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**Why Don't 2D Jokes Fall Flat?**

**A Two-dimensional Interpretation of Russell's Joke about the yachts**

In his critical comments on “On Denoting”, Saul Kripke says that Russell's famous analysis of joke about yachts in terms of degrees and graded positives is incorrect. His criticism has given rise to a number of issues related to interpreting cross-world comparisons like “Х might have been greater than it is” in doxastic contexts like “John believes that P”. There have been many attempts to conceptualize such comparisons – e.g., "numeric", "object" and "mentalist" interpretation, discussed in detail in a series of articles 2013-2015 by Valery Surovtsev [Surovtsev 2013] and Evgeny Borisov [Borisov 2013, 2015]. I greatly indebted to their works, but for the moment I have to confine myself to one aspect of the problem, namely, cross-world predication in intensional contexts.

The main goal of this talk is to compare two approaches this issue. One is Wehmeier’s subjunctive modal framework which distinctive feature is the use of two explicit mood markers. The other is Chalmers’s generalized epistemic two-dimensionalism, based on the idea of assigning all our expressions two kinds of intensions. Despite the fact that these approaches have of lot in common, they provide different interpretations of belief reports about cross-world comparisons. I argue that epistemic 2D framework is philosophically more relevant here than subjunctive markers approach.

Dealing with the joke about yachts Russell [Russell 1905] makes use of the notion of quantifier scope and employs quantiﬁcation over certain abstract objects (degrees) associated with the predicates attributed across worlds. Let us recall the famous story of the irritable yachtsman:

When we say … “So-and-so is surprising” or “So-and-so is true,” etc., the “so-and-so” must be a proposition. Suppose now that “so-and-so” contains a denoting phrase. We may either eliminate this denoting phrase from the subordinate proposition “so-and-so,” or from the whole proposition in which ‘so-and-so’ is a mere constituent. Diﬀerent propositions result according to which we do. I have heard of a touchy owner of yacht to whom a guest, on ﬁrst seeing it, remarked, “I thought your yacht was larger than it is”; and the owner replied, “No, my yacht is not larger than it is”. [Russell, 1905, p. 52].

Let us denote the original sentence as (1) and its possible interpretation as (2) and (3):

(1) I thought your yacht was larger than it is.

(2) The size that I thought your yacht was is greater than the size of your yacht is.

(3) I thought that the size of your yacht was greater than the size of your yacht.

Now the misunderstanding can be explained in terms of quantifier scope. Sentences (1) and (2) turns into the following formulas (where s(*y*) stands for “the size of *y*”, and B is the doxastic operator “the guest believes that”):

(2’) *x*(B(*x*=s(*y*)) & *x*>s(*y*))

(3’) B*x*(*x*=s(*y*) & *x*>s(*y*))

According to Russell, (2’) is what the guest actually meant, whereas (3') is the meaning attributed to him by the yachtsman. Kripke notes that Russell is right in general: “scope does matter in intensional contexts” [Kripke, 2005, p.1005]. At the same time he alleges that (2') fails adequately to formalize (2), because it attributes an overly specific view to the guest, namely the view of the form B(*x* = s(*y*)), which implies existence of a unique size the guest thought the yacht was [Kripke, 2005, p.1021].

The Russellian “degree approach” faces some conceptual problems with **apriority** (Russell supposes that the guest previously had some idea of the size of the yacht, but that need not be true), **vagueness** (Even if the guest had some idea of the size of the yacht, it need not be exact) and **platonism** (This approach has strong “ontological commitment” to certain abstract objects – degrees and positives). The issues listed above indicate that the “degree approach” to analysis of sentences like (1) is rather questionable. At the same time, the very idea of disambiguating such sentences in terms of scope seems to be efficient.

Kripke'spossible worldssemantics (PWS) for standard quantiﬁed modal logic (QML) implements the idea of scope very carefully. The quantifier scope (wide in (2’) and narrow in (3’)) determines the domain of quantification, which changes from world to world, and contains only the objects that actually exist in a given world. However, QML fails to capture some patterns of expression typical in many natural languages. Consider the following example:

(4) Some people could have been richer than they really are

Let R stand for “richer than”. How would one formalize (4)? On the one hand, a moment’s reﬂection shows that

(4’) *х*R(*x*,*x*)

doesn’t work. This says that for someone there is a possible world where she is richer than herself (in that world). On the other hand, it doesn’t take much to see that

(4’’) *х*R(*x*,*x*)

is also incorrect, because this says that in some possible world, someone (in that world) is richer than herself (in that world).

The most important feature of (4) is that it makes *cross-world comparisons*. This sentence relates objects in one world to *the same* objects *in another world*. Thus, QML fails to formalize some simple examples of cross-world predication. This is not just a syntax problem, because the core idea of PWS is largely the idea that all cross-world relations between individuals must be logically reducible to intra-world properties and relations.

