

# THE SECOND WORLD CONGRESS ON ANALOGY

Poznań, Poland, May 24-26, 2017



## HANDBOOK

Edited by

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ADAM MICKIEWICZ  
UNIVERSITY  
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# HANDBOOK OF THE SECOND WORLD CONGRESS ON ANALOGY



Poznań, Poland  
May 24-26, 2017  
[www.analogycongress.com](http://www.analogycongress.com)

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Estelle Carciofi, Katarzyna Gan-Krzywoszyńska, Małgorzata Leśniewska,  
Przemysław Krzywoszyński

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# 1. Invitation to the Second World Congress on Analogy

*But the first man who noticed the analogy between a group of seven fishes and a group of seven days made a notable advance in the history of thought.*

A. N. Whitehead

We are very happy to launch The Second World Congress on Analogy. After the First – and may we say very successful – Congress in Puebla, Mexico in November 2015, we continue this fascinating analogical journey. This time it is taking place in Poznań, Poland.

We have developed the project further, and following the great thought of Iris Apfel (that *more is more and less is a bore*), we have more of everything, eight distinguished keynote speakers, covering different research areas (such as zoology, logic and metaphysics) and countries (Mexico, USA, Italy, Japan, Portugal and Poland), special invited talks (on analogies in Miss Marple's investigations and the role of analogy in intercultural communication), and equally impressive contributed talks. We hope that the series of World Congresses on Analogy will continue on as the a platform of dialogue between philosophers, artists, and scientists, and between young PhD students and venerable scholars and professors – all of them always young at heart.

The Second World Congress on Analogy covers analogical research – both theories and their applications – in philosophy, logic, cognitive science, linguistics, political science, biology, theory of culture and theory of information. We have also many interdisciplinary approaches, including an examination of analogy in the areas of music and cryptology, and an original study that merges mathematical proofs with jokes.

This time we have placed a special emphasis on analogies between science and art (see Olga Pombo's lecture and other talks on arts: literature, painting, music). We have developed our artistic program, which we hope will continue to build analogical bridges not only between formal disciplines such as mathematics, logic, information theory, theoretical linguistics, on the one hand, and the natural sciences on the other, but also between both of them and the humanities and with various works of art.

Chesterton once wrote that *Thanks is a highest form of thought*, so let us express the most sincere gratitude to all of our sponsors and partners (you will find them below), as well as to every thoughtful person who has helped us along the way. We firmly believe that all together we have already created a great team which has just started to showing its wonderful potential. We are delighted to welcome new participants, and hope that they will apply to join the future conferences on analogy that are being planned.

We continue the idea of including artistic events in every Congress. During this Second World Congress on Analogy we will have the opportunity to attend an exhibition of photographs by Sylwia Pawłowska. We will also enjoy superb musical events, including a unique and special concert by Professor Barbara Kubiak, the wonderful soprano soloist, with arias from *Otello*, *Aida* and *Tosca*.

We are planning to keep the World Congress on Analogy in Poznań and we would like to meet every two years to continue this interdisciplinary and international dialogue on the theory and applications of analogy. We have a new permanent website of the event ([www.analogycongress.com](http://www.analogycongress.com)), with current information and contacts (as well as social media: Facebook, Twitter and Instagram), so suggestions and comments concerning this or future congresses are cordially welcome. We will also continue publishing information about the proceedings and other texts on analogy that can be particularly interesting for participants.

We wish you a very interesting and inspiring congress.  
Let us all enjoy the Second World Congress on Analogy!

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## 4. Abstracts of Keynote Talks

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Enrique DUSSEL

### *Analogy and Communication*

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Analogy makes possible dialogue between people. This dialogue, at the intercultural level and from distinct ontological comprehensions of life, cannot be achieved from a univocal prehension of meaning. Analogy permits, especially at the rhetorical level of political philosophy, an adequate interpretation of such complex concepts as people, state or rights. A semantics of these concepts by similarity allows us to advance in the process towards a better interpretation of the interlocutor in the dialogue, though it never reaches identity.

Piotr LEŚNIEWSKI

## “*Homo Compassibilis*”: The Art of Analogy-Making

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A therapeutic and the grammatical analogy were used by P. F. Strawson in his account of the concept of analytical philosophy. But the Rylean analogy of a map or charting, which Ryle also called the logical geography of concepts) has also been invoked in this context. Yet another analogy is explored here. For philosophical analysis, idealizations are considered as the construction methods of an appropriate image, or rather, of a correct caricature of a given object. Five paradigms of idealization are briefly presented. A model of the compassionate person is then developed, and analogy-making within the realm of its actions is described as an art of establishing such deep and meaningful social relationships as responsibility ( $x$  is responsible for  $y$ ), gratefulness ( $x$  is grateful to  $y$ ), love ( $x$  loves  $y$ ), etc. Leszek Nowak (1943-2009) was one of the founders and main representatives of the Poznań Methodological School. He emphasized the vital role of autonomous social relationships within the framework of the non-Marxian historical materialism. In *Property and Power* there appears the following passage: “The class struggle is possible, if the suppression is painful enough, but not too much, if the autonomous social relations enabling people to act commonly still exist. Pure socialism kills them and kills the society in the people. And the name *socialism* mystifies this ideologically.” The book was published in 1983, and after over thirty years the topic of autonomous social relationships is taken up here in an erotetic study. It begins with the question: *Why did agent X perform action A?* It is a natural basis for the development of a political concept of love in exactly the sense intended in *Commonwealth* by Michael Hardt and Antonio Negri.

### References:

- Almond, S. (2012). Introduction. *I Was Sugar Once: Lessons in Radical Empathy*. [in:] Ch. Strayed. *Tiny Beautiful Things. Advice on Love and Life from Dear Sugar*. New York: Vintag Books: 3-9.
- Badiou, A. (2008). What is Love? [in:] A. Badiou. *Conditions*. Translated by S. Corcoran. London-New York: Continuum: 179-198.



- Gan-Krzywoszyńska, K. & Leśniewski, P. (2013). On Reyes Mate's Theory of the Victim: A Meta-ethical Sketches on Injustice. *Ethics in Progress*. Vol. 4, No. 2.: 63-77.
- Gan-Krzywoszyńska, K. & Leśniewski, P. (2015). On Non-Rationalities in the Foundations of the Humanities: A Hexagonal Analysis of the Counterrationality Principle. *Studia Metodologiczne*. Vol. 35: 168-182.
- Gan-Krzywoszyńska, K. & Leśniewski, P. (2016). Analogies in the Meta-Methodology of the Humanities. *Studia Metodologiczne*. Vol. 37: 241-254.
- Hardt, M. & Negri, A. (2009). *Commonwealth*. Cambridge MA: The Belknap Press.
- Harris, S. (2010). *The Moral Landscape. How Science Can Determine Human Values*. New York-London-Toronto-Sydney: The Free Press.
- Ikäheimo, H. (2012). Globalizing Love: On the Nature and the Scope of Love as a Form of Recognition. *Res Publica* 18: 11-24.
- Leśniewski, P. (2015). Hacia la siguiente revolución. Contribución a la cuestión de la responsabilidad. *Analogía filosófica: revista de filosofía, investigación y difusión*. Vol. 29, No. 1: 31-51.
- Nowak, L. (1983). *Property and Power. Towards a Non-Marxian Historical Materialism*. Dordrecht-Boston-Lancaster: D. Reidel.
- Reich, R. B. (2012). *Beyond Outrage. What Has Gone Wrong with Our Economy and Our Democracy, and How to Fix It*. New York: Vintage Books.
- Sternberg, R. J. (1986). A Triangular Theory of Love. *Psychological Review*. Vol. 93, No. 2: 119-135.
- Sternberg, R. J. (1999). *Love Is A Story. A New Theory of Relationships*. New York: Oxford University Press.

Alessandro MINELLI

## *An Evo-devo Perspective on Analogy*

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To explain the amazing morphological and biomechanical analogy between two distantly related vertebrates such as the dolphin and the shark, an explanation framed entirely in terms of adaptation is far from satisfactory. The same is true, of course, of any other comparison between structurally similar, but phylogenetically unrelated organisms. Among the plants, for example, there are succulent species of spurge (*Euphorbia* spp., fam. *Euphorbiaceae*), some of them ranging from hemispherical to spherical, others columnar, that are amazingly similar to corresponding hemispherical to spherical or columnar species of a very different family, the *Cactaceae*. To be sure, all these forms are well-adapted to survive in arid places (in terms of the Darwinian survival of the fittest), but this does not explain how the developmental processes of their non-succulent ancestors could eventually evolve in such a way as to eventually produce these peculiar phenotypes, or the arrival of the fittest. How does Nature play with animal and plant form? To address the issue of the evolution of possible forms, we must take development seriously and adopt the integrated perspective currently known as evolutionary developmental biology, or evo-devo. Paths through the maze of living forms are not satisfactorily explained in terms of pure geometrical transformations (à la D'Arcy Thompson), neither in terms of simple combinatorics, involving archetypical modules such as heads, limbs and segments in animals (an Empedoklean scenario), or leaves, petals and stamens in plants. Evolvable and often recurrent conditions that we can describe as local state variables, such as vegetativeness in Prusinkiewicz's models of inflorescence evolution, offer instead a promising path into a solid biological explanation of analogy. Plausible scenarios of evolvability of living organisms cannot miss paying attention to the unceasing evolutionary changes in the kind and degree of modularity through which developmental processes operate, subject to constraints dictated by the anisotropy of the landscapes of genotypic and phenotypic change.

Olga POMBO

*Science and Art. Variations upon a Common  
Ground*

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Our first aim is to note some similarities and decisive differences between science and art. We know that there always has been a deep relationship between the two. We are able to identify, to remember and to point out some geniuses of the past who were at the same time great in science and in art. We are aware that science has had a great impact in art and conversely that many artists have taken science as inspiration for their work.

But if we are obliged to acknowledge that science and art belong together, at the same time we know that they also stand far apart. We will take note of some examples of those divergences.

Questioning and cross-examining those similarities and differences will allow us to claim, with Paul Valéry, that science and art are variations upon a common theme. We will finish by trying to clarify this claim. Science and art are insurmountably distinct in the way they deal with the infinite, and they are indisputably close in the way they instantiate universality.

Walter REDMOND

*Logical Analogies/Interpretations,  
Oppositions and Probabilism*

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I present a logical analog common to several interpretations: modality (necessity and possibility), quantification, truth-functional relations, moral attitudes (deontic logic), states of knowledge (epistemic logic) and belief (doxastic logic). To display the two underlying logical templates, I call upon the originally scholastic convention, recently put to use again, of using squares, hexagons and octagons “of opposition”. A combined epistemic-deontic logic happens to be found in the traditional “probabilist” theory of the right conscience, and I shall then briefly explain how this is so.

