a speaker's *linguistic competence* to know whether an expression falls into one of these categories, at least given that PG is an official, public, conventionalised and thus intersubjectively specifiable piece of fiction.[16]

Another possibility is to say that, outside of the PG-Virtualect, (1), given C, has the same semantic content as

(6) `According to Pokémon GO, I see a jigglypuff!`,

given C. This is the *Ellipsis* or *Fictional-Operator Account* of fictional content (see, e.g., Lewis, 1978; Reimer, 2005; Künne, 2007; Predelli, 2008; Murday, 2011), which can be developed into very different directions (depending, in effect, on whether one is willing to take possible-world-semantics on board, and on how far one is willing to go with this). Yet despite the different specifications, any such account effectively has it that a sentence like (6), given C, and, say,

(7) `I see a tiger!`,

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[16] The situation might well be different for purely *personal* games of make-believe—which is, I believe, what Kripke is getting at.

given a suitable context of utterance—which is not to be treated as having the same content as (7) prefixed with an operator ("`according to reality`"?)—, are strictly *about* different things. While (6), given C, is *about* the *content* of a fiction, (7), given a suitable context of utterance, is *about* a real-world situation involving a *tiger*. So the Ellipsis account does justice to the idea that using make-believe expressions outside of their corresponding Virtualects presupposes speakers' taking up an *external* perspective towards (what's known to be) a fiction.

But the question is, of course, how to treat sentences like (1), given C, theoretically. That is, how does the operator "`According to Pokémon GO`" function, semantically speaking, as part of the real-world language? More specifically, how does it contribute to the real world truth condition of (1), given C? And in particular, how does it operate on (the real-world semantic content of) the make-believe species predicate "`jigglypuff`"?

One proposal, which is explicitly Fregean, treats operators such as "`According to Pokémon GO`" as *meaning shifters* like other intentional (and generally: intensional) operators (see Künne, 2007).[17] So within the scope of a fiction operator, according to such an account, an expression doesn't receive its ordinary denotation (referent, extension) as its semantic content, but (one of) its ordinary *sense(s)* (intension(s)). In virtue of containing the operator "`According to Pokémon GO`", then, the truth condition of (6), given C, doesn't involve the ordinary denotation of "`jigglypuff`"—which, given that its real-world application condition is gappy, is none whatsoever—, but (one of) its ordinary sense(s), and thus demands of the world that something is the case with respect to *it* for (6), given C, to be true. Yet it is notoriously problematic to specify (one of) the real world sense(s) of a make-believe name or natural kind term/predicate—in particular, given that, in a fiction operator's scope, it must be *unequivocal*; for while standardly, according to Frege, for different speakers, the senses associated with an expression $\mathcal{E}$, respectively, *can* diverge "[s]o long as the referent [of $\mathcal{E}$] remains the same" (1952, 210, footnote 2), first, "`jigglypuff`" *has no* denotation in the real world, which would allow for the variation of sense so long as its denotation remains the same; and second, given that in fiction-operator-prefixed sentences like (6), the *sense* of "`jigglypuff`" is supposed to serve as the *denotation* (referent) of "`jigglypuff`", in order to facilitate coordination between speakers in virtue of talking *about the same thing* in uttering a fiction-operator-prefixed sentence like (6), *this sense* must presumably remain the same among speakers, allowing only for variation of *its* respective sense, i.e., the sense of "`the sense of 'jigglypuff'`".

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[17]Even Murday, who argues from premises that are in line with the semantics of Mill (1973), regards his (two-dimensional) fiction operator "as triggering an oblique context such that embedded terms express something other than their customary content" (2011, 60).

One possibility to get at *the* sense of a make-believe expression $\mathcal{E}$ is to equate it with the sense of the definite descriptive extracted from the fiction in question by substituting a variable for every occurrence of $\mathcal{E}$ in the fiction itself, conjoining all the resulting open sentences, and binding the variable occurrences by a iota operator. This strategy faces several problems, however. First, in the case of a *virtual* fiction such as PG, or, generally, in the case of any non-*text*-based fiction, it is of course difficult, if not impossible, to extract such a definite description in the first place; and second, even if this *were* achievable for every (kind of) fiction, it would make full *knowledge* of the sense of a make-believe expression practically unattainable—except, perhaps, for the fiction's author herself. So to explain how coordination between speakers *as well as* the practical possibility of (mutually) understanding the senses of make-believe expressions is facilitated, it's worthwhile to look somewhere else for what these senses might be.

I propose that we can extract these senses *from the Virtualects themselves.* For within the PG Virtualect, coordination and mutual understanding *does* occur, given that PG players can draw on their external knowledge that PG is a *fiction*, and thus involves genuine stipulations, e.g., to the effect that jigglypuffs are pink, ball-shaped, like to sing their enemies to sleep, and so on. That is, *qua* fiction, PG doesn't develop a life of its own, as it were, but provides (relatively) clear-cut conditions of what it is to fall under the predicate "`jigglypuff`";[18] and from within MB_{PG}, PG players can access these conditions as denotation-fixers for the (make-believe) original samples of "`jigglypuff`". Moreover, they can do this without needing to know the *whole* description that characterises jigglypuffs. For example, while Anne might rely on her knowledge of the denotation-fixer given by the conditions of being ball-shaped, pink and disposed to sing its enemies to sleep, without knowing, e.g., that (according to the Pokémon fiction) jigglypuffs are furry, have a curly hairline, and are from the type NORMAL-FAIRY, Ben might rely on his knowledge of the denotation-fixer given by the conditions of being pink, being ball-shaped, and having a curly hairline, without knowing, e.g., that (according to the Pokémon fiction) jigglypuffs sing their enemies to sleep, are furry, and are from the type NORMAL-FAIRY (see Bulbapedia, 2017a, for a characterisation of the Pokémon species *jigglypuff*).

