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The Bertrand Russell Society Bulletin

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Bertrand Russell, Dora Black Russell, and John Russell
Photo: George W.F. Ellis, source: London Metropolitan Archives
Text has been added to suit our annual meeting needs!

The June 2023 Annual Meeting in Iowa City!

BY LANDON D. C. ELKIND

1 Our 50th annual meeting

The Bertrand Russell Society 2023 and 50th Annual Meeting will be held in-person on June 17-18 at the University of Iowa in Iowa City, Iowa. It will be a hybrid meeting that also includes online-only participants and presentations by Zoom. We enjoyed excellent results from the hybrid format at the 50th annual meeting. Accordingly, we are excited for our second hybrid meeting as we broaden and enrich our community of scholars and activists.

2 Schedule information

Registration will be open from 3-5 pm on Friday, June 16, followed by A reception from 5-7 pm and an evening panel discussion from 7:15-8:15 pm.

Conference talks will begin on Saturday, June 17. Talks will be held also on the morning of Sunday, June 18. The Board meeting and Membership meeting will occur on those days well.

3 Conference Venue and Accommodations

All conference talks will take place in the Adler Journalism Building Room E254.

Reservations (off-campus or on-campus) will need to be made independently of the BRS, but attendees are welcome to reserve one of the blocked off rooms in the Iowa House Hotel, which is an accessible location alongside the Iowa River. The conference venue is also one block away from the Iowa House Hotel. Rooms are $106 and include parking and wireless internet. Book a room at https://iowahousehotel.uiowa.edu/ (or call 319-335-3513). **Use the group code 3022**.

4 Travel information

Travel information is available from the University of Iowa "Visit Campus" page (see the "Making Travel Arrangements" section). If you are flying, there are airports in driving distance in Cedar Rapids (about 30 minutes), Des Moines (about 2 hours), and Chicago (about 3.5-4 hours).

5 Registration information

All attendees, whether in-person or online-only, should register by Wednesday, May 31st, 2023 at this link: https://bertrandrussellsociety.org/annual-meeting-registration/.

Registration is FREE for all persons, whether in-person or online-only. Online-only attendees must register to get the Zoom link. Please use the same link as above.

An OPTIONAL donation of $20 will help us cover conference expenses (refreshments, Zoom hosting, etc.). You can make a donation at the registration page using the above link.

6 Speaker information

The draft program has been circulated to the BRS membership list. Updates to the program will be posted as needed here: https://bertrandrussellsociety.org/papers/.

7 Zoom Software

The Zoom link is here. Online-only participants will need to download Zoom, a free online video conferencing software that is easy to use and readily allows for dozens of simultaneous connections. Presenters must be BRS members (attendees do not need to be BRS members)

Please also note that you must be a member of the Bertrand Russell Society to present at the annual meeting. This applies to online and in-person speakers. Attendees who are not giving a talk can still attend without being a BRS member. You can check your membership status here: https://russell.humanities.mcmaster.ca/brsmembers.htm.

You may join (or renew membership in) the BRS, and see the many benefits of membership, at this link: https://bertrandrussellsociety.org/join/.

8 Questions?

You may contact us at https://bertrandrussellsociety.org/contact/.

Skeptical Scenarios and Truth Conditions for Philosophical Claims

BY RICHARD FUMERTON (UNIVERSITY OF IOWA)

I have always been sympathetic to the idea that one can do philosophy "from the armchair." But how do we decide such netaphilosophical questions without presupposing some understanding of philosophy? We certainly don't want to be seduced into thinking that we need to ask meta-metaphilosophical questions before we try to do metaphilosophy—we know where that will lead. We will be soaring endlessly into the increasingly rarified air of ever higher-level meta-questions.

One approach is to consider briefly a few paradigmatic philosophical questions with an eye to discovering what those questions have in common. But because I'm interested in making a plausible case for the conclusion that fundamental philosophical controversies cannot be settled by the empirical sciences, you can be sure that I will select questions (there are many) that science could never answer. My critics will complain. Is there another way of reaching the same conclusion about philosophy?