Marcin J. SCHROEDER

## *Analogy: From Identity, Equivalence and Similarity to Cryptomorphism*

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Analogy, although understood in many different ways throughout the ages of its use in philosophy was always a tool for reducing or eliminating complexity. For instance, Aristotle writing in the *Metaphysics* (1048a25-b17) about the antithesis of potentiality and actuality avoided the difficulty of explaining the complexity of the concepts involved in it by invoking analogy “[...] we must not seek a definition of everything but be content to grasp the analogy” [1]. In this case the escape from complexity was achieved by building analogy between the relationship between opposing concepts of a very high level of abstraction (potential existence and actual existence) and the relationships between particulars coming from our everyday experience.

However, if analogy were simply replacement of that which is abstract and general by that which is particular, it would be just an illustration, possibly confusing and misleading. So what is analogy and why does it have so important role in philosophical inquiry? The etymology of its name refers to the Greek word for proportion derived from geometric analysis of figures and therefore apparently applied to quantitative, metrical analysis of the objects of human experience. But actually it belongs to fundamental concepts of the structural, i.e. qualitative methodology. Even in this original, literal meaning of the Greek word “*analogia*”, as a proportion of geometric measures, the important point is the equality of mutual relationships of the components within a whole, not their numerical values. No wonder that already in the philosophy of Greek antiquity analogy acquired the much more general meaning of the equality or similarity in structural relations typically expressed in terms of non-numerical, intuitive proportions.

This intuitive character of analogy is of special importance. The human capacity to identify structural resemblances that cannot be easily described or formalized is surprising. However, we cannot be “content to grasp analogy” as advised by Aristotle, and leave the judgment of the validity of the analogy exclusively to our intuition. Thus, we should try to identify the function of analogy in the study of structural characteristics. It is quite clear that analogy works through similarity or even equality (as in the case of proportions understood literally). However,

even if frequently, but mistakenly, analogy is reduced to a binary relation from the type of identity (in the logical sense), equivalence (a binary relation which is reflexive, symmetric and transitive) or its generalization to similarity, it actually describes a correspondence between structures. Of course, there is nothing wrong with calling the similarity relation an analogy, but the special role analogy plays in the study of structural characteristics is lost in the reduction to mathematical tolerance relations.

If we have predefined structures of particular type (e.g. algebraic structures, partially ordered sets, topological spaces, etc.), then we can consider the description of analogy in terms of functions (homomorphisms, isomorphisms, etc.) between structures that preserve structural characteristics (algebraic operations, order, topology). In this approach structures are primary concepts and analogy is introduced as a secondary concept defined by selected functions, themselves determined by the condition of these structures' preservation. However, this approach trivializes analogy. Its main role is as a tool for an inquiry into structure, or for the determination of structural characteristics. If the structure is already defined and fully characterized, there is no use for analogy. Moreover, the specific types of mathematical structures mentioned above are just examples of only apparently special importance. There are many other examples of at least equal philosophical, theoretical and practical significance. The general question: "What is a structure?" is no easier to answer than "What is an analogy?" Only when we have an answer to the former question can we try to answer the latter.

Instead of providing the ultimate answers to both, I will present an outline of the attempt to answer the first one and additional questions, which show that the reflection on the general concept of a structure is non-trivial and cannot be easily resolved by existing tools of mathematics, such as morphisms. The same structure (for instance a topological space) can be introduced in several different but equivalent ways. Topological space can be defined by the class of open subsets, closed subsets, closure operator, or a long sequence of other equivalent operators, base for open subsets, base for closed subsets, etc. We express this fact by referring to "cryptomorphic presentations of a structure". How should we describe the identity (or cryptoisomorphic class) of the structure independently from the particular choice of the defining concepts and corresponding sets of equivalent axioms? What actually is "cryptoisomorphism"? Thus far this concept is being used without any definition. We are simply "content to grasp analogy", or rather we are forced to be content with what we have.

## References:

- [1] W.D. Ross (ed.), «Aristotle: Selections» Charles Scribner Sons, New York, 1955, p.82.
- [2] M.J. Schroeder & M.H. Wright «Tolerance and weak tolerance relations» *J. Combin. Math. and Combin. Comput.* 11 (1992), 123-160.

Jonathan WESTPHAL

## A “New” Form for Analogy?

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The usual formalism given today for argument by positive analogy (it should be “from”) is like Copi’s: ‘Every analogical inference proceeds from the similarity of two or more things in one or more respects to the similarity of those things in some further respect.’ Entities  $a$ ,  $b$ , and  $c$  share properties  $F$ , and  $a$  and  $b$  also share  $G$ , the target property; therefore  $Gc$  (Copi, 426). Yet there are problems. Similarity must case be defined as the sharing of *relevant* properties. I will state and argue for a form for analogical argument which does not use the concept of similarity. The form under this view is that  $c$  as well as  $a$  and  $b$  is an instance of  $R$  (a generalized form of the given “ratio” or “proportion” in the original Greek sense of identity of proportion (ἀναλογία)). Entities  $a$ ,  $b$ , and  $c$  are instances of  $Rx$ , and  $(x)(Rx \supset Gx)$ ; therefore  $Gc$ . I will defend the analysis against the criticism that it begs a key question, and two other objections. The form given is not really new; in essence it is Aristotle’s, in the *Prior Analytics*. I will defend Aristotle’s view, discussing the problem of justification, particularly concerning the establishment of the “inductive step” to  $R$ , and also discuss three examples of analogical argument based on identity of “ratio”. I end with a few words about Leibniz’s views on induction and analogy.

Jan WOLEŃSKI

## *Logical Problems Related to Analogy*

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Analogy has many faces and uses. We have reasoning by analogy, analogical concepts in the sense of transcendental, *analogia legis*, *analogia iuris*, analogical concepts in the ordinary sense, analogical models, analogical computers, etc. Clearly, there is something common within this variety, namely the idea of being similar. Thus, if we say that  $A$  and  $B$  are analogical, we intend to indicate that they are similar to some degree. However, the idea of similarity is vague, the same concerns analogy. On the other hand, the concept of analogy is commonly subjected to logical analysis. A stable result of such attempts is that it is very difficult, or even impossible, to provide precise criteria for assertions that  $A$  and  $B$  are analogical or not, or that a particular inference by analogy is correct or not. Clearly, some cases of analogy are easy to define. For example, if we say that two ordered sets are similar (analogical), because they have the same order type, there is a precise statement. But to give a general criterion for analogy seems to open a Pandora's box.

In order to identify at least some difficulties, I assume that the scheme (\*) ( $A$  is analogical to  $B$ ) is a basic form of an analogy-statement, in which "is analogical to" is a binary predicate, but  $A$  and  $B$  are nominal expressions referring to objects, properties, relations, etc. We can call them *analogata*. In general, analogy is a binary relation.

Now, consider the sentences: (a) ' $A$  is analogical to  $B$ ,' and (b) ' $B$  is analogical to  $C$ .' Clearly these sentences do not imply (c) ' $A$  is analogical to  $C$ .' This fact prevents the introduction of an ordering into the collection of analogical objects. We cannot define the relation of equivalence between *analogata*. These considerations show that important algebraic constructions (for instance, forming equivalence classes and mathematical induction), cannot be performed on analogical items.

If we define identity as a special case of analogy, the latter relation is symmetric and reflexive. However, these attributes are too weak to generate powerful mathematical structures. This suggests that correctness of analogy-statements has to remain a conventional issue, at least to some degree. Perhaps fuzzy logic could improve the situation.



## 5. Abstracts of Special Invited Talks ---

Yuko ABE

### *The Use of Analogy in the Development of Intercultural Communication Competence*

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One of the most important goals of study abroad exchange programs for university students is to provide participants with the opportunity to develop intercultural communication competences. By definition intercultural communication competence means the ability to study, work and live in the social environment consisting of people with diverse cultural background. However, host institutions do not always provide a multicultural environment. Moreover, even highly internationalized universities with international student bodies cannot be considered fully representative for an authentic multicultural environment. For instance, universities create many mechanisms eliminating sources of intercultural conflicts; students from similar cultural backgrounds tend to form homogeneous groups shielding them from the exposure to other cultures; and students may focus on their relatively short term educational goals. To experience authentic intercultural encounters, students should be immersed in the life of non-academic communities at large, but this can give

them experience of only one culture, that of the host country. Thus, we can expect that typically study abroad programs provide students with experience of intercultural interactions within only one culture.

Since it is the actual experience of intercultural interactions that matters, the extension from one foreign culture to other cultures by theoretical generalization is entirely ineffective. Otherwise, the merit of study abroad could be questioned. The only tool in preparation for multicultural interactions is analogy – the method of transferring experience of that which is particular (individual experience derived from immersion in one particular culture) into the context of other particular, individual experiences.

My study is focused on the use analogy in the preparation of students for their future intercultural encounters. The issue is to prevent misuse of analogy as a replacement for theoretical generalization. Students have to be aware of the limited reliability of analogy in the transition from their past experience in one culture to potential interactions with other cultures. They should not attempt to transfer their former experience directly to the new cultural context, but they should ask what was surprising and unexpected in their earlier encounters and use it as a preparation for new surprises. They should learn more about themselves and their own reactions to cope with all that they cannot predict in the new cultural environment.

Marilyn REDMOND

*The Use of Analogy by Miss Marple*

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Miss Marple uses practical analogy, A is to B as C is to D, to solve murders. Even though she is always right, the police who encounter her, and often the readers as well, have trouble understanding how she can unhesitatingly point her finger at the culprit. How can an elderly lady in a peaceful little village who gardens, knits, and watches birds possibly be of any help to a highly trained detective inspector? And what do the curious behavior of Mr. Selkirk's delivery van, the absent-minded postman, the gardener who worked on Whitmonday, the gill of pickled shrimps, the matter of the changed cough drops and the butcher's wife's umbrella have to do with murder? This paper will reveal the secret.

## 6. Abstracts of Contributed Talks

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Pauline ARMARY

### *The Context of Similarity Judgement*

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The concept of similarity is fundamental in psychology and more specifically in fields dealing with categorization and analogical reasoning (Tversky, 1977, Vosniadou & Ortony, 1989, Medin, Goldstone & Gentner, 1993). Yet theoretical work on similarity had been quite scarce since the criticism of the concept by Goodman in “Seven Strictures on Similarity” (1972), in which he strongly advises against any serious attempt to use similarity in a scientific work. Some recent research (Decock and Douven, 2011) attempts to restore similarity as a useful tool in philosophy and other domains, arguing that more recent definitions (Tversky, 1977, Gardenförs, 2000) have taken care of the major criticism made by Goodman, that is the context-dependant aspect of similarity.