In effect, then, what we need to gain access to, from the outside, *via* the (external) sense of the make-believe species term "`jigglypuff`", is just what PG players denote *from the inside* in using "`jigglypuff`", as speakers of the PG-Virtualect within MB_{PG}. We can do this, I think, by equating the external sense of "`jigglypuff`" with the sense of a kind of *deferring description*. In particular, we can regard "`jigglypuff`" as synonymous to a *deflector description*, where a deflector

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[18]Kripke-style counterexamples for specific descriptions, for example, don't occur out of nowhere, as it were, within some game of make-believe for a given fiction, but must be officially and explicitly described in *some* part of the fiction.

phrase is a linguistic device that can be used to borrow someone else's language (see Kracht, 2015, who introduces deflectors and rigorously develops their (formal) semantics and logic). Kracht himself regards deflector phrases as a kind of (poly)modal *sentence operators*. A deflector itself is of the form "`In the language of...`", where the "`...`" is to be filled in with, e.g., the name of a person, a language or another mode of expression (Kracht, 2015, 3). So for example, deflector phrases are "`In the language of a mathematician`", "`In the language of 1980`" (Kracht, 2015, 4) and, I propose, "`In the language of a PG player`", where the language of a PG player is PG the PG-Virtualect. Given this understanding, then, (6) is to be understood as synonymous to

(8) `In the language of a PG player, I see a jigglypuff!`,

where the effect of the deflector phrase distributes among the expressions within its scope. So the sense of "`jigglypuff`", outside of the PG-Virtualect, is the same as that of the deflector description "`what, in the language of a PG player, is a jigglypuff`".[19]

My suggestion as to how the content of (1), given C, can be construed in *our ordinary language* needs to developed in more detail. In particular, I must provide a model-theoretic treatment of the ideas laid out. For now, I shall summarise my proposal by pointing out five of its features. First, my proposal is *expression-transforming*. That is, "`jigglypuff`" is a make-believe species predicate in that it's a species predicate *in the PG-Virtualect*; yet outside of the PG-Virtualect, it's (synonymous to) a *deflector description*. Second, my proposal is *Aboutness-shifting*. In understanding (1), given C, as (8), given C, one explicitly talks about the *content of the fiction*, and not about jigglypuff. Third, my proposal is *metalinguistic*. Yet it doesn't involve the *expression* "`jigglypuff`", but quotes the *semantic content* of "`jigglypuff`" *as* it's employed in the PG-Virtualect. Fourth, my proposal is *doubly parasitic*. That is, the external semantic content of the make-believe species term "`jigglypuff`" is grounded in how it is to be used within the PG-Virtualect; this application condition, in turn, is grounded in the PG fiction itself, which supplies denotation-fixers for the make-believedly used predicate. Finally, my proposal is *two-dimensional* in that it involves what Kaplan (1989, 510) calls a *Monster*, i.e., a (two-dimensional) context-shifting operator—given that the PG-Virtualect depends on MB_{PG} as being or determining a context of utterance.[20]

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[19]An alternative would be regard (some) deflector phrases as applying to subsentential expressions from the outset, so that (1), outside of the PG-Virtualect, can be regarded as having the same semantic content as

(8′) `I see what, in the language of a PG player, is a jigglypuff!`

I shall (formally) explore these two ways of employing deflector phrases on another occasion, however.

[20]Incidentally, (Kracht, 2015, 2-3, footnote 1) explicitly denies that his account can be construed as falling under the general heading of two-dimensional semantics. I disagree. But this is not the place to delve into this issue.

Conclusion

Fiction isn't confined to one "world" or another, but essentially involves both its real world grounding fictive artefact, e.g., a text, sequence of images or mobile application, and a game of make-believe that is played *with this grounding artefact in mind.* Fiction is part of our lives—both of our real as well as our imaginative endeavours. It is a mistake to try to keep these two realms neatly apart. Instead, one constantly skips back and forth. In this paper, I've attempted to show two things: first, how this interplay between make-believe and reality, between what is *make-believedly* non-fiction and what is *really* fiction, works for the domain of language; and second, how a new *kind* of fiction, AR fiction, brings this interplay to the foreground. Overall, Pokémon GO gives rise to vexed issues in the philosophy of language. Fortunately, however, it also points towards some answers, in the linguistic as well as, potentially, other domains, and perhaps also to questions that have been raised in connection with more "traditional" fictions.

Game

POKÉMON GO. The Pokémon Company/Nintendo (developed by Niantic), 2016.

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