A Controversial Suggestion: To understand the subject matter of philosophy it might be useful to think about an analogy from epistemology and a familiar argument for the internalist's view about the truth conditions for epistemic claims about justification. That argument invokes an appeal to skeptical scenarios.

When we ask ourselves what reason we have for thinking that there is a a physical object before us that is brown and rectangular, our first response might be to suggest that we just see it. The object is "there" before us. But no matter how vivid our visual experience might be, can't we at least make sense of the possibility that we are having an experience with that intrinsic character even though the object we take to be its cause isn't there? As Descartes argued, can't we make sense of the possibility that we are dreaming or are being deceived by some evil demon with powers to induce massive and vivid hallucination? Can't we make sense of being brains in a vat hooked up to devices that produce the same neuronal patterns that are the immediate cause of experience (if the world is as we think it is). Once we concede that these skeptical scenarios are intelligible, the question is then asked: Wouldn't the justification you would have for believing what you do about the physical world (falsely as it turns out) in the skeptical scenarios be just the same as the justification you would have had if the experience were veridical (should the experience be caused in the way you think it is)? A great many philosophers think that the answer to this question is "Yes."

Just as the truth of claims about my justification for believing what I do about the physical world is compatible with all of my beliefs about the physical world being false, so also, I would suggest, the truth of fundamental philosophical claims is also compatible with most radical skeptical scenarios. When I ask myself what knowledge is, what properties are, what causation is, what value is, what perception is, what a physical object is, what mental states are, I am often not sure what the answers are to the questions. But I can't see how my answering correctly those questions requires my having true beliefs about the existence of other people (let alone their linguistic habits), the physical world, or the future. If any of the radical skeptical scenarios are true, I would be bereft of friends, family, people who love me, people who hate me—the truth of skeptical scenarios would rob me of all these. But I could still take comfort in the possibility that I have whiled away my life discovering interesting philosophical truths. Evil demons, computer-generated matrix-like worlds, my being a brain-in-a-vat--none of these possibilities, if actual, would stop me from practicing philosophy, nor would they stop me from arriving at satisfying philosophi-

cal truth.

The above view is, to be sure, radical. But before you dismiss it out of hand, it is worth keeping a couple of things in mind. First, on one standard philosophical reading, general claims about kinds of things have no existential import. It can be true that X's are Y's even if there are no X's. The proposition that everyone who is 12 feet tall is taller than I am is true. And it is true even if there is no-one who is over 12 feet tall. It can be true that all bodies in motion upon which no forces are acting continue in motion, and it can be true even if there are no bodies in motion upon which no forces are acting. Philosophers make general claims about knowledge, veridical perception, mind-independent physical reality, justice, lawful connection, causation, and many more sorts of things. But it is not clear that any of those claims entail that there is knowledge, veridical perception, mind-independent physical reality, justice, lawful connection, or causation. Of course, neither the philosopher nor the scientist is interested in general propositions that are true simply because they are vacuous. It might be true that all mermaids have pink eyes (and that they all have blue eyes) just because there are no mermaids. A philosopher is interested in general truths that are, in some sense, necessarily true. The scientist is interested in general truths that are, in some sense, lawfully necessary.

A closely related observation is that a conditional can be true in an interesting way even if the antecedent of the conditional is false. Well-known counterexamples that are supposed to present difficulties for various philosophical views are not intended to be descriptions of actual situations. Rather, the counterexamples involve descriptions of hypothetical or possible situations. When Russell (in some respects anticipating Gettier) argued that knowledge isn't merely justified belief (and he could easily have added, justified true belief), by asking you to think about a person forming a true belief by looking at a broken clock (that happened to be reading the right time), he wasn't describing some some actual person and some actual broken clock. The argument involved a thought experiment.

The conditional, then, can be the philosopher's best friend. By turning to conditionals philosophers can often find a necessary truth knowable a priori. The conditional can replace an unconditional assertion that is clearly knowable only by employing the methods of empirical sciences. As an illustration, if I were interested in philosophical questions concerning free will, I might make the claim that no-one acts freely because everything has a cause. Alternatively, I might be content qua philosopher to argue just for the incompatibilist thesis—the thesis that if everything has a cause, then no-one ever acts freely. The former claim (contra Kant) requires empirical evidence that everything has a cause. The latter claim may not.