I would like to argue that this rehabilitation fails to make a proper account of Goodman’s strongest criticism against context-dependency, or of the effort made in psychology to deal with this problem. By reducing the context to weighting parameters in a predicate computation Tversky (1977) included the context in his definition of similarity, answering Goodman’s criticism and rejecting Carnap’s omission of context (1928); but he did not solve the major

problem of context, i.e. its infinite variability. In the seventh stricture, Goodman gives the logical argument that for any two objects in a world with  $n$  objects, those two objects have  $2^{n-2}$  common properties (if properties are constituted by a set of objects) and to determine which properties are pertinent and important in the judgement is a very difficult task. Holyoak (1989) raises another issue, stating that for any comparison with  $m$  properties and  $n$  objects, we obtain  $m!n!$  possibilities, which makes 400 million possibilities for a comparison with 10 properties and 5 objects.

I will argue that context is indeed highly relevant to understand the similarity between two objects and that a definition of similarity cannot only be some kind of computation but must take into account what the relevant and important “respects for similarity” are (Medin, Goldstone & Gentner, 1993). But against Goodman, I would like to argue that this does not spoil the definition of similarity. Several attempts have been made by psychologists (Yeh and Barsalou, 2006 ; Holyoak & Thagard, 1989 ; Vosniadou, 1989 ; Goldstone, Medin & Gentner, 1991) to answer Goodman’s problem, using the notion of “salience” of properties.

I would like to examine the notion of “salience”, its definition, and its validity as a basis for the similarity judgement and take into account the variability of the context. Is this notion a true answer to the problem (Vosniadou, 1989) or does it mask another and different cognitive process (French, Chalmers, Hofstadter, 1991)?

Juan Manuel CAMPOS BENÍTEZ

*Analogy and Visual Content:  
The “Logica memorativa” of Thomas Murner*

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Medieval logic pays close attention to language and its uses. We express our thoughts about reality through language and language is the intermediary, so to speak, among human beings. Language is composed of words and terms. Terms are classified in different ways: singular, common, indefinite and quantified terms. This classification is based on quantity. Another classification gives us univocal, equivocal, and analogical terms.

Analogy has been described as a relation involving similarity and difference between two things and also as a ratio between two pairs of things. There are two kinds of analogy: analogy of attribution and analogy of proportionality. Both have already been dealt with by Aristotle, who includes a treatment of metaphor in his *Poetics*. Metaphor and analogy are recurrent both in everyday speech and in written discourse. It is a fact that most of the time we understand metaphors, as if we had previously agreed with an “original” sense of one term and then “grasp” another sense of it to understand a metaphor where it appears. Sometimes we do not even realize that we are dealing with metaphors, as it is often the case when reading fiction.

Mediaeval logic is complex. It proceeds step by step to progressively expose its issues: their parts, their divisions, and sometimes their difficulties. Medieval logic issues were expressed in small manuals (called *parva logicalia*) and there was a thirteenth-century author, Peter of Spain, whose manuals (called *Tractatus*) constituted a point of departure for several authors until the seventeenth century. At the beginning of the sixteenth century we find something very curious: visual expression, that is, the illustration of the content of Peter’s manuals through images in the *Logica memorativa* of Thomas Murner, 1509 (there is a Mexican bilingual edition forthcoming, by Jorge Medina). In this contribution we want to show some visual images of logic emphasizing its analogical and metaphorical content.

Kim-Erik BERTS

## *Jokes and Proofs*

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There are deep and interesting similarities between jokes and mathematical proofs that shed light on our understanding of both concepts. This paper explores the perhaps unexpected analogy between jokes and proofs. In addition, the concept of rationality is illuminated, since the understanding of a joke as well as the understanding of a proof place high demands on the rational ability of the person understanding the joke or the proof.

In this paper, the concepts *joke* and *proof* are used in their everyday meaning. No attempts will be made to give an exact definition of either. However, the comparison will be limited to jokes that form a story with a punchline. Similarly, I will not say much about the definition of proof that is commonly given in relation to a formal system, but concentrate on ordinary, informal proofs.

The understanding of jokes has been compared to understanding art, but I argue that the analogy with mathematical proofs is often more illuminating. Jokes, as well as proofs, both exhibit a rigid logical order. That this is true in the case of proofs is common knowledge, but it holds for jokes too. For a proof to establish a mathematical theorem, it must be laid out in a certain order whereby the proven theorem is given conclusive support by the steps of the proof. The proof forms a valid argument. Ideally, nothing over and above what is needed to establish the theorem is stated in the proof.

Likewise, a joke must proceed in a certain order and support its punchline. The punchline must exploit the information that is given in the previous parts of the joke, otherwise it is not a punchline, however funny it may be. In this sense, the joke bears similarities to a deductive argument and to a proof. The relation between the parts of a joke and its punchline is not the same as that between the premises and the conclusion in a deduction, but it is argued that there exists a rigid logical relation between them. Finding the joke funny presupposes understanding the logical relation between its parts, and one cannot partially understand what is funny about the joke. There is a certain level of understanding involving the logic of the joke without which the joke cannot be appreciated at all.

The analogy is illuminated further by considering that for creators of jokes as well as of proofs, there is no algorithm that one can follow to find a desired

joke or proof. The finding of new jokes and new proofs involves a great amount of creativity and it involves finding new and meaningful ways of using our words and expressions, on the one hand, and symbols and mathematical concepts, on the other.



Estelle CARCIOFI

*Art and Human Being: An Analogy between  
the Conceptions of Two French Resistance Fighters*

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We propose to present two conceptions of Art and Man. These conceptions are formulated in the images of two French resistance fighters: Albert Camus and Renaud. The latter is the main fictional character of a short novel *Impotence* by Vercors. It was dedicated to the memory of Benjamin Crémieux, another French resistance fighter who died in Buchenwald.

Although the two conceptions of Art in Camus and Renaud are very similar, they surprisingly enough lead them to opposite extremes: the first one to hope and to artistic commitment, the second one to despair and rejection of Art perceived as an unbearable lie.

Analogical reasoning will allow us to show both the similarities and the distinctions between these two resistance fighters or, more precisely, between what they tell us about Art and Human Beings.

**Keywords:** art, man, Albert Camus, Vercors

Nikolaas DEKETELAERE

*Towards an Analogical Ontology?  
The Groundwork for a Kantian Phenomenology  
of the Suprasensible*

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In this essay I will set out to clarify an intriguing issue surrounding Immanuel Kant's book *Religion Within the Boundaries of Bare Reason*, namely: how is it possible that it exists? Kant is famous for claiming that no knowledge can be achieved about God, yet, if that is the case, what is contained within his volume on religion? It is apparent in many of Kant's texts that from the fact that we cannot know God, it does not follow that we cannot talk about him in a meaningful way. Moreover, questions about the unknowable God naturally pop up in human reasoning. I will therefore argue that the notion of God is not entirely beyond the correct use of reason, but rather sits at its boundary. If we are then willing to relinquish the univocal conception of truth, inextricably linked to a corresponding independent reality and favoured by metaphysics, for an ambiguous analogical one, God may not become known, but will be at least graspable. I will then argue that this analogical ontology, which allows us to make sense of things on the boundary of reason, reopens the door for meaningful theological discourse in the form of a phenomenology of the suprasensible. For since the suprasensible divine occupies the illusive boundary-area between the sensible and the purely rational, it is through analogy with the sensible that the suprasensible may be rendered graspable for us, may start to make sense to us. This dynamic is personified, says Kant, in the phenomenon of Christ as the incarnate God who personifies this boundary of reason and who can therefore only be properly understood analogically.

I will develop my argument in three steps corresponding to three major works by Kant. Perhaps controversially, I will attempt to understand Kant's religion with as little reference to his moral philosophy as possible. First, I introduce Kant's critique of metaphysics, making use of his *Critique of Pure Reason*. Subsequently, I discuss what Kant means by the bounds of reason and analogy in his *Prolegomena*. Finally, I test how well the analogical ontology provided in the *Prolegomena* can make sense of the phenomenon of Christ in Kant's religion.

Viviana Mirta MARTÍNEZ DOMÍNGUEZ

## *Analogies in Tragic Thinking*

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*Freude heisst die starke Feder  
In der ewigen Natur.  
Freude, freude treibt die Räder  
In der grossen Weltenuhr<sup>1</sup>.*

In this reflection, we intend to investigate in what sense life and tragedy have been taken to be analogous in tragic thought. Based on an analysis of the relationship that binds them (ana - logos), it is possible to infer the tragic character of existence.

This is a problem whose philosophical interest lies in the different moments of thinking, especially in those in which it aims to justify its reality beyond the experience of the world. The analogy is presented, and the possibility of taking the word to what, in the rational order, cannot be affirmed or denied theoretically and can only reach resolution in the practical world. From that perspective, the analogy of the inductive way reveals itself in the way in which human reason understands life as tragic grandeur, not only from the interpretation and evaluation of the factuality of living, but, as life lived in aware of the precariousness of existence.

Since man has consciousness of its finitude, life and tragedy can be recognized as the first and most important of the analogies in the order of intention and, in the coordinates of essence and existence, and also possibly in the order of being, but at least in the field of tragic thought. Hence the title of this work, "Analogies in Tragic Thinking", is intended to signal that, from the beginning to the end of our reflection, we pose the question what kind of analogy is to be found in the analogy between life and tragedy, as methodological necessity.

Our conclusion is intended to open new channels of investigation, since the analogy of the first order, between life and tragedy, reveals the analogy between finite and infinite.

**Keywords:** tragic thinking, life, tragedy, analogy, finite, infinite

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<sup>1</sup> *Joy is called the powerful spring of eternal nature / Joy, joy moves the wheels of the great clock of the universe.* "Ode to Joy", Friedrich Schiller.

Laurent DUBOIS

## *Self-Referential Analogies versus Heterogeneous Analogies: an Unexpected Parallel*

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We will focus on two kinds of particularly interesting and powerful analogies:

- Heterogeneous/Transdisciplinary Analogies: analogies between very distinct fields
- Self-Referential Analogies

A classic example of heterogeneous analogy is the «generic atomic planetary model of Bohr-Rutherford. Another example of heterogeneous analogy is the similar mechanism between a propositional contraposition and the change of signs in a numbers relation in the passage to the opposite:

Contraposition:  $P \rightarrow Q \quad \leftrightarrow \quad \neg P \leftarrow \neg Q$

Change of signs:  $3 < 5 \quad \leftrightarrow \quad -3 > -5$

The analogy preserves the necessary combination of the change of the signs and the reversal of the orientation of the symbol at the right side of both equivalences. The other kind of analogy that will be considered is the self-referential analogy. Here is an original example of a self-referential analogy :

**Whole : Whole : ... :: Hole :: Hole : ?**

Answer :

**Whole : Whole : ... :: Hole :: Hole :**

Explanation: A blank (target) is to “Hole” (source) as the whole analogy (target) is to “Whole” (source).