Wehmeier [Wehmeier, 2012] proposes a deliberated approach, based on subjunctive modal logic (SML). Instead of inventing new operators, Wehmeier starts with distinguishing grammatical moods in the syntax (*i* for “indicative”, *s* for “subjunctive”). The mood markers applied to predicates indicate the worlds relative to which we calculate their extensions. For instance, R*i,s* should be interpreted as a relation between an object in the actual world and (perhaps the same) object in counterfactual world. For instance, the formalization for the sentence

(6) John could be richer than Mary is

should be the formula

(6’) R*s,i* (*j,m*).

This approach focuses on one type of intensional contexts, involving alethic modalities. Alethic modal operators are generally considered as indicating metaphysical possibility in terms of possible worlds. However, in Russell’s joke about yachts we have an example of epistemic (doxastic) modality, which reflects states of belief in terms of possible worlds. Although metaphysical and epistemic modalities have a lot formal features in common, they substantially differ in some philosophical aspects.

The main difference concerns the interpretation of the very notion of possible world. A metaphysically possible world is “a way the world might have been”, whereas an epistemically possible world (scenario) is rather “a complete description of what the world might be like together with the speaker’s location within that world”. Sometimes epistemically possible world are understood as *centered* worlds[[1]](#footnote-1).

The epistemic version of two-dimensionalism, developed by David Chalmers [Chalmers, 2004], can be used to isolate an aspect of meaning that meets our philosophical intuitions about the epistemic necessity and to show its priority to the metaphysical one. In this framework, the truth values of statements are relativized to possible worlds in two different ways: they depend both on what the facts in a “world of evaluation” are and on what the sentences mean in (a perhaps the same) “world of reference”. The key idea is that possible worlds can play two distinct roles: they serve as contexts of use (WA: worlds considered as *actual*), and as circumstances of evaluation (WC: worlds considered as *counterfactual*). In this framework every expression has at least two intensions: (1) its *primary intension* is a function *f*: WA → E from actual worlds to extensions; (2) its *secondary intension* is a function *f*: WC → E from counterfactuals worlds to extensions.

In addition to this general semantic framework, Chalmers proposes a special account of modal epistemology, widely known as modal rationalism (MR). This account establishes a secure link between *a priori* conceivability and metaphysical possibility:

(MR) Every epistemically possible scenario – a complete description of what the world might be like together with the speaker’s location within that world – describes a genuine metaphysically possible (centered) world.

Given this assumption, two-dimensionalism becomes a fruitful approach to the analysis of Russell's joke. Taking primary intension as epistemic intension one could explain the ambiguity of (1) in terms of centered worlds. What is required for a term to have an epistemic intension for a speaker is for that speaker to have the ability to identify extensions for a term given various hypotheses about the actual world. Therefore, the yachtsman’s mistake is not an evaluation of his guest’s sentence in a wrong world, but setting a wrong center in the right world. It is rather the primary intension of “the yacht” that creates a problem, not the secondary one. Let us consider

(2’’) *x*(B(*xs*=*iy*) & *xi*>*iy*)

as a formalization of (2). This says that there is an object *x* in the domain of a possible world *w* accessible to the actual world @,such that in *w* it is true that *x* (in *w*) equals to *y* (in @), whereas in @ it is true that *x* (in @) is larger than *y* (in @).

I argue that (2’’) formalizes (2) more accurately than (2’) does, because (2’’) takes into account the cross-world nature of “=” within the clause expressing belief of the guest. Besides, it is not committed to degrees.

At the same time, it is worth noting that the difference between identity (=) and counteridentity (*s*=*i*) is not clear within Wehmeier’s framework. One could think that these two relations are basically of one kind, both stating the metaphysical identity of secondary (i.e. standard) intensions. In my opinion, the picture is more complicated. The point is that sentence *xs*=*iy* state the identity of different intensions, namely the primary intension of *x* in <*w,g,t*> (centered world *w* with a designated agent *g* “guest” and time *t* of his belief) and the secondary intension of *y* in @. It should be clear, that metaphysical identity (=) is public, whereas counteridentity (*s*=*i*) is perspectival, determined by a specific agent’s point of view inside the world.

To sum up, CSML is a better analytical tool than QML, especially for the cases like a famous joke about yachts. However, the extended Kripke-style possible world semantics for CSML that has been developed by Wehmeier leaves some key epistemic features of Russell’s joke unattended. I argue that epistemic two-dimensionalism is philosophically more relevant here than subjunctive markers approach, because the centered worlds framework can be applied both to linguistic expressions and to thought contents. That is why I hope that the 2D-ineterpretation of jokes about belief attributions doesn’t let them fall flat.

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1. A centered possible world is a metaphysically possible world with a designated agent and time (given 2D assumptions about the plenitude of such worlds). [↑](#footnote-ref-1)