What's Left? Let's suppose for a moment that the truths discovered by fundamental philosophy are compatible with well-known skeptical scenarios. What kind of truths would be left as potential objects of philosophical investigation?

Answering that question requires a book. But on my view, philosophy begins with phenomenology. Talk of employing the method of phenomenology is just a kind of pretentious way of talking about paying close introspective attention to the character of one's experience. Philosophers sometimes debate the wisdom of adopting the first-person perspective when doing philosophy. They sometimes talk about this as if there is some alternative. There isn't. You and I can only approach the world we are interested in discovering by beginning with our own experiences and the thoughts to which those experiences gives rise. The most fundamental question in metaphysics is the question of what exists. On the foundationalism I embrace, one strongly influenced by Russell, direct acquaintance gives you knowledge that you and your current experiences exist. It doesn't give you knowledge of the experiences of anyone else. It doesn't even seem to give you knowledge of your past existence (though Russell wasn't always sure about this last claim).

There is an even more controversial view about the role of direct acquaintance, one that can be traced to the radical British empiricists. Hume argued that all ideas are "copies" of prior impressions. The thesis as stated is wildly implausible, but Hume immediately made clear that he was prepared to restrict the claim to "simple" ideas.

My own view is at least related to a Humean view. I think it also finds expression in many of the writings of Russell. In deciding questions about the foundations of thought, I think it is important to make a distinction between what we think of directly and what we think of only indirectly. Some things—perhaps even most things—we think of only by thinking of other things. I can, in some sense, think of the tallest person in the world today. I even have beliefs that are, in some sense, about the tallest person. I believe, for example, that the tallest person in the world is taller than I am. As Russell taught us, the content of the belief in question can be described using quantifiers. Arguably, my belief that the tallest person is the world is taller than I am is no more than the belief that there is just one person who is taller than everyone else and who is taller than I am. While my belief is, in some sense, about the tallest person, it is also true of me that I don't in fact know who the tallest person is. My thought of that person is indirect in that I can think of height, I can think of being a person, I can think of the relation of being taller than, and because I can also think of there being just one. . . , I can form the complex thought of the one person who is taller than everyone else. My thought might not correspond to anyone. There might be no one person taller than everyone else.

It is an interesting, important, and controversial question as to what thoughts are indirect in the sense described above. But on some rather plausible (though very controversial) views, all of my thought about the physical world is indirect in just the way we have been discussing. On such a view I can think of perceiver-independent physical objects but only as whatever it is that occupies a certain potential causal role in producing networks of sensations of various sorts. In the same sense, perhaps my thought of other people is similarly indirect—indeed doubly indirect. I can think of you but only as the mind causally responsible for movements of a certain body (including, of course, sounds and marks produced by that body).

But not all thought can be indirect. If it were we couldn't think of anything. What are the plausible foundations of thought—the conceptual atoms out of which we can build more complex ideas? Well, we can obviously "bring to mind" the specific qualitative character of the sensations we have had (or seem to remember having had)—pain, euphoria, visual, tactile, auditory, olfactory, gustatory sensations. Or at least we can with effort. Contemporary philosophers have often complained that the radical empiricists implausibly over-intellectualized what goes on both when we perceive and think about the physical world. The appearances presented by the physical world are in constant flux, but even at a very early age we start thinking about the world in terms of "stereotypical" appearance—some standardized appearance associated with shape, texture, color, smell and taste. To notice that visual appearance, for example, is constantly changing, and to notice how it is changing involves a kind of skill—the skill that a good painter acquires. There is a reason your young child's artwork is displayed only on your refrigerator. The rectangular table is usually 'drawn as a two-dimensional rectangle with four straight lines underneath. Even ancient Egyptian "professional" artists charged with decorating the tombs and monuments of pharaohs seem to have had a terrible time understanding perspective and producing images that capture the way ordinary objects look. But from the fact that we don't notice the constant change of experience as our relation to objects shift, it doesn't follow, of course, that the change doesn't occur. Nor does it follow that we aren't capable of focusing our attention in such a way that we notice and think about the subtle changes in experience.