This kind of self-referential analogy allowed us in the First Congress on Analogy to highlight the distinction between simple or static self-reference (the answer) and dynamical self-reference (the first part of the analogy).

While heterogeneous analogies allow us to compare very distinct fields thanks to simple mechanisms, self-referential analogies can lead to very complex mechanisms like fractals and “mise en abyme”.

In our talk, we will try to answer the following questions: 1) Is it the case that the more distinct the fields compared, the more powerful the analogy and the more simple the mechanism of the analogy ?

2) How could we combine self-referential and heterogeneous analogies?

Ricardo Arturo NICOLÁS FRANCISCO

## *How to Construct Trees for $C_1$ and $C_2$ Calculi using Quasi-matrices*

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The aim of this paper is to reject a kind of analogy between classic semantics and quasi-matrices and to develop a tableaux according to the parameters of classical logic. It departs from the assumption that classic semantics can develop a tree (tableaux) using only the values of its proper subformulae. It is worth noting that while this works for classical logic, in the calculus  $C_1$  and  $C_2$  we have to modify the rules to develop an appropriate calculus.

The conjunction of a formula, with one negated proposition in  $C_2$  – but only one (or none) – can give rise to a tableaux with four bifurcations, otherwise three. On the other hand, the disjunction of a formula, having one disjunction negated – but only one – is able to assume the development of a tree with only three branches, otherwise four. A branch is always accompanied with the representation of a formula bifurcated in the respective quasi-matrix by “\*”. According to the ideal of the paraconsistent logician, the important branch is the one which need not to be closed by a negation of the corresponding formula, so the branches with formulae  $a^*$  are the most relevant for the construction of trees. Having formulae only of the form  $a^*$ , we are able to conclude our proof.

The idea of constructing trees through classical semantics and transporting the analogue to quasi-matrices can be seen as a type of analogy between logics. Despite the fact that the analogy presented here is for criticism, it helps to understand the limits (and the scope) of the analogy at the level of formalism and to evade them if they are not necessary.

### **References:**

da Costa, N.C.A. and Alves, E.H. (1977), “A semantic Analysis of the Calculi  $C_n$ ”, in *Notre Dame Journal of Formal Logic*, 16: 621-630.

Manzano, M. Huertas A., (2004) *Lógica para principiantes*, España: Alianza Editorial.

Priest, Graham (2008). *An Introduction to Non-Classical Logic: From If to Is*. Cambridge University Press.

Katarzyna GAN-KRZYWOSZYŃSKA

## *Analogy, Dialogue and Revolution*

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The aim of this talk is to present analogy as a platform for any dialogue, and to display its revolutionary character. Within standard approaches to dialogue (especially in the Polish tradition) the concept of difference is generally presented as a positive phenomenon that makes life richer and more beautiful.

However, in contemporary Latin-American thought it is widely accepted that dialogue is impossible without the concept of analogy. The basic problem of univocal narrations is this tragic dichotomy between identity and difference, which is usually translated into a violent conflict.

Paulo Freire has put at the center of his analysis this tragic conception. It is tragic because of the pervasiveness of the dichotomy *oppressors/oppressed*, which results in two very wrong, dehumanized, visions of the human being. The authentic revolution must be creative (in the sense of the Stéphane Hessel's dictum: *Résister c'est créer*). Such a revolution overcomes the univocal narration without ending in equivocity and creates real new perspectives. In the words of Grace Jones: *It's time to something else to happen*.

In this talk I will present some conditions of genuine dialogue that must be based on analogy, as well as describing a few almost forgotten traditions that have always treasured this thought. On the other hand, I will also briefly analyze the foundations of oppressive systems that block analogical thinking because of its revolutionary nature.

José David GARCÍA-CRUZ

## *Analogy in Logical Connectives*

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The aim of this talk is to apply the notion of analogy to the study of the logical connectives. The work of Henri Prade and Gilles Richard is relevant, because this is a very specific and restricted study of the notion of analogy in a Boolean context. For example in works like [1], [2], y [3]. Although there are clear relations between analogy and the connectives (as we can see in the cited works), our approach moves away from this conception of analogy. Our approach is presented in two stages.

In the first place we offer an abstract account of the notion of analogy as a second-order operation. The novelty of this viewpoint lies in the fact that in an intuitive way an analogy is a kind of quaternary relation (i.e.  $a$  is to  $b$  as  $c$  is to  $d$ ). We think that it is rather a binary relation, due to the fact that an analogy between four objects is a kind of identification between some relations that the objects hold. In this sense analogy is applied to relations rather objects. This is the reason on the basis of which we understand analogy as a second-order relation.

The second step consist in apply this notion of analogy to the logical connectives. We take the 16 connectives and we show how we can state analogies between them. We take as a reference the strings of bits involved on the definition of the logical connectives in a semantical sense. Starting from this strings of bits we present a specific definition of analogy for the logical connectives. Finally, this approach has two main consequences. First, the fact that we offer an operation different from logical consequence by which we may compute some interactions between formulas in a logical language. This is important because validity has been the main notion in classical logic for many centuries, and we think that our approach does more justice to the despised notion of analogy. The other consequence is related to the notion of “logical sensibility”. Our approach is generated in a classical context, and because of that some presuppositions have been stated with respect to the relations between connectives. An interesting question is what happens with the notion of analogy (our notion of analogy) in a many-valued or paraconsistent (or any imaginable logical) context? We hope that our approach will serve as a basis for answering this question.



## References:

[1] Prade H. and Richard G. (2009), “Analogy, Paralogy and Reverse Analogy: Postulates and Inferences” [in:] KI 2009, LNAI 5803, ed. B. Mertsching, M. Hund, and Z. Aziz (Eds.), pp. 306-314, 2009. Springer-Verlag Berlin Heidelberg.

[2] Prade H. and Richard G. (2013). “From Analogical Proportion to Logical Proportions”. *Logica Universalis* 7, pp. 441-505.

[3] Prade H. and Richard G. (2014). “From Analogical Proportion to Logical Proportions: A Survey”. [in:] *Computational Approaches to Analogical Reasoning: Current Trends, Studies in Computational Intelligence* 548, ed. H. Prade and G. Richard (eds.), Springer-Verlag Berlin Heidelberg.

Chris GENOVESI

## *An Eye for Familiarity: The Effects of Familiarity on Metaphor Comprehension*

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An outstanding question in metaphor research has focused on the preference of a processing strategy employed to yield a metaphorical interpretation. The *career of metaphor hypothesis* (Bowdle & Gentner, 2005) suggests that processing preference is a result of *conventionality* whereby conventional metaphors are processed through categorization, and novel ones processed through comparison (i.e., analogy). Alternatively, the categorization model (Glucksberg & Keysar, 1990; Glucksberg & Haught, 2006; Shen, 1989) predicts that apt metaphors are processed as categorizations regardless of whether they are conventional. However, research has largely ignored another factor known to influence metaphor processing, namely *familiarity*. Following the logic of each model, it is possible to postulate a role for familiarity: On the one hand, the categorization model predicts that familiarity plays no role in deciding on processing strategy. On the other hand, the *career of metaphor hypothesis* predicts that familiarity plays a facilitating role in metaphor comprehension. In terms of eye-tracking, it is plausible to assume comparison-based processing strategies to be reflected in additional cognitive costs associated with gaze-fixation and duration between topic and vehicle terms. In this experiment, we used the eye-tracking paradigm and controlled for aptness and conventionality, and manipulated *familiarity* to test whether familiarity has a role in processing. Contrary to the categorization view, our initial results support the *career of metaphor hypothesis* by showing that familiarity has a facilitating effect on metaphor processing. We discuss the implications these results have on the psycholinguistic models and speculate on their philosophical consequences.

Dariusz GŁOWACKI

*Art and Philosophy, Philosophy  
and Art. Borrowing, Lending, Exchanging.*

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For Plato the visual artists were not supposed to stay in the ideal state. An artist as a copyist of shadows did not deserve a residence in the *Republic*.

In 1981 Arthur Coleman Danto, the art critic and philosopher, announced “the End of Art” and its revival as philosophy. He believed that art could return to its alleged source and probe the reality as philosophers do. But almost twenty years earlier Joseph Kosuth, the famous conceptual artist, announced that philosophy had died, and Art After Philosophy was born.

Entering an art gallery is often a confusing and embarrassing experience. For the audience visiting contemporary art museums and galleries it is often an uncomfortable ordeal to see the art displayed there. Should we only trust our senses or rely on intellectual abilities? From time to time we are in the situation where we are not able to define whether something is an art object or just an ordinary thing. Does it mean we are ignoramuses who are not intelligent and sensitive enough to face art?

Their relation seems to be sometimes complicated and strange, but it is worth asking and showing the mutual influences and similarities between art and philosophy. Without them modern art would be probably different. However there are also reasons to say that philosophy without art would be different as well.

**References:**

Carnap, R., *Philosophy and Logical Syntax*, <https://pl.scribd.com/document/150553485/carnap-logical-syntax-of-language-pdf>

Danto, A. C., *Encounters & reflections: art in the historical present*, Berkley: University of California Press, 1997

Hume, D., *An Enquiry Concerning Human Understanding*, <http://www.earlymoderntexts.com/assets/pdfs/hume1748.pdf>

Husserl, E., *Collected Works*, <https://ia800303.us.archive.org/10/items/IdeasPartI/Husserl-IdeasI.pdf>

Kuhn, T., *The Structure of Scientific Revolutions*, [http://sciencepolicy.colorado.edu/students/envs\\_5110/structure\\_of\\_scientific\\_revolutions.pdf](http://sciencepolicy.colorado.edu/students/envs_5110/structure_of_scientific_revolutions.pdf)

Plato, *Meno*, <http://classics.mit.edu/Plato/meno.html>  
Plato, *Phaedrus*, <http://www.gutenberg.org/files/1636/1636-h/1636-h.htm>  
Plato, *Republic*, At MIT.edu: Plato's Republic: Translated by Benjamin Jowett. <http://classics.mit.edu/Plato/republic.mb.txt>  
Plato, *Seventh Letter*, [http://classics.mit.edu/Plato/seventh\\_letter.html](http://classics.mit.edu/Plato/seventh_letter.html)  
Plato, *Timaeus*, [http://www.math.upatras.gr/~streklas/public\\_html/timaeusofplatoooplatiala.pdf](http://www.math.upatras.gr/~streklas/public_html/timaeusofplatoooplatiala.pdf)  
Wittgenstein, L., *Tractatus Logico-Philosophicus*, <https://www.gutenberg.org/files/5740/5740-pdf.pdf>

### **Illustrations:**

Arcimboldo, G., *Four seasons*, 1573, Louvre Museum Paris  
Arcimboldo, G., *The Cook*, 1570, Private Collection  
Arcimboldo, G., *Fruit Basket*, 1590, French & Company, New York  
Dali, S., *The Persistence of Memory*, 1931, Museum of Modern Art, New York City  
Duchamp, M., *Bottle Dryer*, 1914, Philadelphia Museum of Art, the Norton Simon Museum, and the Moderna Museet  
Duchamp, M., *Fountain*, 1917, (replicas), Scottish National Gallery of Modern Art, Edinburgh, Tate Modern London  
Koons, J., *Three Ball Total Equilibrium Tank (Two Dr J Silver Series, Spalding NBA Tip-Off)*, Tate Modern London  
Kosuth, J., *One and Three Chairs*, 1965, Museum of Modern Art, New York City

Özgüç GÜVEN

## *Analogy vs. Systematized Logic*

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In this talk I will argue that analogical reasoning is part of ‘intrinsic logic’ which is different from ‘systematized logic’. By ‘intrinsic logic’ I understand an ability to make inferences without appealing to any systemized formal rules. Analogical thinking is a kind of reasoning without rules.

It seems that analogical reasoning is essential to human thought, and for other species with high cognitive skills. Analogy is used to explain something unfamiliar by comparing it with something else. Analogical reasoning is a spontaneous process. Without specific training in reasoning one can make analogies. That is why many everyday inferences, or many inferences in everyday life, depend on analogies. The human fight for survival is effective thanks to this intrinsic reasoning. Therefore it seems likely that there are psychophysical basics for analogy in human mind.

An analogy is free play of imagination. The similarity between two entities is obtained from several aspects. For example, suppose the numeral-string 123 were changed to 124, and we are invited to change the numeral-string 435 with the same analogical thinking. Several answers could be given, such as 434 in which the last numeral is fixed to 4 or 439 in which the last numeral is the square of second numeral, etc. etc.

Analogical thinking is based on contingent relations. In contrast to ‘systematized logic’, analogical thinking depends on the particular instance that is being considered.

Vedat KAMER

## *Rethinking Analogy Within the Framework of Space Conception of Solipsist Ontology*

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The famous argument of Gorgias is perhaps one of the best formulations of the solipsistic standpoint: “Nothing exists; even if something exists, nothing can be known about it; and even if something can be known about it, knowledge about it can not be communicated to others.” However, if it is assumed that analogy is a type of reasoning which transfers an argument for one particular to another particular, based on the similarity between them, then for analogical reasoning, it is necessary that we acknowledge the existence of two things, that we have enough knowledge to be able to determine the similarity between these two beings, and that we are able to articulate their similarities.

If we take Gorgias’ argument as a basis, can we make an analogy? Perhaps if we go even further, can we talk about identity? Do we need the three laws of logic, identity, non-contradiction, and excluded middle, in order to make an analogy?

Şafak Ural’s solipsist ontology allows us to understand the way our consciousness and language work, as well as their relations with physical things. One of the main points in this redefinition is the “space conception”. Space conceptions make it possible to define physical things by my consciousness.

Şafak Ural argues that we perceive singular physical objects through our personal perception spaces. However, singular objects use a common general space conception with other similar objects. The observational features that distinguish similar particular things are the personal spaces of each particular object itself, which are formed by means of the self-reality of each particular object. Different space conceptions, in other words, attribute different existential features to a singular thing. Establishing communication by means of changing the features of identity is possible by means of a referential space. We attribute different identity features to singular things by changing space conceptions and changing the relations among these conceptions.

In this talk, within the framework of Şafak Ural’s solipsist ontology, we will argue that analogical reasoning can be redefined as determining the common referential spaces between singular things.

Alexander KREMLING

*An Argument Structure for Causal Explanations  
by Analogy. The Case of Galileo's Explanation  
of the Tides*

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The aim of the talk is to present an argument scheme for causal explanations by a special analogy, exemplified by Galileo's (false) explanation of the tides.

In his *Dialogo...* Galileo presents a central piece of his argument against the Ptolemaic system: the rotating movement of the earth are the main cause of the tides. He does so by an analogy to the movement of water shipped to Venice to provide the city with fresh water.

Theories developing a formal structure of analogies can be used to reconstruct Galileo's analogy as an argument with a premise-and-conclusion structure. Their respective problems can be assessed this way, and though Galileo's explanation today is considered false it can be used as a test case for the efficacy of the theories of analogy in helping to find critical weaknesses in argumentative reasoning.

I will reconstruct Galileo's argument guided by an account of analogical reasoning centering around the structural isomorphism of two parts of reality that allows the inference to the conclusion about the second part of reality.

After demonstrating advantages and disadvantages of this style of argument in the case of Galileo, and in general, I will proceed by laying out a reconstruction that sticks closely to the text. Galileo uses a technical analogy for explaining the tides. The way an instrument can be manipulated to produce certain effects is used to infer a cause of an event that is outside technical control. His strategies to avoid counterarguments against his theory of the tides show the hidden premises he assumes to be necessary for drawing the conclusion.

I will present this interventionist argument by analogy and discuss its relation to the classical theory of analogy introduced earlier.

**Key words:** analogy, argumentation theory, explanation of the tides, causal explanation, interventionism

Przemysław KRZYWOSZYŃSKI

## *Towards an Analogical Concept of Referendum*

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The conception of the referendum proposed in this talk is based on the so-called analogical paradigm. It can contribute to preventing the risk of the occurrence of univocal systems of domination as well as to encouraging the development of diverse forms of dialogue between citizens and their representatives. This conception allows us to formulate the following characteristics of the referendum according to the analogical approach. (1) The referendum questions should have the form of a complex conditional question  $\{A, \neg A \wedge B, \neg A \wedge \neg B\}$ , which falls under the general scheme  $\{A_1, \dots, A_n\}$  and takes into consideration the analogical character of the negative response in order to prevent dichotomous divisions within the given community. (2) The return to the optimal system of direct democracy, in other words, to the full realization of people's rule, is possible only through a citizen-initiative obligatory referendum. The referendum initiative should belong to the people as sovereign, both in the subject of the referendum, the formulation of referendum question(s), and the precise definition of the procedures and methods for introducing legally binding effects. (3) There should be a protected system of representation control, for example, by an appropriate form for referendums, namely the veto-referendum. (4) In addition, especially in a crisis situation, the procedures should also take into consideration potential objections and voices of disapproval expressed in the form of the NOTA or through abstention from participation in the referendum. (5) Of course, the referendum, according to the analogical paradigm, should be non-trivial, and the referendum question has to be a possible and a "risky" one.



João MARCOS

*Similarity and the Duality Principle  
within and among Inferential Mechanisms*

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There is more than one significant way in which two subjects may be said to closely resemble each other, when connected through an analogical process. In the present contribution I will argue for and illustrate the latter claim in the case of well-known yet insufficiently studied inferential mechanisms codified in the field of Logic.

While a structural similarity in the characterization of certain pairs of logical constants associated by way of an appropriate duality principle may be used to explore analogies within a given logic, a cognitive approach to formal semantics may be used, or so I propose, to investigate a many-dimensional notion of consequence that decouples truth from information in a natural way and, as a byproduct, allows one to consider dualities among different logics. If time permits, I will also discuss in my talk two different ways in which the above mentioned duality principle may be seen to fall under the scope of a generic study of the notion of Opposition.

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Pablo MARTÍN MEIER

## *Analogies in the Concept of Time in Kant and Borges*

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In the present work, we propose to investigate the conception of the time of Kant in the *Critique of Judgment* and to establish the pertinent analogies with the conception of time that approaches Borges in the following stories: “Tlön, Uqbar, Orbis Tertius”; “The Zahir”, “The Writing of God” and “The Aleph”. The methodology that we will apply to this study in order to find the common points that appear in the conception of time of both authors will be philosophical hermeneutics.

Jorge Luis Borges, through the analogies in his stories, comes to represent the absolute through the present moment; Kant, in the *Critique of Judgment*, in the section on the analytic of the sublime, conceives in the instant the suspension of time. It is then possible to approach the texts of the two authors in order to achieve the purpose of this research: to discover the analogies of time in Königsberg’s author and in the Argentine writer.

**Keywords:** instant, absolute, time, analogy

Stefano PAPA

## *Killing Metaphors and the Spell of Names*

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In Segerberg (2011), a model for metaphoric expressions is constructed, using dynamic doxastic logic as a tool. Metaphors, the author says, are “linguistic means of meaning transmission from one conceptual space to another”. While the latter considers metaphors from the specific standpoint of conceptual metaphors; the model fails, so it is claimed in this contribution, to give an account of tropes, specifically of figures of speech which rely on analogical reasoning.

Consider, for instance, the case of Hypocatastasis or Implication:

a. *You are behaving like a beast!* (Simile; here, the *dynamic operator*, as defined by Segerberg (2011) as well as Lindström & Segerberg (2007), performs well by modeling the belief revision of an agent, coping with processing *a*, while accepting the implications of the suggested similarity constraint.)

b. *You are a beast!* (Metaphor; Segerberg (2011) seems to imply that understanding figurative speech, like in b., is not of a higher complexity than understanding literal phrases: “The idea is that interpreting a proposition  $\Phi$  under a metaphor  $M$  amounts to treating the information contained in the single expression  $(M/\Phi)$  as logically equivalent to the information conveyed by the entire set  $\nabla(M, \Phi)$ .[...] This set we call “the halo of  $\Phi$  under  $M$ ”. The equivalence of the set of literal meanings and its halo, is in accordance with the empirical results of cognitive psychology. On the other hand, the latent cognitive “model” of Segerberg (2011) suggests that the metaphorical meaning is triggered by a failure of coming to grasp with literal meaning. Such a sequential modeling of figurative speech understanding (figuring out) is not backed by the empirical results. It is claimed in this contribution, that the alleged weakness of Segerberg (2011) stems from conceiving of the analogical reasoning underlying figurative language understanding as fundamentally knowledge-based.

One peculiar shortcoming of a modal logic of metaphor surfaces, it seems, when considering the following:

c. *Beast!* (Hypocatastasis, implication or name-calling. Here, a model-theoretic account (halo) of the figure at work seems not to be in the conceptual horizon of Segerberg (2011). There are two reasons.