We must be careful not to overstate what belongs in the foundations of thought. There is another problem discussed in great detail by the British empiricists—the problem of abstract ideas. I can think about particular shades of red, particular shapes, particular textures, particular sensations of pain, but such thoughts don't by themselves answer the question of what makes something red, round, rough, or painful. Consider the last. There are many differences between kinds of pain. Sharp piercing pain, dull throbbing pain, mild headaches, persistent back pain, and painful lectures are all painful experiences. But what do they all have in common? What is it in virtue of which all of these are pains? This is a question that isn't decided by introspection. This is a question about the analysis of pain.

Russell seemed to argue in *The Problems of Philosophy* that the objects of acquaintance include not just determinate properties, but generic properties (also sometimes called determinable properties). And acquaintance with determinables, according to this view, gives rise to thought about determinables. So what is supposed to be this difference between a determinate property and a determinable property? Well think of the paint chips you look at in the paint store. Each chip has a particular color and the paint store typically invents a name to refer to just that way of being blue, say. Until you face the bewildering choice of colors to paint a room, you might have had no idea that there were hundreds, if not thousands, of different ways of being blue. But they are all ways of being blue. In addition to being this or that particular shade of blue, there is being light blue, being dark blue, being light-greenish blue, being light-greyish blue, and of course just being blue. These properties are called determinables because it seems that something has the more general property of being blue, for example, only in virtue of its having one or another of those determinate shades of blue. The blueness of this shirt is determined (in a sense that requires explanation) by that very particular shade of blue that is so specific it probably can't be described using language other than by using demonstratives. Again, one might suppose that just as we can experience a particular shade of blue and think of that very shade in its absence, so also we can simultaneously experience and think about the many more abstract properties that are determined by that particular shade of blue.

Was Russell right? Are there both determinate and determinable properties. Are we also directly acquainted with determinable properties, and can we think directly of determinables? Also, should we think (as Russell did) that a priori philosophy consists of discovering relations among determinable properties (universals). These questions are difficult. I do worry about the view that the task of analysis is just to "get before mind" various universals. I worry that on such a view philosophy would be "too easy." I have at least some sympathy with the radical empircist's view that the world as experienced is perfectly determinate in its character. There is, however, abstract thought. Thinking about what it is to be blue is different from thinking about what it is to be some perfectly determinate shade of blue. Thinking of being triangular is different from thinking of some particular triangular shape. But this almost obvious truth doesn't answer the question of what abstract thought is. On one dialectically attractive view, one might claim that the ability to abstract something common to all the different shades of blue, for example, is simply unanalyzable. There is an abstract thought of blue and all the different shades of blue correspond to that abstract thought.

Alternatively, one might think of an abstract thought as a disjunctive thought. To think of being blue is to think of being either this color or this color, or this color. . . , where the "this color" picks out a specific way of being blue. Such a view makes the thought of being blue decidedly complex. Remember our paint store with the four pages full of samples of specific shades of blue. Furthermore, it is doubtful that any of us have succeeded in thinking of all of the different shades of blue. That, however, would be perfectly compatible with the fact that we have

a linguistic disposition to use the word "blue" to describe indefinitely many determinate ways of being blue (many of which we haven't yet experienced).

A closely related view takes abstract thought to be something like a constantly morphing thought. If I ask you to think of being blue, and emphasize that I don't want you to think only of some particular shade of blue, you may form a thought that "shifts" (or at least has the potential to shift) along a continuum, perhaps a continuum with "fuzzy" borders.

Lastly, one might wonder if there is nothing more to your possession of the concept of being blue than your being disposed to regard various particular shades of color as all correctly described as "blue." In one sense this view implies that philosophical analysis cannot be divorced from language. But, I would argue, it is crucial to emphasize that on the view we are considering. it is still thought that breathes life into language. Without the ability to think of features of the world (even if only determinate features of the world), there wouldn't be the ability to represent linguistically the world we inhabit. It is thought experiments that allow to discover how we use the language that we find philosophically interesting.