1. the relational competence to be accounted for, in this case, does not resort to an item familiarity, as psychologists and cognitive scientists put it; rather it's a content effect that specifically triggers the relational processing, which is virulent in c. How are such content effects to be build into a model theoretic account?

2. Secondly, the “pragmatic” intuitive dictum “success breeds success”, which is stated at the end of Segerberg (2011), supposedly describing the process of “extending natural language”, does not account for pragmatic phenomena such as using figurative speech for the purpose of stigmatizing others. In such cases, the analogical processing underlying the lexical expansion is at the same time marked with a refrain-operator. It seems a rewarding undertaking to try and build a model of this operator (“one ought not to call others a beast”). Whether this can be done by using the framework of doxastic commitment is an open question at this moment.

**Keywords:** logic of metaphor, belief change, modal logic, analogy

Vasil PENCHEV

*Analogia Entis: Analogy Universalized  
and Formalized Rigorously and Mathematically  
in Quantum Mechanics as the Shared Base  
of Nature and Knowledge*

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Analogy is often criticized for being unable to distinguish true from false statements for both admit (and are admitted by) analogy. This implies at least two directions for the perfection of analogy. The first one consists in the formally and disjunctively separation of “good analogy”, generating only true statements from “bad analogy”, allowing of false propositions. The second one suggests for analogy to be formalized as a way of modal, possible, and probable reasoning.

Furthermore, one can add to the latter direction the ancient and medieval, rather theological idea about the universality of analogy as to the world of both things and statements as *analogia entis* rather than only a way of cognition or representing knowledge. This implies the intention for the probable reasoning in analogy to be unified with the existence of the things in reality as in *analogia entis*.

That fundamental problem was resolved in fact by quantum mechanics, though its immediate and particular task was how to describe formally and mathematically the unification of continuous (smooth) motion in classical physics with the discrete motion forced for the fundamental Planck constant.

*Thesis:* The wave function of any quantum system can be interpreted as its quantitative degree of analogy to any other quantum system. It therefore realizes *analogia entis* in a rigorous, formal and mathematical way in a scientific discipline such as quantum mechanics. Furthermore, vice versa: a certain wave function can be ascribed to any analogy, thus allowing of its interpretation as that of some possible or existing quantum system. The latter completes *analogia entis* formally and mathematically for identifying any state “by itself” with some statement in analogy, i.e. with a proposition in our cognition.

*Two main arguments for the thesis:*

1. Any wave function can be interpreted as a series of qubits (a qubit is defined as usual as the normed superposition of two orthogonal subspaces of

the separable complex Hilbert space). Then, each of those two orthogonal spaces can be in turn interpreted as the quality of the same name in two independent (quantum) systems, and the value of the qubit as the quantitative value of similarity (analogy) between the two systems as to the quality at issue.

2. Given any analogy decomposed as a “sum” of analogies of the union of all qualities possessed by both systems, then a value of the qubit may be assigned to any particular sub-analogy referring to a single quality

*A short comment of the thesis and the arguments in its favor.* The thesis and arguments refer only to the interpretation of wave function extending its meaning from the description of any quantum (and thus physical) system to the knowledge of the system by analogy. Thus the knowledge and reality of any system can be identified right in the tradition of *analogia entis*.

Furthermore, any item is also described as a state of the whole or as the description of its analogy with all other items in the universe. Anyway, *analogia entis* seems to be a particular case of coincidence, which can be complemented by any nonzero difference of a state of the whole and a part of the same whole.

*Conclusion:* The world can be represented exhaustively and quantitatively only by means of analogy and by the difference between a part and a state of the whole. However, that difference can be represented in turn as an analogy, which implies the absolute universality of analogy.

Friedrich VON PETERSDORFF

## *The Significance of Analogy when Re-Presenting the Past*

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Researching history, coming to conclusions and outlining the results in a narrative is not a matter of straightforwardly collecting facts, then arranging these in some order, and thereby possibly achieving a representation of the past. Historians, rather, should carefully observe their specific methodological requirements and consider the various theoretical and epistemological problems involved. Among the epistemological problems thereby arising is the question how a true account of the past can be achieved. Paul Ricœur, in his analysis of these theoretical problems, proceeded by distinguishing and discussing three distinct paths which historians should follow when approaching the past, for it was his intention to find out what we are “saying when we say that something ‘really’ happened”. Ricœur suggested that we should analyse in detail the epistemological concepts regarding historical research under “the ideas of the Same, the Other, and the Analogous”. For he maintained that “we can say something meaningful about the past in thinking about it successively” in these three terms, i.e. by distinguishing three different approaches and categories of historiography: 1) the re-enactment of the past in the present, under the sign of *the same*, 2) a negative ontology of the past, under the sign of *the other*, and 3) a tropological approach, under the sign of *the analogous*. Accordingly, Ricœur came to the conclusion that “between a narrative and a course of events, there is not a relation of reproduction, reduplication, or equivalence but a metaphorical relation”. He emphasized that these three signs were to be viewed in their interwovenness, in order to enable and establish a reflective encounter with the past. It is, furthermore, according to Ricœur, necessary “to reattach the analogous to the complex interplay of the Same and the Other [...]”. Ricœur further argues: “In the hunt for what has been, analogy does not operate alone but in connection with identity and otherness. The past is indeed what, in the first place, has to be re-enacted in the mode of identity, but it is no less true, for all that, that it is also what is absent from all our constructions. The Analogous, precisely, is what retains in itself the force of re-enactment and of taking a distance, to the extent that being-as is both to be and not to be.” In order to gain a detailed understanding of the significance of the analogous within this context of assessing the past in a truthful manner, I intend to analyse the specific contribution of these three concepts with regard to their interwovenness. I shall,

therefore, analyse the structure of their “complex interplay” (as these do not operate on their own), as well as the significance of the requirement that we should think about the past in successive steps, i.e. under the signs of *the same*, *the other* and *the analogous*, in order to depict and understand the significance of analogy when re-representing the past.



Patryk PIŁASIEWICZ, Andrzej KONIECZNY

(GRIT)

## *Enigma: Will the World Last More Three Quarters?*

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We would like to present our new interdisciplinary project, inspired by the phenomenon of the German cipher machine, Enigma. This unique, legendary object became one of the strongest and most secret Nazi weapons, used continuously in all Hitler's campaigns during the Second World War.

Algorithms of Enigma were broken for the first time in 1932, by the Polish mathematicians and cryptologists Marian Rejewski, Jerzy Różycki and Henryk Zygalski. Their methods of decrypting (Rejewski's *Bombs*, Zygalski's *sheets* and Różycki's *clock*) became strong and effective tools of decrypting near 75% German messages between 1932 and 1937. On 26 and 27 July 1939 the Polish Cipher Bureau shared all the knowledge of Enigma with cryptologists from Bletchley Park (GC&CS) and gave them all the documents and copies of machines. It was a big surprise and a milestone in the history of intelligence. British cryptologists from Bletchley Park and their American colleagues developed the Polish successes from 1932, and broke the codes of all Enigmas' upgraded versions. In many historians' opinion, breaking the Enigma codes was a key success that shortened the war by about 2 to 3 years.

Our project – "*Enigma. Will the world last three quarters more?*" is primarily based on musical language. It has form of 45' *live – act* and contains sound structures, organized in form of layers. They are created from the following different source materials:

1. Samples of *found sounds*, fields recorded in places connected with history of Enigma and II World War (for example: interiors in Poznań Castle, headquarters of Poznań University and one of Hitler's favourite strongholds);
2. Visual objects encoded (transcribed) to sound language (noise) with available software (archive photographs and original documents of Enigma, gathered during 3-years research period from mathematician's families and private collections);

3. Various texts, recorded in Morse code (letters, family documents and fragments of German poetry, used by Enigma operators as training messages);
4. Musical quotations (*Preludes* of J. S. Bach and *Nocturnes* of F. Chopin).

All sound layers are looped and played along with live improvisation. This non-linear, “one-time” musical structure has to be deciphered by the listener. The visual counterpoint of the music presentation has a form of video projection, strictly connected with all the musical layers. Unique pictures from Zygalski’s family album as well as technical sketches of the Enigma machine are being deconstructed in a slow process of collapse and transformation.

This project invites the listener to take a journey to one of the most dramatic episodes in history. Our map of these regions is partly encrypted in musical or visual transformations. The listener has the role of the perceptive observer, explorer, investigator, or even cryptologist, who follows the signs and hidden meanings, looking for the answer. The story of Enigma crosses over into the intimate story of Zygalski’s life. His vanishing memories are very natural and truthful, more human than strong historical facts.

Idea of project – Patryk Piłasiewicz  
Scenario – Patryk Piłasiewicz, Andrzej Konieczny (GRIT)  
Compositions, sound design – Andrzej Konieczny  
Performed by – Patryk Piłasiewicz, Andrzej Konieczny (GRIT)  
Visual design – Patryk Piłasiewicz, Andrzej Konieczny (GRIT)

Albinas PLĖŠNYS

## *A Change in the Concept of Analogy*

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Analogy is commonly held to be a type of reasoning where the resemblance between any two objects based on one or more attributes is taken to imply that these objects are also similar in some other attributes. Analogy understood in this way is generally seen as a type of inductive reasoning. This view of analogy as a method of acquiring knowledge was popularized by John Stuart Mill. According to him, the word “analogy” as the name of a mode of reasoning is generally taken as some kind of argument supposed to be of an inductive nature but not amounting to a complete induction.

From Wittgenstein’s viewpoint, the problem of discovering knowledge is a problem of psychology rather than that of philosophy. He thinks that the process of induction is the process of assuming that the simplest law can be made to harmonize with our experience. This process has no logical foundation but only a psychological one. Carnap takes the same approach and thinks that a philosopher must investigate only the problem of the verification of knowledge rather than the psychological problem of discovery. According to Carnap, the problem of the verification or confirmation of knowledge should be regarded as a real problem of inductive logic. Carnap holds that analogy does not play any role in philosophical investigations.

In the opinion of Aristotle, in order to solve separate problems of thinking, the most important thing is to know how words function, in other words, to understand the logic of our language. The theory of analogy comes in handy here. Aristotle presents it in Book Four of the *Metaphysics*, explaining diversities and identities of the meanings of being, as well as explaining mathematical proportions, i.e., the similarity between two or more relations. Thomas Aquinas changed the Aristotelian notion of analogy from *proportion* to *relation*, and explained it as the connection between the terms based on the relation, which enables us to understand the use of these terms in theoretical contexts and to create new terms.

According to Thomas Aquinas, that is said to be predicated analogically which is predicated of many whose natures are diverse but which are attributed to one same thing, as health is said of the animal body, of urine and of food, but it does not signify entirely the same thing in all three; it is said of urine as a sign

of health, of body as of a subject and of food as of a cause. But all these natures are attributed to one end, namely to health.

Sometimes those things which agree as to analogy, i.e., in proportion, comparison or agreement, are attributed to one end, as in the example of "health". Sometimes they are attributed to one agent, as "medical" is said of one who acts with art, of one who acts without art, as a midwife, and even of instruments; but it is said of all by attribution to one agent, which is medicine. Sometimes it is said by attribution to one subject, as "being" is said of substance, quantity, quality and other predicaments because it is not entirely for the same reason that substance is being, and quantity and the others are as well. Rather, they all are called being in so far as they are attributed to a substance, which is the subject of the others.

So we have three possible interpretations of analogy: (a) analogy is to be related to the problem of acquiring new knowledge, which belongs to the sphere of cognitive psychology. This is the interpretation that prevails today and which is interested mainly in the possibilities of formalising analogy as a way of reasoning; (b) it is related to the problem of confirmation, which belongs to the sphere of logical analysis; and finally (c) analogy is to be related to the problem of understanding, which belongs to the philosophy of language. Within a context, analogy (a) can be interpreted as a way of reasoning close to induction (the interpretation of analogy presented by Mill); within a context, analogy (b) is meaningless and is not to be used (Carnap's interpretation); within a context, analogy (c) is an important way of studying the functioning of words in a language substantiating and justifying the use of concepts (including metaphysical ones) that go beyond the bounds of experience.

Thomas Aquinas was mainly concerned with the scientific language of metaphysics. Mathematics and the natural sciences interested him to a lesser degree. However, as Klubertanz notes, an area of special concern in Thomistic analogy is the problem of our knowledge of God. The question whether the existence of God can even be known devolves onto a relatively small number of questions. Is it possible for man to come to know anything beyond the range of his sense experience?

Explaining the use of words and their functioning is one of the themes of the philosophy of language. In the Middle Ages this theme was developed by Thomas Aquinas and his followers, first and foremost by Cajetan, on the basis of the investigation of analogy enabling the peculiarities of the polysemantic use of words to be understood. Thanks to Mill and his followers, however, analogy was reinterpreted into the method of acquiring new knowledge. Assuming that the contexts of the functioning and understanding the terms in a language are of no less importance than the contexts of acquiring or validating knowledge, we wish to suggest that the analysis of analogy as it was understood in the Middle Ages is of significance to the present-day philosophy of language.

Ondřej POMAHAČ

## *More's Utopia and the Magic of Analogy*

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*Utopia* is well known, maybe too much known to be still read. But I would like to present the *Utopia* (1516) written by Thomas More from the entirely new point of view. Emphasis is usually put on its “utopiqlness”, its special and distinctive Utopian character, in various senses, or some other abstract classifying construct. Inspired by Douglas Hofstadter I find the most interesting story about Utopia in its source analogies of its construction. So I do not understand the Utopia as an archetype of some genre, but as a specific and unique intellectual approach of solving some actual problem and as a mental experiment that has been constantly misinterpreted and abused through the history.

First, a brief introduction to thinking about analogies and analogical nature of thinking itself will be necessary to our purpose. I consider to Douglas Hofstadter and Emmanuel Sander, especially their last monograph *Surfaces and Essences*. My second inspirational source is Henri Poincaré's essay *Mathematical Intuition*, which enables me to point out a particular dichotomy in the text of *Utopia*, a distinction between the succession of descriptions, or proof, and the simultaneity of pictures, or intuition.

This type of observation about the text of *Utopia* can open up new perspectives of understanding why More used the dramatic forms and arguments that he did. I intend to reveal the logic of the process of work's construction, which usually remains hidden from view. I will also try to answer what the difference between More's usage of certain concepts and our usage of the same concepts today is based on. What marks the limits of More's effort to construct and describe the best state are these concepts. Here is the main point of my paper, with agreement with Hofstadter's view that analogies enable us on one hand to see and to think about things in new way, but on the other hand that they shape our options to create fluid but more or less determinate concepts. It means that what enable us to see something simultaneously makes us blind to something other. Creativity and conceptualization are in this sense two sides of the same coin.

And I focus straight on these issues in More's *Utopia*. Briefly, More's description of Utopia is based on two or three analogies which underlying all the proceses and structures that More describes, all the social-economic arrangements he chooses and finally the hypotheses about human nature that More provides.

All More's endeavors result in the paradox of Utopia as a state with parasitic relations to its neighborhood states. An illustrative example of this analogical structuring of More's Utopia is the geography of the island where the state of Utopia is placed. Every new protective layer is analogical to the previous one and also to the next one. The geography of the island fluidly expresses foreign politics, though still with the same simple analogical engine behind the scene. For example, one of the leading principles can be termed "oversaturation", something which tends to solve all public health, social, security and other problems in a struggle against shortages, which is analogical to hunger or the state of illness in More's hypothesis concerning human nature.

This investigation into the fundamental analogies and touchstones of More's *Utopia* can also be taken as a blueprint for a new approach to literary studies and also for the broader realm of the humanistic writing as whole.

Adrianna SMURZYŃSKA

## *The Role of Analogical Inference in the Process of Understanding Other Minds*

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The classical other minds problem is focused on the question: how can we know that there are other minds apart from our own? One of the solutions of that problem is that the knowledge ability is provided by the analogical inference (Hyslop, 2016). On this view,

I know myself, because I have direct access toward my mind.

I know that when I have thought A and feeling B, I behave according to the pattern C.

I see that a person P behaves according to the pattern C.

I infer that the person P has thought A and feeling B, and that therefore the person P has a mind just as I do.

Nowadays, philosophers less often ask: ‘How can we know if others have minds?’ and more often, ‘How do we ascribe mental states toward others?’ There are various answers to the second question, but some of them rely on a similarity mechanism. They postulate that understanding others involve an inference. It is possible to describe at least some theories of non-direct understanding other minds as forms of analogical inference involving similarity relations.

In my paper I will try to present such pattern in three theories: the theory theory (TT) (Dziarnowska, 2012; Goldman, 2012; Newen, 2015); the simulation theory (ST) (Dziarnowska, 2012; Goldman & Mason, 2007; Newen, 2015); and the person model theory (PMT) (Newen, 2015). In each of these theories there is a comparison between two objects, one known and one initially unknown. There are partial similarities between these views that need to be emphasized, and in each of the three theories there is an epistemic strategy for making such comparison and predictions about the initially unknown object. So this kind of reasoning can be presented as analogical reasoning (Cf. Bach, 2012; Gentner, 1998). The initially known object is usually our own mind (Cf. Dziarnowska, 2012), and the initially unknown object is the mind of other.

Schemes to explain each of the theories will be provided. To them will be added the fact that analogical inference can be also applied to theories of the direct perception of others (e.g. Gallager, 2008), in which any kind of inferences is omitted.

## References:

- Bach, T. (2012). Analogical cognition: applications in epistemology and the philosophy of mind and language. *Philosophy Compass*, 7(5), 348-360.
- Dziarnowska, W. (2012). Sposoby poznawania innych umysłów. In M. Miłkowski & R. Poczobut (Eds.), *Przewodnik po filozofii umysłu* (pp. 495-533). Kraków, Wydawnictwo WAM.
- Gallagher, S. (2008). Direct perception in the intersubjective context. *Consciousness and Cognition*, 17 (2), 535-543.
- Gentner, D. (1998). Analogy. In W. Bechtel & G. Graham (Eds.), *A Companion to Cognitive Science* (pp. 107-113). Oxford: Blackwell
- Goldman, A. I. (2012). Theory of Mind. In E. Margolis, R. Samuels & S. P. Stich (Eds.), *The Oxford handbook of philosophy of cognitive science* (pp. 402-424). Oxford University Press.
- Goldman, A., & Mason, K. (2007). Simulation. In P. Thagard (Ed.), *Philosophy of Psychology and Cognitive Science* (pp. 267-293). Elsevier.
- Hyslop, A. (2016). Other Minds. In E. N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy*. URL = <<https://plato.stanford.edu/archives/spr2016/entries/other-minds/>>.
- Newen, A. (2015). Understanding Others: The Person Model Theory. In T. Metzinger & J.M. Windt (Eds.), *Open MIND*: 26(T). Frankfurt am Main: MIND Group.



Irina VULCAN

## Polyantheae and Teodor Zwinger's Similitudinum Method (1575)

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As the very important cognitive tool in the Renaissance, the analogy is generally taken to be for the purpose of getting relations between different data through considerations of similarity. In the culture of the book, it is used particularly as a device operator for the accumulation data as well as for its dialectical systematization (as in Rudolf Agricola's *De inventione dialectica*, 1515, and Ramus' *Dialectique*, 1555). As for the first, the accumulation leads to books of common places or *Polyantheae* which line up all the humanist knowledge of the *studia humanitatis ac divinitatis* under general terms, higgledy-piggledy, through an analogical non-categorical non-logical thinking. As for the second on the other hand, the dialectical systematization as the *Similitudinum Methodus* of Theodor Zwinger (quite late, 1575), has the advantage of presenting them nearly as in Ramist diagrams; the last link more domains according to the historical progress of knowledge, making thoughts visible towards more globalization, which is the universal *mathesis* of the XVIIth century. My contribution proposes to explicate both subjects, showing the interest or point of bring them into relationships in *Theatra*, relationships as various as the epistemology of the age.

## 7. “Amplified” Sylwia Pawłowska’s Photography Exhibition



# AMPLIFIED

Photographic exhibition  
by  
SYLWIA J PAWLOWSKA

**OPENING:**  
24TH MAY 2017  
20:00 TILL LATE  
PRIVATE VIEWING

**25-28TH MAY**  
13:00-19:00

The Venue:  
Blue Note Jazz Club  
Address: Kościuszki 79  
(Entry from Dziedziniec Różany)  
61-871 Poznań

[WWW.SJPPHOTOS.COM](http://WWW.SJPPHOTOS.COM)

THINK ART  
blue note  
CREATED BY UTA RUDZAL & MAREK JACO

## About the Author

One day Sylwia decided to leave Poland and moved to England. And for a person of small needs and true virtue it was a big change. Thirteen years went by in the blink of an eye. In between some dreadful experiences in a chicken factory, and the scrubbing of lots and lots of pots and pans, she found her great passion for photography. That was the beginning and it has worked out blissfully.