But if it is difficult to divorce abstract thought from language, how can we reconcile this idea with the claim that philosophical truth is compatible with skeptical scenarios? The answer is complicated, but as Moore (1901) argued, it should be a desideratum of any plausible view of philosophy that we distinguish philosophical analysis from lexicocraphy. If we are studying the way ordinary people use a natural language, we are practicing without a license. Still, if it is difficult to begin our philosophical analyses by leaving language behind, what is the alternative? The answer I would argue is that we begin with our own use of language. From that we move to properties. From properties we move to a discovery of relations among properties. That, however, is the just the barest sketch of a very long story about the nature of philosophy.

Russell's 1922 Refutation of Ramsey's Review of Keynes's A Treatise on Probability

BY MICHAEL EMMETT BRADY (CALIFORNIA STATE UNIVERSITY)

Ramsey gave one example in his 1922 *Cambridge Magazine* review of Keynes's *A Treatise on Probability* (TP) and three other, practically identical, examples in his 1926 "Truth and Probability" review, published in 1931 and republished in (Kyburg and Smokler, 1980). Ramsey claimed that these examples refuted Keynes's logical theory of probability. Russell showed that Ramsey's examples do not refute Keynes's theory because all of them are badly flawed, either in part or whole. Consider the first paragraph of Ramsey's 1922 paper (Ramsey, 1922, p. 3).

> Mr. Keynes takes probabilities or probability relations as indefinable, and says that if q has to p the probability relation of degree a, then knowledge of p justifies rational belief of degree a in q.

This is an incomplete statement of Keynes' position since Ramsey never states that the propositions p and q must be related and /or associated to one another in such a way as to form an argument. Keynes's argument form requires that one proposition (the premises denoted by h) provides relevant evidence for the second proposition (the conclusion denoted by q). Further, there can be more than one premise and/or more than one conclusion. It is not restricted to one h proposition and one a proposition as asserted by Ramsey without any citation to any page in the *A Treatise on Probability*.

Consider the third paragraph in Ramsey's note (Ramsey, 1922, pp. 3-4):

> First, he [Keynes] thinks that between any two non-self-contradictory propositions there holds a probability relation (Axiom I), for example between 'My carpet is blue' and 'Napoleon was a great general'; it is easily seen that it leads to contradictions to assign the probability 1/2 to such cases, and Mr. Keynes would conclude that the probability is not numerical. But it would seem that in such cases there is no probability; that, for a logical relation, other than a truth function, to hold between two propositions, there must be some connection between them. If this be so, there is no such probability as the probability that 'my carpet is blue' given only that 'Napoleon was a great general', and there is therefore no question of assigning a numerical value.

Nowhere in anything written by Keynes in his lifetime does he state "... that between any two non-self-contradictory propositions there holds a probability relation (Axiom I)..." Again, Ramsey makes the same mistake that he did in his opening paragraph–Ramsey ignores the precise argument form that the propositions must have in order to satisfy Keynes's definition of argument form on pages 4-6 of the TP. The claim made by Ramsey has nothing to do with Keynes's use of propositions, which must be stated in the form of an argument (Keynes, 1921, p. 4)–one proposition must contain relevant evidence while the second proposition must be a conclusion with respect to the proposition containing the relevant evidence. Only then is a relation of logical probability present. Nowhere at any place in his *A Treatise on Probability* or any other work written in Keynes's lifetime did Keynes state "... that between any two non-self-contradictory propositions there holds a probability relation (Axiom I)..." (Ramsey, 1922, p. 3). Further, there is no such Axiom I in Keynes's *A Treatise on Probability*. Therefore, Ramsey's "'My carpet is blue' and 'Napoleon was a great general'" example is worthless because his two propositions do not form an argument

form (see Keynes, 1921, p. 4). Ramsey's example is simply gobbledygook. Nor would Keynes ever claim that "the probability is not numerical" (Ramsey, 1922, p. 3). Keynes would conclude that the probability is not defined.