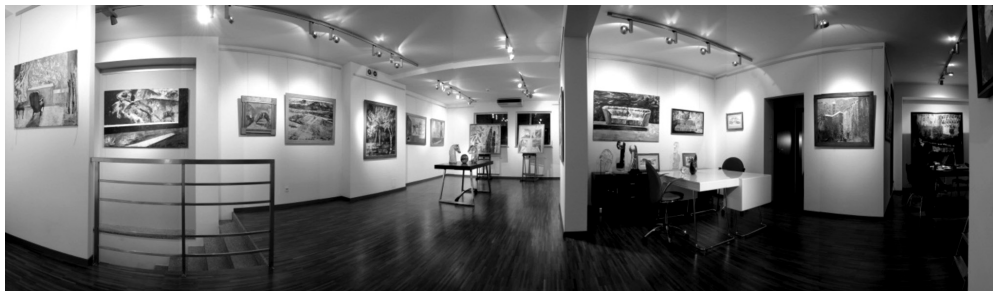
SYLWIA J. PAWŁOWSKA • [www.sjpphotos.com](http://www.sjpphotos.com)



After graduating from the University of Salford with distinction, she continued her career as a photographer. Sylwia's talent for spotting the smallest details gives her the ability to create things that are unique in their very nature. She has brainstormed, planned and photographed different projects with no limits in subject, while earning a living from commercial work. Nevertheless, she unravels her passion and experiments with new concepts, directed towards discovering her true subjects.



The Exposition is organized by THINK ART- MYŚLENIE SZTUKĄ Izabela Rudzka [www.thinkart.pl](http://www.thinkart.pl)



The Think Art – Myślenie Sztuką Project propagates personality development and image building through art. Think Art – Myślenie Sztuką is also an independent space for thought and art created in 2010 by Izabela Rudzka to present individual and avant-garde attitudes of artists operating independently, but speaking out in the classical areas of art such as painting, sculpting, photography or graphics. Think Art – Myślenie Sztuką has so far organised more than 25 exhibitions of Polish and foreign artists: “Homage for Jan Bredyszak”, Andrzej Leśnik, painting exhibition (2015); Catherine Chantilly (France) “Cosmic Fusion”, painting exhibition, (2014); Zviad Glonti (Georgia) “Identity”, painting exhibition, (2014).

Think Art – Myślenie Sztuką also operates in the area between the Audience and the Artist, creating events and projects promoting and introducing contemporary art in Poland and abroad: Izabela Rudzka painting “Flying Sofa” in Saatchi Screen Project, Saatchi Gallery, London ( 2013), an exhibition “outside Poznań”, cooperation with the Arsenal Gallery ( 2016), Poznań , exhibition of painting “Izabela Rudzka: Gemalt im Firmament – die Textur des Weltraumes”, Gallery in Kastenmeiers, Dresden, Germany (2017).

Think Art also actively co-operates with the academic community in Poznań by organising projects which propagate the synergy between art and science: (1) Art exhibition Sylwia J. Pawłowska “AMPLIFIED”, The Second World Congress on Analogy, Poznań; (2) Art& science project “Artistry of Nature - Genesis of Subtlety. Synergy makes a whole.” Part I : “The Message of Time” and Part II: “Perception Space”, (2014-2016). Author of the project: Izabela Rudzka. The project carried out in collaboration with the Faculty of Biology AMU in Poznań and Institute of Molecular Biology and Biotechnology, Poznań; (3) “Man, the Bible, Art” – exhibition and promotion of the book by Prof. B. Pawlaczyk (2015), cooperation with Poznań University of Medical Sciences Publishing House.

## 8. Musical Events

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As we want very much to introduce more art to the World Congresses on Analogy and we have started a great cooperation with the Ignacy Jan Paderewski Academy of Music in Poznań, and we will enjoy not only some wonderful talks concerning analogies in the history and theory of music, but we will have an opportunity to listen three beautiful concerts.

### Concert by Barbara Kubiak

We are truly honored and especially proud to have a possibility to listen to opera arias performed by Prof. Barbara Kubiak. This unique concert will take place on May 26th, in the Lubrański Hall, Collegium Minus, Adam Mickiewicz University in Poznań. Prof. Kubiak already has a devoted fan club among the participants of the World Congress on Analogy.

BARBARA KUBIAK is a graduate of Ignacy Jan Paderewski Academy of Music in Poznań. Already in 1986, still during her studies she has made her debut on the stage of the Great Theatre Opera House in Poznań as the First Dame in Mozart's *Zauberflöte* (*Magic Flute*). Since 1987 she has been permanently bound with this opera stage. She co-operated with the best opera houses both in Poland and abroad such as Great Theatres in Poznań and Łódź, Wrocław Opera, Kraków Opera or Baltic Opera in Gdańsk in numerous guest performances. She also took part in many tours with the mentioned opera houses among others to Netherlands, Belgium, Luxemburg, France and Great Britain, where she presented herself to the local public in Verdi's operas: *Aida* (title role), *Nabucco*

(Abigaille), *La Forza del Destino* (Leonora), *Il Trovatore* (Leonora), Puccini's operas: *Madame Butterfly*, *Tosca* and Bellini's *Norma*. Together with Grand Theater – National Opera in Warsaw Barbara Kubiak performed the role of Abigaille in Giuseppe Verdi's *Nabucco* during Beijing Music Festival in China and Afrodite Opera Festival in Pafos (Cyprus). Barbara Kubiak's repertoire includes the most beautiful parts from Verdi's operas (*Nabucco*, *La Forza del Destino*, *Il Trovatore*, *Otello*, *Macbeth*, *Don Carlos*, *Ernani*, *Aida*, *Un Ballo in Maschera*) Puccini's operas (*La Bohème*, *Turandot*, *Madame Butterfly*, *Tosca*, *Suor Angelica*), Moniuszko's operas (*Hrabina*, *Halka*), Mozart's operas (*Zauberflöte*, *Le Nozze di Figaro*), Beethoven's *Fidelio*, Shostakovich's *Lady Macbeth of Mtsensk District* (Katarina Izmailova), and Janacek's *Jenufa* (Kostelnička).

Barbara Kubiak often performs the oratorio and concert repertoire. She cooperates with the best Polish orchestras and festivals performing such works as Britten's *War Requiem*, Mahler's the *2nd*, *4th* and *8th Symphony*, Górecki's the *2nd* and *3rd Symphony*, Kilar's *Missa pro pace and Angelus*, Rossini's *Stabat Mater*, Dvorak's *Stabat Mater*, Szymanowski's *Stabat Mater*, Mozart's *Requiem*, Verdi's *Requiem* and Nowowiejski's *Quo vadis*.

She has also recorded four albums – Verdi's operas: *Nabucco* and *Il Trovatore*, Szymanowski's *Stabat Mater* and Mahler's *8th Symphony*.

Since 2008 she has been involved in education, leading an opera performance class at I. J. Paderewski Music Academy in Poznan. In 2009 she received her PhD in Musical Arts.

## **Instrumental Concert**

We will also have the opportunity to listen to instrumental concerts with beautiful pieces of classical music by Haendel, Haydn and Mozart. These pieces will be played by sextet formed especially for the Second World Congress on Analogy, which has prepared an exciting selection of chamber music for the evening of 24 May 2017 in the Blue Note Jazz Club in Poznań. All the members of the ensemble are connected with the Adam Mickiewicz University. The ensemble consists of:

### **Violins:**

Paulina GROCHAL – a student of Sound Design, passionate about everything connected with music and film. In her spare time she travels around the world and gets involved in new musical projects.

### **Viola:**

Joanna TATARKIEWICZ – a graduate of the Faculty of Law and Administration and the Faculty of Modern Languages, Legal Counsel Trainee at the Regional Chamber of Legal Counsel in Poznań .

### **Cello:**

Diana PATEREK – student of Sound Design

### **Flute:**

Natalia CHUDZICKA – a PhD student at The Ignacy Jan Paderewski Academy of Music in Poznan and graduate of the Universität für Musik und darstellende Kunst in Vienna, she is as well a law student at the Adam Mickiewicz University in Poznań. She has been playing the flute since she was eight years old. The flute is her first and greatest passion among many others interests such as mathematics, law and sports.

### **Recorder:**

Przemysław KRZYWOSZYŃSKI – Assistant Professor, Chair of History of Political and Legal Doctrines and of Philosophy at the Faculty of Law and Administration. He is also currently finishing his PhD thesis in the Institute of Musicology at the Adam Mickiewicz University.

## A Vocal Concert by Akolada

AKOLADA is a female vocal trio formed in 2012 in Czempień, Poland. The group sings contemporary Polish and foreign pieces, and religious vocal music, harmonizing with instrumental music or performing *a capella*. The trio collaborates with a jazz arranger, which results in unique arrangements of the pieces they sing. The group regularly features in cultural events in Wielkopolska Province, gives occasional charity concerts, sings in local churches, and competes in national festivals.

Akolada was a finalist at the International Festival of Carols and Pastorals in Będzin (Poland) in 2013, and a four-time laureate of national festivals in Kalisz, Brzeg and Tuchola.

The group consists of a biology student Joanna Michalczyk (alto), a law student, Paulina Płoceniak (alto), and a teacher of English and vocalist Agnieszka Szymańska (soprano), who is the founder and leader of the trio. Their home-base is the Centre of Culture in Czempień and they all study at the Adam Mickiewicz University in Poznań.





























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**Estelle Carciofi** works at the National Center for Scientific Research in Paris in the field of information and communication. She is a philosophy graduate, and she is passionate about philosophy. She has taught courses for adults and organized philosophical workshops for children for several years before embarking on research in 2015, in collaboration with two Polish collaborators. Her project is focused on human nature and the concept of love most of all in works by Albert Camus.

**Katarzyna Gan-Krzywoszyńska** is Assistant Professor in the Department of Logic and Methodology of Science (Adam Mickiewicz University, Poznań, Poland). Her current research fields are post-dialogical philosophy, the methodology of the humanities and Latin-American philosophy. She is the author of one book and over 20 publications on history of logic, epistemology and the philosophy of dialogue.



**Małgorzata Leśniewska** is Assistant Professor at the Department of General Zoology (Adam Mickiewicz University, Poznań, Poland). Her main research work is myriapodology. She is the author of three books and over 50 publications on Chilopoda communities, morphological anomalies and their vital role in studies on evolutionary developmental biology.

**Przemysław Krzywoszyński** is Assistant Professor at the Faculty of Law and Administration (Adam Mickiewicz University, Poznań, Poland), and he is also currently finishing his PhD thesis in musicology. He is the author of 50 publications concerning the theory of democracy and the history of political thought, and 20 on musical analysis and the historical context of French and Italian 18th- and 19th-century operas.