In his July 1922 review of Keynes's *A Treatise on Probability*, Russell provided a counter-example that showed that Ramsey's examples all dealt with unrelated and/or irrelevant propositions that did not meet Keynes's necessary requirements to form what Keynes called an argument (TP, 1921, p.4). Bertrand Russell showed how easy and straightforward it is to refute Ramsey's assertions on page 120 of his July, 1922 review of Keynes's book for the *Mathematical Gazette* in his star footnote made after Russell had discussed Keynes's relevance-irrelevance logic, contained on pp. 52-56 of the TP, on page 120 of his article (Russell, 1922, p. 120, footnote *):

> '2+2=4' and 'Napoleon disliked poodles'.

All of Ramsey's examples are of the same form as the example provided by Russell above in 1922. The prevalent, nearly universal, belief that Ramsey had identified serious logical and epistemological errors in Keynes's technical modelling has no support

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A Theory of Propositional Attitudes

BY DENNIS DARLAND

In *The Problems of Philosophy*, pp. 125-126, Russell analyses "Othello believes that Desdemona loves Cassio". His suggested definition is that this is a relation between all four terms. (Othello, *loving*, Desdemona and Casio). However, Russell is simplifying a bit. It is possible that one or more of the terms might not exist. Otherwise, one could infer from a belief about a term (e.g. God) that the term existed. Russell could handle this with his theory from "On Denoting." This would require the belief to also involve terms for some predicate, quantification, and equality. I think there is a simpler solution. Othello's belief is a relation in his mind between his idea of loving, his idea of Desdemona, and his idea of Casio. The ideas can exist even if there is no corresponding object. Also, the ideas are ordered in a relation in Othello's mind. I am going to suggest a theory of propositional attitudes. I do not believe that I can prove it to be correct. I do think it can account for some difficulties that some other theories have difficulties with. I propose three relations R, S, and T of meaning:

> R is a relation of meaning between a word and an idea.
>
> S is a relation between an idea and exactly one object.
>
> T is a relation between an idea and zero or more (even possibly infinite) number of objects.

I will also find the relative products $R|S$ and $R|T$ to be useful.

> $x(R|S)z = df\ (\exists y)(Rxy \wedge Syz).$

I will not provide definitions of R, S, or T. I do not think that they are theoretically indefinable, but that such definitions would be very complex. What is important for me is some of their properties in propositional attitudes. Note that words and ideas are themselves objects and there can be both words and ideas about words and ideas. Also note, that the R, S, and T relations depend on an intelligent subject (person), and particular time, But, for convenience, I will not always specify them. Another relation I will propose (but not define) is the relation of psychological belief which I will denote as B. It is be a relation of ideas.

My notation, as applied to this case of Othello believing that Desdemona loves Cassio, is as follows:

> B(Othello, idea of loving, idea of Desdemona, idea of Casio).

The belief is true if

> S(idea of loving, loving) $\wedge$ S(idea of Desdemona , Desdemona) $\wedge$ S(idea of Casio, Casio) $\wedge$ $loving$(Desdemona, Casio).

Where A is the relation of asserting, Othello asserting that Desdemona loves Cassio would be captured as:

> A(Othello, "loving", "Desdemona", "Casio")

The assertion is true if

> "loving"(R|S) loving $\wedge$ "Desdemona"(R|S) Desdemona) $\wedge$ "Casio"(R|S) Casio $\wedge$ $loving$(Desdemona, Casio).

It should be noted that for propositional attitudes there are generally seven cases to consider as specified,

1 (words)
2 (ideas)
3 (objects)
4 (words, ideas)
5 (words, objects)
6 (ideas, objects)
7 (words, ideas, objects).

Sometimes some of the above are not useful. For simplicity, I will not consider all these here.

One difficulty my relations are intended to solve is that of opacity. For example, in Quine's *Word and Object* (MIT Press, 1960, pp. 141-146) the term "transparent" is attributed to Russell's new Appendix C which appeared in vol. 1 of the second edition of Whitehead and Russell's *Principia Mathematica* p. 665. (Russell alone was responsible for Appendix C.) Quine uses the example:

Tom believes that Cicero denounced Catiline.
Cicero = Tully.
Tom believes Tully did not denounce Catiline.

This is apparently a failure of substitutivity of identity. Quine acknowledges that the example derives from the Paradox of Belief of Frege's "On Sense and Reference". On my theory, we have in the case of Tom, the following which captures the first statement:

B(idea of denounced, idea of Cicero, idea of Catiline).

The following captures the third statement:

B(idea of not, idea of denounces, idea of Tully, idea of Catiline).

These are Tom's ideas – the words are public. Thus:

R("denounced", idea of denounced)
R("Cicero", idea of Cicero)
R("Catiline", idea of Catiline)
R("Tully", idea of Tully)
S(idea of Cicero, Cicero)
S(idea of Tully, Cicero).

Since, S is a many-one relation there is no conflict or paradox. Tom's idea of Cicero is not Tom's idea of Tully. People come to have mostly common $R|S$ and $R|T$ relations because the publicly used words and objects standing in those relations are often rather stable for all using them. But there are exceptions, for example, as in the above case of Tom. For example,

"Cicero" (R/S) Tully $i.e.$., $(\exists y)(R$("Cicero", $y) \wedge S(y$, Tully))

The ideas– which might be figuratively said to be in the "middle" need not be the same for two people even though the $R|S$ and $R|T$ relations agree. (I believe the analysis can be further improved by using Whitehead's concept of a "defining characteristic". But the problem of opacity can be solved without adding that complexity.)

Note that in the natural language expression "Cicero = Tully" we have two signs for the same object, namely "Cicero" and "Tully." Allowing this is in opposition to Wittgenstein's view in his *Tractatus Logico-Philosophicus*. (In the programs WildLIFE and Prolog it is not allowed.) I agree with Wittgenstein in the passages:

> 5.53 Identity of object I express by identity of sign, and not by using a sign for identity. Differences of objects I express by difference of signs.
>
> 5.5302 Russell's definition of '=' is inadequate because according to it we cannot say two objects have all their properties in common. (Even if this proposition is never correct, it still has sense.)
>
> 5.5303 Roughly speaking, to say of two thing that they are identical is nonsense, and to say of one thing that it is identical with itself is to say nothing at all.

I hold that, in fact, the existence of different signs for the same object is the source of the apparent problem of opacity itself. However, with the relation $R|S$ we have a way out. Most people in a linguistic community will agree on their $R|S$ relations. So generally:

$(\exists x)(\text{"Cicero"}(R|S)x \wedge \text{"Tully"}(R|S)x)$.

This more clearly shows what "Cicero=Tully" indicates. But I think it is still incomplete. I think we need further analysis which would be to adopt relation such as:

$P(x, y, z)$: x and y are parts of person z.

(The notion is influenced by Whitehead's notion of a "defining characteristic" in his 1929 *Process and Reality*.) Now I have:

$(\exists x)(\exists y)(\text{"Cicero"}(R|S)x \wedge \text{"Tully"}(R|S)y \wedge (Ez)(P(x, y, z))$.

But for the purposes in this brief paper we need not try to pursue such an analysis any further.

Although my theory does not depend on any particular theoretical analysis of the R, S and T relations, I think that the ideas are created in a mind by exposure to the $R|S$ or $R|T$ relations. I think this occurs mainly as in Wittgenstein's later philosophy and may even best address his famous discussion of the "Beetle in the Box" in his *Philosophical Investigations*. But the $R|S$ and $R|T$ relations hide the inner [idea] term. Wittgenstein argues against the inner as it need not be the same for two people. But I maintain, at least, that there needs to be public confidence that there is something in the middle. A further consequence of my analysis is that the possibility of private languages can be better understood. This would occur when, for some person at some time:

$(\exists y)((\exists z)S(y, z) \wedge \sim (\exists x)R(x, y))$.

Many of us are notoriously bad at remembering names, and it often happens that one can think (have an idea of) a person but be unable to name or even describe the person. In such a case, I claim, one has, at least for a short time, a private language (of ideas).

In closing, it is worth noting that my analysis would seem to eliminate the need to apply Russell's theory of classes to capture extensionality. (He needs classes to be extensional, but he believes some predicates are intensional.) For example, in *Principia Mathematica* (2nd ed., vol, 1, p, 73) we find, for example, that

$(x)(\hat{\varphi}(x) \supset \text{mortal}(x))$

is said to be an extensional function of φ. In contrast,

A believes that $(x)(\hat{\varphi}(x) \supset \text{mortal}(x))$

is not an extensional fuction of φ . It is clear that the following is invalid:

A believes that $(x)(\text{human}(x) \supset \text{mortal}(x))$
$(x)(\text{human}(x) \equiv \text{featherless biped}(x))$
Therefore, A believes that $(x)(\text{featherles biped}(x) \supset \text{mortal}(x))$.

On my theory, where the ideas of those of A, the case can be handled as follows

(x)(T(idea of human, x) iff T(idea of featherless bipedhood, x).

That is, one can hold that for any object, x we find that T(A's idea of human, x) iff T(A's idea of featherless biped, x)– although A need not know or even believe it). At the same time, A's idea of human is not A's idea of featherless bipedhood.

In my WildLIFE code, I define membership in a class, equality of classes and predication of classes in terms of the relations R and T. Much of this is worked out in detail in the Artificial Intelligence Language WildLIFE at:

https://dennisdarland.com/darland_philosophy/HTML/darland_philosophy.html

Logic Corner: A Clarification of *Principia*'s ∗37·62

BY GREGORY LANDINI (UNIVERSITY OF IOWA)

I wish to clarify a theorem in *Principia Mathematica*. The comment on the theorem is important because the point is to illustrate a valid inference in logic that cannot be captured in the traditional Aristotelian categorical logic. This inference is this:

> All horses are animals; Therefore, all creatures with the head of a horse are creatures with the head of an animal.

Categoricals cannot capture it because it requires a logic of relations. One can say that all creatures with a horse's head are horses. And since all horses are animals, one can validly conclude that all creatures with a horse's head are animals. But we cannot properly hold that all animals are creatures with an animal's head. No Aristotelian sorites can get to the conclusion that all creatures with a horse's head are creatures with the head of an animal. Yet the inference is clearly valid.

Now Whitehead and Russell focus on the problem that one cannot properly hold that all animals are creatures with an animal's head. Let α be the class of animals. Since e.g., oysters are among the members of α none have a head. (The same goes for hydras.) Thus, one needs an extra premise that there exists the head of a member of α in question. Thus, the Aristotelian is correct that one cannot properly hold that all animals are creatures with an animal's head. Whitehead and Russell write (PM, p. 291):

> *37.62 $\vdash \mathrm{E!}R`y \bullet y \in \alpha \,.\supset.\, R`y \in R``\alpha$
>
> The above is the type of inference concerning which Jevons says: "I remember the late Prof. De Morgan remarking that all of Aristotle's logic could not prove that 'Because a horse is an animal, the head of a horse is the head of an animal'." It must be confessed that this was a merit on Aristotle's logic, since the proposed inference is fallacious without the added premise "E!(the head of the horse in question)." E.g., it does not hold for an oyster or a hydra. But with the addition of E!$R'y$, the above proposition gives an important and common the of asyllogistic inference.

What does *37.62 say? It says that if E!$R`y$ (i.e., if the there is a unique x such that xRy) and $y \in \alpha$ then the unique x such that xRy bears R to some member of α. Applied to the case at hand, let α be the class of animals, and let xRy say that x is a head of y. Thus, *37.62 says that if there is a head of y and y is an animal, then the head of y is a head of some animal. But a clarification is needed to return the issue to what Jevon's was saying about De Morgan's challenge to the Aristotelian categorical logic.

What theorem captures what De Morgan had in mind? Let β be the class of horses. We have:

$$\vdash \beta \subseteq \alpha \ :\supset:\ \mathrm{E!}R`y \bullet y \in \beta \,.\supset.\, R`y \in R``\alpha.$$

Note that given the antecedent $\beta \subseteq \alpha$, the clause $y \in \beta$ yields $y \in \alpha$. This is the link to *37.62, since it yields our above theorem. We get:

> $\beta \subseteq \alpha$; Therefore, $(y)(\mathrm{E!}R`y \bullet y \in \beta \,.\supset.\, R`y \in R``\alpha)$.

This is a valid inference that no Aristotelian categorical logic can capture.

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